Survey Instruments for Robotics Research in the Human Factors and Aging Laboratory

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EXECUTIVE SUMMARY

Personal robots are being developed in a variety of contexts wherein humans will interact closely with them. Our research program on human-robot interaction is intended to guide the design of such robots to ensure they are safe to use; effective and efficient; and acceptable to the target users. To that end, we have developed several instruments to assess people's experience with and attitudes towards robots. Our goals were to identify the tasks people might want a robot to assist them with and to identify potential barriers and facilitators for adoption. In addition, we wanted to be able to quantify people's prior experience with or awareness of various robots.

In this report we present these measures related to human-robot interaction: (1) *Assistance Preference Checklist*; (2) *Robot Opinions Questionnaire*; and (3) *Robot Familiarity and Use Questionnaire*. Because these were newly developed instruments, they have evolved over time. The primary impetus for this report was to keep track of the various iterations as they were used in different projects in the Human Factors and Aging Laboratory.

An additional purpose was to document the background, administration/scoring method, and the details of each measure to share with researchers outside of our lab. In each section we provide the reference for the publication wherein the instrument was used. Note that some of these research efforts are ongoing and have not yet been published as journal articles. Please contact us if there is any uncertainty regarding the version used in future publications.

1. INTRODUCTION

In this report we present the following measures related to human-robot interaction: (1) *Assistance Preference Checklist*; (2) *Robot Opinions Questionnaire*; and (3) *Robot Familiarity and Use Questionnaire*. For each measure we provide a brief background regarding the purpose and the development of the instrument. We then describe the instructions for administration, the various iterations over time, and information about scoring. We also provide the citation for the papers/projects wherein the version was used. The complete instruments are presented in the Appendices.

2. ASSISTANCE PREFERENCE CHECKLIST

2.1. Purpose

The purpose of the *Assistance Preference Checklist* was to assess how preferences for human assistance versus robot assistance vary as a function of task, and perhaps change over time. This questionnaire can be administered before or after interacting with a robot or both before and after to assess changes in pre/post preferences.

2.2. Development

The original *Assistance Preference Checklist* was developed for a structured group interview study investigating older adults' attitudes for robot assistance for a variety of everyday tasks (Appendix A; Smarr et al., 2014). The task checklist consists of 48 Likert scale items, all beginning with the phrase: *If I needed assistance, I would prefer help from…* This phrase is followed by a list of tasks for which a participant may need assistance, such as bathing or doing laundry, with response options for assistance preference: 1 = only a human, 2 = prefer a human, 3 = no preference, 4 = prefer a robot, 5 = only a robot.

The original Assistance Preference Checklist also includes three free response questions:

- "If the robot could perform only 5 of the tasks listed on the previous pages, which 5 would you want it to do?" (followed by 5 answer spaces).
- "Please write any comments about how you answered these questions here:" (followed by a blank space for responses).
- "Are there any additional tasks with which you would like robotic assistance?" (followed by 5 answer spaces).

2.3. Instructions for Administration

The original instructions for administration were:

"*We are interested in learning about older adults' preferences for assistance in performing daily living tasks. In particular, we are looking for opinions about human assistance and robot assistance.*

When completing this questionnaire, please imagine you need assistance in everyday life with various tasks. For each of the following tasks, please provide your opinion about your:

- *Preference for human assistance*
- *No preference*
- *Preference for robot assistance*

Assume that the robot could perform the task to the level of a human. Please circle the most appropriate response for your general preference (we understand that there may be exceptions). On the last page, there is space for you to provide additional comments about your preferences for having robot and human assistance."

The instructions for administration remained similar in later iterations, with minor adjustments (see 2.4 Further Use and Revisions).

The following reference used this version of the materials:

Smarr, C.-A., Mitzner, T. L., Beer, J. M., Prakash, A. Chen, T. L., Kemp, C. C., & Rogers, W. A. (2014). Domestic robots for older adults: Attitudes, preferences, and potential. *International Journal of Social Robotics, 6*(2), 229-247.

(Please note that this is the preferred citation to use when citing the original version.)

2.4. How to Score

Frequency data can be presented with histograms for each item, collapsed across category (e.g., leisure activities, personal care, health, chores) or collapsed across all items. Descriptive

data can be computed (e.g., mean, median, standard deviation, range) as well, for each item, collapsed across category, or collapsed across all items. To determine if significant preferences exist for either robot or human assistance for each task, one-sample Wilcoxon sign-rank tests can be performed to compare each task median against 3.00, where 3.00 = no preference.

2.5. Further Use and Revisions

2.5.1. Aware Home Study

The Aware Home study version was the 1st iteration of the original *Assistance Preference Checklist.* This version of the checklist can be found in Appendix B. The original structure was the same, but the content was modified with the addition of nine new tasks: delivering medication, holding items, monitoring health, reading, shopping, researching medication, rehabilitation exercises, toileting, and turning on/off controls. The original task "learning new skills" was split into two questions: learning physical skills and learning knowledge. The three free response questions after the Likert scale questions remained the same.

The following reference used this version of the materials:

Prakash, A., Beer, J. M., Deyle, T., Smarr, C.-A., Chen, T. L., Mitzner, T. L., Kemp, C. C., & Rogers, W. A. (2013). Older adults' medication management in the home: How can robots help? *Proceedings of the 8th ACM/IEEE International Conference on Human-Robot Interaction* (pp. 283-290). New York, NY: Association for Computing Machinery.

2.5.2. Lorenza Tiberio Healthcare Providers Study

The Healthcare Providers study version was the 3rd iteration of the original *Assistance Preference Checklist.* This version of the checklist can be found in Appendix C. Again, this version retained the structure of the original checklist, but changed the content to reflect the tasks that are frequently performed by healthcare providers caring for older adults. The Healthcare Providers study version categorized tasks into the following sections: Activities of Daily Living

(9 questions), Instrumental Activities of Daily Living (5 questions), Medical Tasks (7 questions), Device Use (14 questions), and Administrative and Communication Tasks (4 questions). Of these 39 tasks, 1 task was retained verbatim from the original version (i.e., shaving), several other items were similar, but reworded for the context of the study (e.g., bathing was changed to bathing/showering, walking was changed to ambulation, eating/feeding myself was changed to feeding). This version also included three blank scale items to be added by participants if applicable, with the heading *"Other tasks or devices. Please list below:"* This version also modified the free response questions at the end of the checklist. Instead of asking what 5 tasks the participant would most want the robot to perform, this version asks what 5 tasks *"the robot should absolutely do"* and which 5 tasks *"the robot should absolutely NOT do."* The second question from the original was removed, and the third question from the original remained the same, *"Are there any additional tasks with which you would like robotic assistance?"*

The following reference used this version of the materials:

> Tiberio, L. Mitzner, T. L., Kemp, C. C., & Rogers, W. A. (2013). Investigating healthcare providers' acceptance of personal robots for assisting with daily caregiving tasks. *Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems* (pp. 499-504). New York, NY: Association for Computing Machine.

2.5.3. Jenay Beer Dissertation Study

Jenay Beer's dissertation study included the 4th iteration of the original *Assistance Preference Checklist.* This version of the checklist can be found in Appendix D. The structure and content of the original checklist was modified for this version. For all of the Likert scale questions, an additional response was added, (0) *"I currently do NOT want assistance."* Beer included 17 new tasks and removed 25 tasks from the original checklist. Beer's version includes tasks in the following categories: Activities (5 tasks), Rising (2 tasks), Chores (11 tasks), Dressing (2 tasks), Eating (3 tasks), Grip (3 tasks), Hygiene (7 tasks), Medication Management

(3 tasks), Reach (2 tasks), and Walking (2 tasks). The three free response questions at the end remained identical to those in the original checklist.

The following reference used this version of the materials:

Beer, J. M. (2014). *Understanding older adults' perceptions of usefulness of an assistive home robot* (Unpublished Dissertation). Georgia Institute of Technology, Atlanta, GA.

2.5.4. Akanksha Prakash Master's Thesis Study

Akanksha Prakash's master's thesis study (Prakash, 2013) used the Aware Home version (Appendix B) of the *Assistance Preference Checklist*, making no changes.

2.5.5. Katherine Olson Dissertation Study

Katherine Olson's dissertation study included the 5th iteration of the original *Assistance Preference Checklist*. This version of the checklist can be found in Appendix E. This version modified the original instructions and checklist significantly to focus specifically on trust rather than on general preferences. The instructions are as follows:

We are interested in learning about younger and older adults' trust for assistance in performing daily living tasks. In particular, we are looking for opinions about trust in human assistance and robot assistance. When completing this questionnaire, please imagine you need assistance in everyday life with various tasks. For each of the following tasks, please provide your opinion about:

- ▪*Trusting a human more to provide assistance*
- ▪*No preference*
- ▪*Trusting a robot more to provide assistance*

Assume that the robot could perform the task to the level of a human. Please circle the most appropriate response for your general preference (we understand that there may be

exceptions). On the last page, there is space for you to provide additional comments about trusting a human and robot for assistance.

Olson included only a subset of home-based tasks (20 tasks) from the original checklist. The three free response questions at the end remained identical to those in the original checklist.

The following reference used this version of the materials:

Olson, K. (2014). *Understanding the construct of human trust in domestic service robots* (Unpublished Dissertation). Georgia Institute of Technology, Atlanta, GA.

3. ROBOT OPINIONS QUESTIONNAIRE

3.1. Purpose

The purpose of the *Robot Opinions Questionnaire* was to assess attitudinal acceptance of robots, specifically regarding perceptions of usefulness and ease of use. This questionnaire can be administered before or after interacting with a robot or both before and after to assess changes in pre/post preferences.

3.2. Development

The original *Robot Opinions Questionnaire* was developed to measure older adults' attitudinal acceptance of robots (Smarr et al., 2014; Appendix F). The questionnaire was based on standard technology acceptance scales developed to measure the perceptions of usefulness and ease of use dimensions of acceptance (Davis, 1989). The questionnaire consists of 12 opinion statements about robots. Of the 12 statements 6 were in reference to the usefulness of a robot and 6 were in reference to the ease of use of a robot. Each statement is presented with a 7-point Likert scale that corresponds to levels of agreement with the statement: 1 = extremely unlikely, 2 = quite unlikely, 3 = slightly unlikely, 4 = neither likely or unlikely, 5 = slightly likely, 6 = quite likely, 7 = extremely likely.

3.3. Instructions for Administration

The original instructions for administration were:

"*Imagine that you have the opportunity to use or operate a robot. Please place an X in the response box that best represents your general opinion (we understand that there may be exceptions).*"

The following reference used this version of the materials:

Smarr, C.-A., Mitzner, T. L., Beer, J. M., Prakash, A. Chen, T. L., Kemp, C. C., & Rogers, W. A. (2014). Domestic robots for older adults: Attitudes, preferences, and potential. *International Journal of Social Robotics, 6*(2), 229-247.

(Please note that this is the preferred citation to use when citing the original version.)

3.4. How to Score

Frequency data can be presented with histograms for each item, collapsed across dimensions (i.e., perceived ease of use and perceived usefulness), or collapsed across all items. Descriptive data can be computed (e.g., mean, median, standard deviation, range) as well, for each item, collapsed across dimension, or collapsed across all items. If pre and post assessments were conducted, they can be compared using a Wilcoxon sign-rank test.

3.5. Further Use and Revisions

3.5.1. Aware Home Study

The Aware Home study used the original version of the *Robot Opinions Questionnaire* (Appendix F), making no changes.

3.5.2. Lorenza Tiberio Healthcare Providers Study

The Healthcare Providers study was the 1st iteration of the original version of the *Robot Opinions Questionnaire*. This version of the questionnaire can be found in Appendix G. The structure was changed to be a table, with the opinion statements along the vertical axis and the scale of agreement along the horizontal axis. The response options remained the same.

The content of this iteration was modified from the original. While all of the original 12 statements were included, they were presented with a focus on using a robot for caregiving tasks rather than daily life. For example, “Using a robot would make my daily life easier” was changed

to “Using a robot would make caregiving tasks easier.” This version also added 17 new statements across 4 additional dimensions of technology acceptance: perceived advantages, disadvantages, effects on the relationship with the patient, and social image.

The following reference used this version of the materials:

Tiberio, L. Mitzner, T. L., Kemp, C. C., & Rogers, W. A. (2013). Investigating healthcare providers' acceptance of personal robots for assisting with daily caregiving tasks. *Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems* (pp. 499-504). New York, NY: Association for Computing Machinery.

3.5.3. Jenay Beer Dissertation Study

Jenay Beer’s dissertation study was the 2nd iteration of the original version of the *Robot Opinions Questionnaire*. This version of the questionnaire can be found in Appendix H. Beer’s checklist was the exact same format as the original questionnaire, but the content was modified. The instructions were modified, as well, to state, *“Imagine that the person described in the persona has the opportunity to use a robot, such as the PR2, to assist with the task specified. Please place an X in the response box that best represents your general opinion (we understand that there may be exceptions).”* The persona is Mr. H and the task is dressing. The questionnaire includes eight scenarios about Mr. H’s experiences dressing with a robot’s assistance. For example, one scenario reads, *“A robot will assist Mr. H with dressing reliably and without error.”* The response options are the same as the original questionnaire.

The following reference used this version of the materials:

Beer, J. M. (2014). *Understanding older adults’ perceptions of usefulness of an assistive home robot.* (Unpublished Dissertation) Georgia Institute of Technology, Atlanta, GA.

3.5.4. Cory Smarr Dissertation Study

Cory Smarr's dissertation study was the 3rd iteration of the original *Robot Opinions Questionnaire*. This version of the questionnaire can be found in Appendix I. In this iteration, Smarr expanded upon the original version, adapting it to assess acceptance of the Deere Tango E5, a robot lawn mower. Smarr added questions about one's intention to buy the Tango robot and one's level of confidence and comfort with the machine. In addition, Smarr included 92 statements about the Tango robot mower with a 7-point Likert scale ranging from "strongly disagree" to "strongly agree". The first 39 statements are categorized as general statements about the Tango. Examples of these statements are *"I feel emotionally connected to this robot"* and *"Interacting with a robot makes me nervous."* The next eight questions focus on the appearance of the robot mower, such as, *"The robot looks useful."* Following this are 40 questions about using the Tango robot mower, such as, *"I know how to use the robot's screen to make the robot mow."* The final set of statements is geared towards using the Tango application on the tablet computer. An example is, *"I can control the robot with the tablet without making mistakes."* The instructions were also modified from the original to state, *"Please answer the following questions keeping the robot mower in mind. We are interested in your thoughts and opinions so there are no right or wrong answers. Some of these questions may seem repetitive, so it is okay if your answers overlap."*

The following reference used this version of the materials:

Smarr, C.-A. (2014). *Applying a qualitative framework of acceptance of personal robots* (Unpublished Dissertation). Georgia Institute of Technology, Atlanta, GA.

3.5.5. Sean McGlynn Paro Study

The Paro study was the 4th iteration of the original *Robot Opinions Questionnaire*. This version of the questionnaire can be found in Appendix J. The structure was changed to be a table,

with the scenarios along the vertical axis and the scale of agreement along the horizontal axis. The response options remained the same. The content of this iteration was similar to the first iteration. While all of the original 12 items were included, they were worded with a focus on the Paro robot specifically. For example, *"Using a robot would make my daily life easier"* was changed to *"Using Paro would make my daily life easier."* Each of the 12 sentences was changed in a similar fashion. This version also changed the instructions to read, *"Indicate the extent to which you find the following statements likely or unlikely."*

The following reference used this version of the materials:

McGlynn, S., Snook, B., Kemple, S., Mitzner, T. L., & Rogers, W. A. (2014). Therapeutic robots for older adults: investigating the potential of Paro. *Proceedings of the 9th ACM/IEEE International Conference on Human-Robot Interaction* (pp. 246-247). New York, NY: Association for Computing Machinery.

3.5.6. Akanksha Prakash Master's Thesis Study

Akanksha Prakash's master's thesis study used the original *Robot Opinions Questionnaire* (Appendix F), making no changes.

3.5.7. Katherine Olson Dissertation Study

Katherine Olson's dissertation study used the original *Robot Opinions Questionnaire* (Appendix F), making no changes.

4. ROBOT FAMILIARITY AND USE QUESTIONNAIRE

4.1. Purpose

The purpose of the *Robot Familiarity and Use Questionnaire* is to assess the extent of familiarity and use experience one has with different types of robots.

4.2. Development

The original *Robot Familiarity and Use Questionnaire* was developed for a structured group interview study investigating older adults' attitudes for robot assistance for a variety of everyday tasks (Appendix K; Smarr et al., 2014). This questionnaire allowed researchers to assess participants' familiarity and use experience with various types of robots. The questionnaire included 13 robot categories: autonomous car, domestic or home robot, entertainment or toy robot, manufacturing robot, military robot, Personal Robot 2, remote presence robot, research robot, robot lawn mower, space exploration robot, surgical robot, and unmanned aerial vehicle. Participants were presented a 5-point Likert scale to indicate their familiarity with each of these categories of robots: 0 = not sure what this is, 1 = never heard about, seen, or used this robot, 2 = only heard about or seen this robot, 3 = used or operated this robot only occasionally, 4 = used or operated this robot frequently. The questions were structured in a table with rows of alternating colors.

4.3. Instructions for Administration

The original instructions for administration were:

"For the following robots, please indicate your familiarity in terms of hearing about them, using them, or operating them. Please circle only one option."

The following reference used this version of the materials:

Smarr, C.-A., Mitzner, T. L., Beer, J. M., Prakash, A. Chen, T. L., Kemp, C. C., & Rogers, W. A. (2014). Domestic robots for older adults: Attitudes, preferences, and potential. *International Journal of Social Robotics, 6*(2), 229-247.

(Please note that this is the preferred citation to use when citing the original version.)

4.4. How to Score

Descriptive data can be computed (e.g., mean, median, standard deviation, range), collapsed across all items for a general measure of robot familiarity and usage, or for each item to assess familiarity and usage for a particular type of robot.

4.5. Further Use and Revisions

4.5.1. Aware Home Study

The Aware Home study was the 1st iteration of the original *Robot Familiarity and Use Questionnaire*. This version of the questionnaire can be found in Appendix L. The structure remained identical to the original, and the content was largely the same with the exception of *"unmanned aerial vehicle"* being change to *"unmanned aerial vehicle or drone."*

The following reference used this version of the materials:

Prakash, A., Beer, J. M., Deyle, T., Smarr, C.-A., Chen, T. L., Mitzner, T. L., Kemp, C. C., & Rogers, W. A. (2013). Older adults' medication management in the home: How can robots help? *Proceedings of the 8th ACM/IEEE International Conference on Human-Robot Interaction* (pp. 283-290). New York, NY: Association for Computing Machinery

4.5.2. Lorenza Tiberio Healthcare Providers Study

The Healthcare Providers study used the original *Robot Familiarity and Use Questionnaire* (Appendix K), making no changes.

4.5.3. Jenay Beer Dissertation Study

Jenay Beer's Dissertation used the 2nd iteration of the original *Robot Familiarity and Use Questionnaire*. This version of the questionnaire can be found in Appendix M. The structure remained identical to the original, and the content was the same with the exception of "unmanned aerial vehicle" being change to "unmanned aerial vehicle or drone".

The following reference used this version of the materials:

Beer, J. M. (2014). *Understanding older adults' perceptions of usefulness of an assistive home robot.* (Unpublished Dissertation) Georgia Institute of Technology, Atlanta, GA.

4.5.4. Cory Smarr Dissertation Study

Cory Smarr's Dissertation study was the 3rd iteration of Smarr's original *Robot Familiarity and Use Questionnaire*. This version of the questionnaire can be found in Appendix N. In this version, Deere Tango E5 was added as a new type of robot, adding a 14th item to the questionnaire. Again, *"unmanned aerial vehicle"* was change to *"unmanned aerial vehicle or drone."* The structure remained identical to the original.

The following reference used this version of the materials:

Smarr, C.-A. (in prep). *Applying a qualitative framework of acceptance of personal robots* (Unpublished Dissertation.) Georgia Institute of Technology, Atlanta, GA.

4.5.5. Sean McGlynn Paro Study

The Paro study was the 4th iteration of the original *Robot Familiarity and Use Questionnaire*. This version of the questionnaire can be found in Appendix O. This version made

changes to both the content and the structure. In this version, the "personal robot" category was replaced with *"Paro."* In addition, a *"before today"* clause was added to the instructions for more clarity. Again, *"unmanned aerial vehicle"* was change to "*unmanned aerial vehicle or drone*." Furthermore, the Likert scales were shifted from 0-4 to 1-5 and the table formatting was updated to increase readability for senior participants.

The following reference used this version of the materials:

McGlynn, S., Snook, B., Kemple, S., Mitzner, T. L., & Rogers, W. A. (2014). Therapeutic robots for older adults: investigating the potential of Paro. *Proceedings of the 9th ACM/IEEE International Conference on Human-Robot Interaction* (pp. 246-247). New York, NY: Association for Computing Machinery.

4.5.6. Akanksha Prakash Master's Thesis Study

Akanksha Prakash's master's thesis study (Prakash, 2013) used the original *Robot Familiarity and Use Questionnaire* (Appendix K), making no changes. This version can be found in version G.

4.5.7. Katherine Olson Dissertation Study

Katherine Olson's dissertation study (Olson, 2014) used the original *Robot Familiarity and Use Questionnaire* (Appendix K), making no changes.

5. CONCLUSIONS

In this report we present measures related to human-robot interaction: (1) *Assistance Preference Checklist*; (2) *Robot Opinions Questionnaire*; and (3) *Robot Familiarity and Use Questionnaire*. Because these were newly developed instruments, they have evolved over time. The primary impetus for this report was to keep track of the various iterations as they were used in different projects in the Human Factors and Aging Laboratory.

An additional purpose was to document the background, administration/scoring method, and the details of each measure to share with researchers outside of our lab. In each section we provide the reference for the publication wherein the instrument was used. Note that some of these research efforts are ongoing and have not yet been published as journal articles. Please contact us if there is any uncertainty regarding the version used in future publications.

6. REFERENCES

Beer, J. M. (2014). *Understanding older adults' perceptions of usefulness of an assistive homerobot.* (Unpublished Dissertation) Georgia Institute of Technology, Atlanta, GA.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Q 13*(3), 319–340.

McGlynn, S., Snook, B., Kemple, S., Mitzner, T. L., & Rogers, W. A. (2014). Therapeutic robots for older adults: investigating the potential of paro. *Proceedings of the 9th ACM/IEEE International Conference on Human-Robot Interaction* (pp. 246-247). New York, NY: Association for Computing Machinery.

Mitzner, T. L., Smarr, C.-A., Beer, J. M., Chen, T. L., Springman, J. M., Prakash, A., Kemp, C. C., & Rogers, W. A. (2011). *Older Adults' Acceptance of Assistive Robots for the Home* (HFA-TR-1105). Atlanta, GA: Georgia Institute of Technology, School of Psychology, Human Factors and Aging Laboratory.

Olson, K. E. (2014). *Understanding the construct of human trust in domestic service robots..* (Unpublished Dissertation) Georgia Institute of Technology, Atlanta, GA.

Prakash, A. (2013). *Understanding younger and older adults' perceptions of humanoid robots: Effects of facial appearance and task.* (Unpublished master's thesis). Georgia Institute of Technology, Atlanta, GA.

Prakash, A., Beer, J. M., Deyle, T., Smarr, C.-A., Chen, T. L., Mitzner, T. L., Kemp, C. C., & Rogers, W. A. (2013). Older adults' medication management in the home: How can robots help? *Proceedings of the 8th ACM/IEEE International Conference on Human-Robot Interaction* (pp. 283-290). New York, NY: Association for Computing Machinery.

Smarr, C.-A. (2014). *Applying a qualitative framework of acceptance of personal robots* (Unpublished Dissertation.) Georgia Institute of Technology, Atlanta, GA.

Smarr, C.-A., Mitzner, T.L., Beer, J. M., Prakash, A. Chen, T. L., Kemp, C. C., & Rogers, W. A. (2014). Domestic robots for older adults: Attitudes, preferences, and potential. *International Journal of Social Robotics, 6*(2), 229-247.

Tiberio, L. Mitzner, T. L., Kemp, C. C., & Rogers, W. A. (2013). Investigating healthcare providers' acceptance of personal robots for assisting with daily caregiving tasks. *Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems* (pp. 499-504). New York, NY: Association for Computing Machine.

Appendix A - Smarr et al. (2014) Original *Assistance Preference Checklist*

Assistance Preference Checklist

We are interested in learning about older adults' preferences for assistance in performing daily living tasks. In particular, we are looking for opinions about human assistance and robot assistance. When completing this questionnaire, please imagine you need assistance in everyday life with various tasks.

For each of the following tasks, please provide your opinion about your:

- Preference for human assistance
- No preference
- Preference for robot assistance

Assume that the robot could perform the task to the level of a human. Please circle the most appropriate response for your general preference (we understand that there may be exceptions).

On the last page, there is space for you to provide additional comments about your preferences for having robot and human assistance.

If I needed assistance with...	If I needed assistance, I would prefer help from…				
	Only a human$_1$	Prefer a human$_2$	No Preference	Prefer a robot$_4$	Only a robot$_5$
a. Bathing	1	2	3	4	5
b. Being entertained (e.g., playing games, dancing)	1	2	3	4	5
c. Being reminded of appointments	1	2	3	4	5
d. Being reminded of daily activities	1	2	3	4	5
e. Being reminded to take medicine	1	2	3	4	5
f. Brushing teeth	1	2	3	4	5
g. Calling doctors/911	1	2	3	4	5
h. Calling family/friends	1	2	3	4	5
i. Changing light bulbs	1	2	3	4	5
j. Cleaning bathrooms	1	2	3	4	5
k. Cleaning kitchen	1	2	3	4	5
l. Cleaning windows	1	2	3	4	5
m. Controlling for pests/rodents	1	2	3	4	5
n. Deciding what medication to take	1	2	3	4	5
o. Doing laundry	1	2	3	4	5
p. Eating/feeding myself	1	2	3	4	5
q. Entertaining guests	1	2	3	4	5
r. Exercising	1	2	3	4	5
s. Fetching objects from floor (e.g., remote control) or other room (e.g., drink from refrigerator)	1	2	3	4	5
t. Finding/delivering items (e.g., car keys, glasses)	1	2	3	4	5
u. Gardening/pruning	1	2	3	4	5
v. Getting dressed	1	2	3	4	5
w. Getting information on hobbies/topics of interest	1	2	3	4	5
x. Getting information on weather/news	1	2	3	4	5

2"

"

If I needed assistance with...	If I needed assistance, I would prefer help from…				
	Only a human$_1$	Prefer a human$_2$	No Preference	Prefer a robot$_4$	Only a robot$_5$
y. Grocery shopping	1	2	3	4	5
z. Keeping refrigerator clean/stocked	1	2	3	4	5
aa. Learning how to use new technologies	1	2	3	4	5
bb. Learning new skills (e.g., second language, new technology)	1	2	3	4	5
cc. Loading/unloading dishwasher	1	2	3	4	5
dd. Maintaining lawn/raking leaves	1	2	3	4	5
ee. Making bed/changing sheets	1	2	3	4	5
ff. Monitoring home/warning about dangers (e.g., fire)	1	2	3	4	5
gg. Opening and closing doors/ drawers	1	2	3	4	5
hh. Painting (e.g., interior/exterior of home)	1	2	3	4	5
ii. Picking up/moving heavy objects (e.g., furniture)	1	2	3	4	5
jj. Preparing meals/cooking	1	2	3	4	5
kk. Reaching for objects	1	2	3	4	5
ll. Repairing plumbing (e.g., fixing leaking faucets)	1	2	3	4	5
mm. Setting the table	1	2	3	4	5
nn. Shaving	1	2	3	4	5
oo. Sorting mail, shredding, throwing away junk mail	1	2	3	4	5
pp. Sweeping/scrubbing/mopping	1	2	3	4	5
qq. Taking medicine	1	2	3	4	5
rr. Taking out trash/recyclables	1	2	3	4	5
ss. Walking	1	2	3	4	5
tt. Washing dishes by hand	1	2	3	4	5
uu. Washing/combing hair	1	2	3	4	5
vv. Watering plants	1	2	3	4	5

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3"

"

2. If the robot could perform only 5 of the tasks listed on the previous pages, which 5 would you want it to do? (you may list from 0@ tasks)

1) _____

2) _____

3) _____

4) _____

5) _____

3. Please write any comments about how you answered these questions here:

_____
_____
_____
_____
_____
_____

4. Are there any additional tasks with which you would like robotic assistance? (you may list from 0@ additional tasks)

1) _____

2) _____

3) _____

4) _____

5) _____

Appendix B - Prakash et al. (2013) Aware Home Study Version of *Assistance Preference Checklist*

Assistance Preference Checklist

We are interested in learning about older adults' preferences for assistance in performing daily living tasks. In particular, we are looking for opinions about human assistance and robot assistance. When completing this questionnaire, please imagine you need assistance in everyday life with various tasks.

For each of the following tasks, please provide your opinion about your:

- Preference for human assistance
- No preference
- Preference for robot assistance

Assume that the robot could perform the task to the level of a human. Please circle the most appropriate response for your general preference (we understand that there may be exceptions).

On the last page, there is space for you to provide additional comments about your preferences for having robot and human assistance.

"

1"

"

If I needed assistance with...	If I needed assistance, I would prefer help from…				
	Only a human$_1$	Prefer a human$_2$	No Preference	Prefer a robot$_4$	Only a robot$_5$
a. Bathing	1	2	3	4	5
b. Being entertained (e.g., playing games, dancing)	1	2	3	4	5
c. Being reminded of appointments	1	2	3	4	5
d. Being reminded of daily activities	1	2	3	4	5
e. Being reminded to take medicine	1	2	3	4	5
f. Brushing teeth	1	2	3	4	5
g. Calling doctors/911	1	2	3	4	5
h. Calling family/friends	1	2	3	4	5
i. Changing light bulbs	1	2	3	4	5
j. Cleaning bathrooms	1	2	3	4	5
k. Cleaning kitchen	1	2	3	4	5
l. Cleaning windows	1	2	3	4	5
m. Controlling for pests/rodents	1	2	3	4	5
n. Deciding what medication to take	1	2	3	4	5
o. Delivering medication	1	2	3	4	5
p. Doing laundry	1	2	3	4	5
q. Eating/feeding myself	1	2	3	4	5
r. Entertaining guests	1	2	3	4	5
s. Exercising	1	2	3	4	5
t. Fetching objects from floor (e.g., remote control) or other room (e.g., drink from refrigerator)	1	2	3	4	5
u. Finding/delivering items (e.g., car keys, glasses)	1	2	3	4	5
v. Gardening/pruning	1	2	3	4	5
w. Getting dressed	1	2	3	4	5
x. Getting information on hobbies/topics of interest	1	2	3	4	5

" "

2"

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If I needed assistance with...	If I needed assistance, I would prefer help from…				
	Only a human$_1$	Prefer a human$_2$	No Preference	Prefer a robot$_4$	Only a robot$_5$
y. Getting information on weather/news	1	2	3	4	5
z. Grocery shopping	1	2	3	4	5
aa. Holding items for you	1	2	3	4	5
bb. Keeping refrigerator clean/stocked	1	2	3	4	5
cc. Learning how to use new technologies	1	2	3	4	5
dd. Learning new physical skills (e.g., dancing)	1	2	3	4	5
ee. Learning new knowledge (e.g., second language)	1	2	3	4	5
ff. Loading/unloading dishwasher	1	2	3	4	5
gg. Maintaining lawn/raking leaves	1	2	3	4	5
hh. Making bed/changing sheets	1	2	3	4	5
ii. Monitoring home/warning about dangers (e.g., fire)	1	2	3	4	5
jj. Monitoring health (e.g., pulse, temperature, blood pressure)	1	2	3	4	5
kk. Opening and closing doors/ drawers	1	2	3	4	5
ll. Painting (e.g., interior/exterior of home)	1	2	3	4	5
mm. Picking up/moving heavy objects (e.g., furniture)	1	2	3	4	5
nn. Preparing meals/cooking	1	2	3	4	5
oo. Reaching for objects	1	2	3	4	5
pp. Reading (e.g., bills, newspaper)	1	2	3	4	5
qq. Rehabilitation exercises	1	2	3	4	5
rr. Repairing plumbing (e.g., fixing leaking faucets)	1	2	3	4	5
ss. Researching medications and health conditions	1	2	3	4	5

"

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3"

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If I needed assistance with...	If I needed assistance, I would prefer help from…				
	Only a human$_1$	Prefer a human$_2$	No Preference	Prefer a robot$_4$	Only a robot$_5$
tt. Setting the table	1	2	3	4	5
uu. Shaving	1	2	3	4	5
vv. Shopping	1	2	3	4	5
ww. Sorting mail, shredding, throwing away junk mail	1	2	3	4	5
xx. Sweeping/scrubbing/mopping	1	2	3	4	5
yy. Taking medicine	1	2	3	4	5
zz. Taking out trash/recyclables	1	2	3	4	5
aaa. Toileting	1	2	3	4	5
bbb. Turning on/off controls (e.g., switches)	1	2	3	4	5
ccc. Walking	1	2	3	4	5
ddd. Washing dishes by hand	1	2	3	4	5
eee. Washing/combing hair	1	2	3	4	5
fff. Watering plants	1	2	3	4	5

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4"

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2.!If!the!robot!could!perform!only!5!of!the!tasks!listed!on!the!previous!pages,!which!5!would!you!want!it!to!do?!(you!may!list!from!0@!tasks)!

1)!_____!!

2)!_____!

3)!_____!

4)!_____!

5)!_____!!

!

3.!Please!write!any!comments!about!how!you!answered!these!questions!here:!

_____
_____
_____
_____!

!

4.!Are!there!any!additional!tasks!with!which!you!would!like!robotic!assistance?!(you!may!list!from!0@!additional!tasks)!

1)!_____!!

2)!_____!

3)!_____!

4)!_____!

5)!_____!

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Appendix C - Tiberio et al. (2013) Healthcare Providers Study Version of *Assistance Preference Checklist*

Assistance Preference Checklist

We are interested in learning about healthcare providers' preferences for assistance in performing daily job tasks. In particular, we are looking for opinions about human assistance and robot assistance. When completing this questionnaire, please imagine you need assistance with various caregiving tasks.

For each of the following tasks, please provide your opinion about your:

- Preference for human assistance
- No preference
- Preference for robot assistance

Assume that the robot could perform the task as well as a human assistant.

Circle the response that best represents your general opinion (we understand that there may be exceptions).

On the last page, there is space for you to provide additional comments about your preferences for having robot and human assistance.

	If I needed assistance with a task, I would prefer assistance from…				
If I needed assistance with…	**Only a human $_1$**	**Prefer a human $_2$**	**No Preference $_3$**	**Prefer a robot $_4$**	**Only a robot $_5$**
Activity of Daily Living					
a. Ambulation	**1**	**2**	**3**	**4**	**5**
b. Bathing/Showering	**1**	**2**	**3**	**4**	**5**
c. Brushing/combing hair	**1**	**2**	**3**	**4**	**5**
d. Dressing	**1**	**2**	**3**	**4**	**5**
e. Feeding	**1**	**2**	**3**	**4**	**5**
f. Oral hygiene (e.g., brushing teeth)	**1**	**2**	**3**	**4**	**5**
g. Toileting	**1**	**2**	**3**	**4**	**5**
h. Transfer	**1**	**2**	**3**	**4**	**5**
i. Shaving	**1**	**2**	**3**	**4**	**5**
Instrumental Activities of Daily Living					
j. Light housework	**1**	**2**	**3**	**4**	**5**
k. Meal preparation	**1**	**2**	**3**	**4**	**5**
l. Medication management/reminders	**1**	**2**	**3**	**4**	**5**
m. Errands/Shopping	**1**	**2**	**3**	**4**	**5**
n. Using the telephone	**1**	**2**	**3**	**4**	**5**

If I needed assistance with...	If I needed assistance with a task, I would prefer assistance from...				
	Only a human$_1$	**Prefer a human $_2$**	**No Preference $_3$**	**Prefer a robot $_4$**	**Only a robot $_5$**
Medical Tasks					
o. Catheter change	**1**	**2**	**3**	**4**	**5**
p. Checking vitals	**1**	**2**	**3**	**4**	**5**
q. Diabetic care	**1**	**2**	**3**	**4**	**5**
r. IV use	**1**	**2**	**3**	**4**	**5**
s. Non-sterile bandage change	**1**	**2**	**3**	**4**	**5**
t. Ostomy care	**1**	**2**	**3**	**4**	**5**
u. Sterile bandage change	**1**	**2**	**3**	**4**	**5**
Device use					
v. 3 in 1 commode/chair	**1**	**2**	**3**	**4**	**5**
w. Bathing/showering devices (e.g., shower chair, tub transfer bench)	**1**	**2**	**3**	**4**	**5**
x. Blood glucose meter	**1**	**2**	**3**	**4**	**5**
y. Blood pressure monitor	**1**	**2**	**3**	**4**	**5**
z. Communication devices	**1**	**2**	**3**	**4**	**5**

	If I needed assistance with a task, I would prefer assistance from…				
If I needed assistance with…	**Only a human$_1$**	**Prefer a human $_2$**	**No Preference $_3$**	**Prefer a robot $_4$**	**Only a robot $_5$**
aa. Infusion pump	**1**	**2**	**3**	**4**	**5**
bb. Lifting/transferring devices (e.g., gait belt, hoyer lift, sliding board)	**1**	**2**	**3**	**4**	**5**
cc. Oxygen devices, inhalers, nebulizers	**1**	**2**	**3**	**4**	**5**
dd. Specialty bed	**1**	**2**	**3**	**4**	**5**
ee. Tele-monitoring devices	**1**	**2**	**3**	**4**	**5**
ff. Ultrasound	**1**	**2**	**3**	**4**	**5**
gg. Ventilator	**1**	**2**	**3**	**4**	**5**
hh. Walker	**1**	**2**	**3**	**4**	**5**
ii. Wheelchair/ power chair	**1**	**2**	**3**	**4**	**5**
Administrative and Communication Tasks					
jj. Coordination with other healthcare providers	**1**	**2**	**3**	**4**	**5**
kk. Documentation	**1**	**2**	**3**	**4**	**5**
ll. Patient education (e.g., safety)	**1**	**2**	**3**	**4**	**5**
mm. Shift change communication	**1**	**2**	**3**	**4**	**5**

	If I needed assistance with a task, I would prefer assistance from…				
If I needed assistance with…	**Only a human$_1$**	**Prefer a human $_2$**	**No Preference $_3$**	**Prefer a robot $_4$**	**Only a robot $_5$**
Other tasks or devices. Please list below:					
nn.	**1**	**2**	**3**	**4**	**5**
oo.	**1**	**2**	**3**	**4**	**5**
pp.	**1**	**2**	**3**	**4**	**5**

2. If the robot could perform only 5 of the caregiving tasks listed on the previous pages, which 5 would you (not) WANT it to do?
(you may list from 0-5 tasks) and which 5 would you NOT WANT it to do

The robot should absolutely do	The robot should absolutely NOT do
1) _____	1) _____
2) _____	2) _____
3) _____	3) _____
4) _____	4) _____
5) _____	5) _____

3. Are there any additional caregiving tasks with which you would like robotic assistance, besides those listed on the last 3 pages? (you may list from 0-5 additional tasks)

1) _____
2) _____
3) _____
4) _____
5) _____

Appendix D - Beer (2014) Dissertation Study Version of *Assistance Preference Checklist*

Assistance Preference Checklist

We are interested in learning about older adults' preferences for assistance in performing daily living tasks. In particular, we are looking for opinions about human assistance and robot assistance. When completing this questionnaire, please consider your **current abilities** in completing each task.

For each of the following tasks, please provide your opinion about whether you would prefer:

- No assistance
- Human assistance
- Robot assistance

Assume that the robot could perform the task to the level of a human. Please circle the most appropriate response for your general preference (we understand that there may be exceptions).

On the last page, there is space for you to provide additional comments about your preferences for having robot and human assistance.

	I currently do NOT want assistance	*If I currently want assistance*, I would prefer help from…				
		Only a human	Prefer a human	No Preference	Prefer a robot	Only a robot
Activities						
Calling doctor/911	0	1	2	3	4	5
Calling family/friends	0	1	2	3	4	5
Getting in/out of car	0	1	2	3	4	5
Grocery shopping	0	1	2	3	4	5
Running errands	0	1	2	3	4	5
Rising (transfer)						
Getting in/out of bed	0	1	2	3	4	5
Standing up from chair	0	1	2	3	4	5
Chores						
Changing light bulbs	0	1	2	3	4	5
Cleaning bathrooms	0	1	2	3	4	5
Cleaning floor	0	1	2	3	4	5
Cleaning kitchen	0	1	2	3	4	5
Cleaning windows	0	1	2	3	4	5
Doing laundry	0	1	2	3	4	5
Hand washing dishes	0	1	2	3	4	5
Loading dishwasher	0	1	2	3	4	5
Making bed	0	1	2	3	4	5
Pest control	0	1	2	3	4	5
Taking out the trash	0	1	2	3	4	5

2"

"

	I currently do NOT want assistance	*If I currently* want *assistance*, I would prefer help from…				
		Only a human	Prefer a human	No Preference	Prefer a robot	Only a robot
Dressing						
Dressing self (clothes)	0	1	2	3	4	5
Tying shoelaces and fixing buttons	0	1	2	3	4	5
Eating						
Lifting cup/glass to mouth	0	1	2	3	4	5
Preparing meals	0	1	2	3	4	5
Using utensils	0	1	2	3	4	5
Grip						
Opening car doors	0	1	2	3	4	5
Opening jars	0	1	2	3	4	5
Turning faucets on/off	0	1	2	3	4	5
Hygiene						
Brushing teeth	0	1	2	3	4	5
Getting on and off toilet	0	1	2	3	4	5
Haircare	0	1	2	3	4	5
Shampooing hair	0	1	2	3	4	5
Taking shower	0	1	2	3	4	5
Taking tub bath	0	1	2	3	4	5
Washing/drying body	0	1	2	3	4	5

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3"

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	I currently do NOT want assistance	*If I currently want assistance*, I would prefer help from…				
		Only a human	Prefer a human	No Preference	Prefer a robot	Only a robot
Medication management						
Being reminded to take medication	0	1	2	3	4	5
Deciding what medication to take	0	1	2	3	4	5
Taking (administering) medication	0	1	2	3	4	5
Reach						
Bending down to floor	0	1	2	3	4	5
Reaching above head	0	1	2	3	4	5
Walking						
Climbing five steps	0	1	2	3	4	5
Walking on flat ground	0	1	2	3	4	5

"

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Appendix E - Olson (2014) Dissertation Study Version of *Assistance Preference Checklist*

Participant'#_____"

Date:"_____"

Trust in Assistance Checklist

We are interested in learning about younger and older adults' preferences for assistance in performing daily living tasks. In particular, we are looking for opinions about **trust** in human assistance and robot assistance. When completing this questionnaire, please **imagine** you need assistance in everyday life with various tasks.

For each of the following tasks, please provide your opinion about:

- Trusting a human more to provide assistance
- No preference
- Trusting a robot more to provide assistance

Assume that the robot could perform the task to the level of a human. Please circle the most appropriate response for your general preference (we understand that there may be exceptions).

On the last page, there is space for you to provide additional comments about your preferences for having robot and human assistance.

"

1"

"

1.#

" If I needed assistance with...	If I needed assistance, I would be more likely to...				
	Only trust a human$_1$	Prefer to trust a human$_2$	No preference$_3$	Prefer to trust a robot$_4$	Only trust a robot$_5$
a. Bathing	1	2	3	4	5
b. Being reminded to take medicine	1	2	3	4	5
c. Cleaning bathrooms	1	2	3	4	5
d. Cleaning kitchen	1	2	3	4	5
e. Deciding what medication to take	1	2	3	4	5
f. Delivering medication	1	2	3	4	5
g. Entertaining guests	1	2	3	4	5
h. Gardening/pruning	1	2	3	4	5
i. Learning how to use new technologies	1	2	3	4	5
j. Learning new physical skills (e.g., dancing)	1	2	3	4	5
k. Learning new knowledge (e.g., second language	1	2	3	4	5
l. Maintaining lawn/raking leaves	1	2	3	4	5
m. Monitoring home/warning about dangers (e.g., fire)	1	2	3	4	5
n. Opening and closing doors/drawers	1	2	3	4	5
o. Painting (e.g., interior/exterior of home)	1	2	3	4	5
p. Reaching for objects	1	2	3	4	5
q. Repairing plumbing (e.g., fixing leaky faucets)	1	2	3	4	5
r. Taking Medication	1	2	3	4	5
s. Walking	1	2	3	4	5
t. Washing dishes by hand	1	2	3	4	5

"

" "

2"

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#

2. If the robot could perform only 5 of the tasks listed on the previous pages, which 5 would you want it to do? (you may list from 0-5 tasks)

1) _____

2) _____

3) _____

4) _____

5) _____

3. Please write any comments about how you answered these questions here:

_____
_____
_____
_____ _____
_____

4. Are there any additional tasks with which you would like robotic assistance? (you may list from 0-5 additional tasks)

1) _____

2) _____

3) _____

4) _____

5) _____

3"

"

Appendix F - Smarr et al. (2014) Original *Robot Opinions Questionnaire*

ROBOT OPINIONS QUESTIONNAIRE

Imagine that you have the opportunity to use or operate a robot. Please place an X in the response box that best represents your general opinion (we understand that there may be exceptions).

1. My interaction with a robot would be clear and understandable.

☐1	☐2	☐3	☐4	☐5	☐6	☐7
Extremely Unlikely	Quite Unlikely	Slightly Unlikely	Neither	Slightly Likely	Quite Likely	Extremely Likely

2. I would find a robot useful in my daily life.

☐1	☐2	☐3	☐4	☐5	☐6	☐7
Extremely Unlikely	Quite Unlikely	Slightly Unlikely	Neither	Slightly Likely	Quite Likely	Extremely Likely

3. Using a robot would enhance my effectiveness in my daily life.

☐1	☐2	☐3	☐4	☐5	☐6	☐7
Extremely Unlikely	Quite Unlikely	Slightly Unlikely	Neither	Slightly Likely	Quite Likely	Extremely Likely

4. Using a robot in my daily life would increase my productivity.

☐1	☐2	☐3	☐4	☐5	☐6	☐7
Extremely Unlikely	Quite Unlikely	Slightly Unlikely	Neither	Slightly Likely	Quite Likely	Extremely Likely

5. Using a robot would make my daily life easier.

☐1	☐2	☐3	☐4	☐5	☐6	☐7
Extremely Unlikely	Quite Unlikely	Slightly Unlikely	Neither	Slightly Likely	Quite Likely	Extremely Likely

6. Using a robot would improve my daily life.

☐1	☐2	☐3	☐4	☐5	☐6	☐7
Extremely Unlikely	Quite Unlikely	Slightly Unlikely	Neither	Slightly Likely	Quite Likely	Extremely Likely

7. Using a robot in my daily life would enable me to accomplish tasks more quickly.

☐1	☐2	☐3	☐4	☐5	☐6	☐7
Extremely Unlikely	Quite Unlikely	Slightly Unlikely	Neither	Slightly Likely	Quite Likely	Extremely Likely

8. I would find a robot easy to use.

☐1	☐2	☐3	☐4	☐5	☐6	☐7
Extremely Unlikely	Quite Unlikely	Slightly Unlikely	Neither	Slightly Likely	Quite Likely	Extremely Likely

9. I would find a robot to be flexible for me to interact with.

☐1	☐2	☐3	☐4	☐5	☐6	☐7
Extremely Unlikely	Quite Unlikely	Slightly Unlikely	Neither	Slightly Likely	Quite Likely	Extremely Likely

10. It would be easy for me to become skillful at using a robot.

☐1	☐2	☐3	☐4	☐5	☐6	☐7
Extremely Unlikely	Quite Unlikely	Slightly Unlikely	Neither	Slightly Likely	Quite Likely	Extremely Likely

11. I would find it easy to get a robot to do what I want it to do.

☐1	☐2	☐3	☐4	☐5	☐6	☐7
Extremely Unlikely	Quite Unlikely	Slightly Unlikely	Neither	Slightly Likely	Quite Likely	Extremely Likely

12. Learning to operate a robot would be easy for me.

☐1	☐2	☐3	☐4	☐5	☐6	☐7
Extremely Unlikely	Quite Unlikely	Slightly Unlikely	Neither	Slightly Likely	Quite Likely	Extremely Likely

Appendix G - Tiberio et al. (2013) Healthcare Providers Study Version of *Robot Opinions Questionnaire*

ROBOT OPINIONS QUESTIONNAIRE

Imagine that you have the opportunity to use or operate a robot. Circle one option per row that best represents your general opinion (we understand that there may be exceptions).

	Extremely Unlikely$_1$	Quite Unlikely$_2$	Slightly Unlikely$_3$	Neither$_4$	Slightly Likely$_5$	Quite Likely$_6$	Extreme Likely$_7$
1. My interaction with a robot would be clear and understandable.	1	2	3	4	5	6	7
2. I would find a robot useful for caregiving tasks.	1	2	3	4	5	6	7
3. Using a robot would enhance my effectiveness for caregiving tasks.	1	2	3	4	5	6	7
4. Using a robot for caregiving tasks would increase my productivity.	1	2	3	4	5	6	7

	Extremely Unlikely$_1$	Quite Unlikely$_2$	Slightly Unlikely$_3$	Neither$_4$	Slightly Likely$_5$	Quite Likely$_6$	Extreme Likely$_7$
5. Using a robot would make caregiving tasks easier.	1	2	3	4	5	6	7
6. Using a robot would improve my caregiving.	1	2	3	4	5	6	7
7. Using a robot for caregiving tasks would enable me to accomplish tasks more quickly.	1	2	3	4	5	6	7
8. I would find a robot easy to use.	1	2	3	4	5	6	7
9. I would find a robot to be flexible for me to interact with.	1	2	3	4	5	6	7
10. It would be easy for me to become skillful at using a robot.	1	2	3	4	5	6	7

	Extremely Unlikely$_1$	Quite Unlikely$_2$	Slightly Unlikely$_3$	Neither$_4$	Slightly Likely$_5$	Quite Likely$_6$	Extreme Likely$_7$
11. I would find it easy to get a robot to do what I want it to do.	1	2	3	4	5	6	7
12. Learning to operate a robot would be easy for me.	1	2	3	4	5	6	7
13. Using a robot is important to the delivery of care.	1	2	3	4	5	6	7
14. Using a robot could reduce my workload.	1	2	3	4	5	6	7
15. Using a robot could reduce the costs of care delivery.	1	2	3	4	5	6	7
16. Using a robot could reduce the time of care delivery.	1	2	3	4	5	6	7
17. The results of using a robot will be apparent to me.	1	2	3	4	5	6	7

	Extremely Unlikely$_1$	Quite Unlikely$_2$	Slightly Unlikely$_3$	Neither$_4$	Slightly Likely$_5$	Quite Likely$_6$	Extreme Likely$_7$
18. Using a robot in work daily routines would be a status symbol.	1	2	3	4	5	6	7
19. Healthcare providers who use a robot would have a high expertise.	1	2	3	4	5	6	7
20. Using a robot would improve my clinical practices.	1	2	3	4	5	6	7
21. Managing a robot assistant would be time consuming.	1	2	3	4	5	6	7
22. Using a robot would be an extra challenge in my daily work.	1	2	3	4	5	6	7
23. Using a robot would threaten my professionalism.	1	2	3	4	5	6	7
24. A robot would be too slow to be helpful with caregiving tasks	1	2	3	4	5	6	7

	Extremely Unlikely$_1$	Quite Unlikely$_2$	Slightly Unlikely$_3$	Neither$_4$	Slightly Likely$_5$	Quite Likely$_6$	Extreme Likely$_7$
25. Overall, using a robot would negatively influence my interaction with the residents.	1	2	3	4	5	6	7
26. Using a robot would threaten the resident's trust of me.	1	2	3	4	5	6	7
27. Using a robot would limit my independence in making clinical decisions.	1	2	3	4	5	6	7
28. Using a robot would reduce the resident's satisfaction with the quality of health care.	1	2	3	4	5	6	7
29. I would be concerned about a robot replacing me in my job	1	2	3	4	5	6	7

Appendix H - Beer (2014) Dissertation Study Version of *Robot Opinions Questionnaire*

Imagine that the person described in the persona has the opportunity to use a robot, such as the PR2, to assist with the task specified. Please place an X in the response box that best represents your general opinion (we understand that there may be exceptions).

PERSONA: _____ TASK:_____

1. Robot assistance with _____ will make Mr(s).____ seem more independent to others.

☐1	☐2	☐3	☐4	☐5	☐6	☐7
Extremely Unlikely	Quite Unlikely	Slightly Unlikely	Neither	Slightly Likely	Quite Likely	Extremely Likely

2. People in Mr(s).____ life (i.e., family or friends) think that she should use the robot to assist with _____.

☐1	☐2	☐3	☐4	☐5	☐6	☐7
Extremely Unlikely	Quite Unlikely	Slightly Unlikely	Neither	Slightly Likely	Quite Likely	Extremely Likely

3. Robot assistance with _____ is important to Mr(s).____'s daily life.

☐1	☐2	☐3	☐4	☐5	☐6	☐7
Extremely Unlikely	Quite Unlikely	Slightly Unlikely	Neither	Slightly Likely	Quite Likely	Extremely Likely

4. The benefits of a robot assisting Mrs. _____ with _____ are apparent.

☐1	☐2	☐3	☐4	☐5	☐6	☐7
Extremely Unlikely	Quite Unlikely	Slightly Unlikely	Neither	Slightly Likely	Quite Likely	Extremely Likely

5. A robot assisting with _____ will be adaptive to Mr(s)_____ needs.

☐1	☐2	☐3	☐4	☐5	☐6	☐7
Extremely Unlikely	Quite Unlikely	Slightly Unlikely	Neither	Slightly Likely	Quite Likely	Extremely Likely

Imagine that the person described in the persona has the opportunity to use a robot, such as the PR2, to assist with the task specified. Please place an X in the response box that best represents your general opinion (we understand that there may be exceptions).

PERSONA: _____ TASK:_____

6. A robot assisting Mr(s)_____ with _____ is trustworthy.

☐1	☐2	☐3	☐4	☐5	☐6	☐7
Extremely Unlikely	Quite Unlikely	Slightly Unlikely	Neither	Slightly Likely	Quite Likely	Extremely Likely

7. A robot will assist Mr(s).____ with _____ reliably and without error..

☐1	☐2	☐3	☐4	☐5	☐6	☐7
Extremely Unlikely	Quite Unlikely	Slightly Unlikely	Neither	Slightly Likely	Quite Likely	Extremely Likely

8. Using a robot to assist with _____ is useful to Mr(s)_____.

☐1	☐2	☐3	☐4	☐5	☐6	☐7
Extremely Unlikely	Quite Unlikely	Slightly Unlikely	Neither	Slightly Likely	Quite Likely	Extremely Likely

Appendix I - Smarr (2014) Dissertation Study Version of *Robot Opinions Questionnaire*

Robot Mower Opinions Questionnaire

Please answer the following questions keeping the Deere Tango E5 robot mower in mind. We are interested in your thoughts and opinions so there are no right or wrong answers. Some of these questions may seem repetitive, so it is okay if your answers overlap.

1. **Given what you know about the Tango right now and assuming that the Tango is available for purchase, please indicate your intention to buy this robot for your home by marking one number (1-5) on each scale:**

No intention	1	2	3	4	5	**Strong intention**
Unlikely	**1**	2	3	**4**	**5**	**Likely**
Not buy it	1	2	3	4	5	**Buy it**

2. **Assume that the Tango was available for purchase, but you did not own one yet. Would you buy it? Mark one.**

Yes	No	Unsure

3. **Please indicate what your attitude is towards the robot mower by marking one number (1-5) on each scale:**

Bad	1	2	3	4	5	**Good**
Unfavorable	**1**	2	3	**4**	5	**Favorable**
Negative	1	2	3	4	5	**Positive**

4. **Please indicate your level of comfort with using the robot mower. Mark one number.**

Comfortable	1	2	3	4	5	**Uncomfortable**

5. **Please rate your impression of the robot mower by marking one number (1-5) on each scale:**

Fake	1	2	3	4	5	**Natural**
Machine-like	**1**	2	**3**	**4**	5	**Human-like**
Unconscious	1	2	3	4	5	**Conscious**
Artificial	**1**	2	**3**	**4**	5	**Lifelike**
Moves rigidly	1	2	3	4	5	**Moves elegantly**

6. Please indicate how likely each statement is about the robot mower. Mark one response for each statement.

	Extremely Unlikely$_1$	Quite Unlikely$_2$	Slightly Unlikely$_3$	Neither$_4$	Slightly Likely$_5$	Quite Likely$_6$	Extremely Likely$_7$
1. I would find a robot useful in my daily life.	1	2	3	4	5	6	7
2. Using a robot would enhance my effectiveness in my daily life.	1	2	3	4	5	6	7
3. Using a robot in my daily life would increase my productivity.	1	2	3	4	5	6	7
4. Using a robot would make my daily life easier.	1	2	3	4	5	6	7
5. Using a robot would improve my daily life.	1	2	3	4	5	6	7
6. Using a robot in my daily life would enable me to accomplish tasks more quickly.	1	2	3	4	5	6	7
7. My interaction with a robot would be clear and understandable.	1	2	3	4	5	6	7
8. I would find a robot easy to use.	1	2	3	4	5	6	7
9. I would find a robot to be flexible for me to interact with.	1	2	3	4	5	6	7
10. It would be easy for me to become skillful at using a robot.	1	2	3	4	5	6	7

	Extremely Unlikely$_1$	Quite Unlikely$_2$	Slightly Unlikely$_3$	Neither$_4$	Slightly Likely$_5$	Quite Likely$_6$	Extremely Likely$_7$
11. I would find it easy to get a robot to do what I want it to do.	1	2	3	4	5	6	7
12. Learning to operate a robot would be easy for me.	1	2	3	4	5	6	7

7. Please indicate to what extent you agree with each statement about the robot mower. Mark one response for each statement.

	Strongly Disagree$_1$	Moderately Disagree$_2$	Somewhat Disagree$_3$	Neither Disagree or Agree$_4$	Somewhat Agree$_5$	Moderately Agree$_6$	Strongly Agree$_7$
1. I have a bond with this robot	1	2	3	4	5	6	7
2. Robots make me feel uneasy	1	2	3	4	5	6	7
3. Robots do not scare me at all	1	2	3	4	5	6	7
4. Using this robot is not appropriate for a person with my values regarding the role of robots	1	2	3	4	5	6	7
5. I believe I could communicate to others the consequences of using the robot	1	2	3	4	5	6	7
6. I have seen what others do using their robot	1	2	3	4	5	6	7
7. I am quite certain what to expect from the robot	1	2	3	4	5	6	7
8. I find using the robot to be enjoyable	1	2	3	4	5	6	7
9. I find the robot pleasant to interact with	1	2	3	4	5	6	7
10. I think the robot is nice	1	2	3	4	5	6	7
11. Using the robot does not fit the way I view the world	1	2	3	4	5	6	7

	Strongly Disagree$_1$	Moderately Disagree$_2$	Somewhat Disagree$_3$	Neither Disagree or Agree$_4$	Somewhat Agree$_5$	Moderately Agree$_6$	Strongly Agree$_7$
12. Using a robot is compatible with all aspects of my lawn	1	2	3	4	5	6	7
13. I think that using a robot fits well with my lawn	1	2	3	4	5	6	7
14. Using the robot runs counter to my own values	1	2	3	4	5	6	7
15. This robot is very dear to me	1	2	3	4	5	6	7
16. The results of using the robot are apparent to me	1	2	3	4	5	6	7
17. I trust the robot	1	2	3	4	5	6	7
18. This robot has no special meaning for me	1	2	3	4	5	6	7
19. I would have no difficulty telling others about the results of using the robot	1	2	3	4	5	6	7
20. Robots make me feel uncomfortable	1	2	3	4	5	6	7
21. This robot does not move me	1	2	3	4	5	6	7
22. I think the robot can be adaptive to what I need	1	2	3	4	5	6	7
23. I feel the robot understands me	1	2	3	4	5	6	7

	Strongly Disagree$_1$	Moderately Disagree$_2$	Somewhat Disagree$_3$	Neither Disagree or Agree$_4$	Somewhat Agree$_5$	Moderately Agree$_6$	Strongly Agree$_7$
24. I feel emotionally connected to this robot	1	2	3	4	5	6	7
25. Before deciding whether to use a robot, I will be able to properly try it out	1	2	3	4	5	6	7
26. Using the robot runs counter to my values about how to mow my lawn	1	2	3	4	5	6	7
27. The actual process of using the robot will be pleasant	1	2	3	4	5	6	7
28. I think the robot only does what I need at that particular moment	1	2	3	4	5	6	7
29. I think the robot helps me when I consider it to be necessary	1	2	3	4	5	6	7
30. It is easy for me to observe others using a robot at home	1	2	3	4	5	6	7
31. Even if not monitored, I'd trust the robot to mow correctly	1	2	3	4	5	6	7
32. Using the robot goes against what I believe robots should be used for	1	2	3	4	5	6	7
33. I will be permitted to use a robot on a trial basis long enough to see what it could do	1	2	3	4	5	6	7
34. Using a robot fits my lawn	1	2	3	4	5	6	7

	Strongly Disagree$_1$	**Moderately Disagree$_2$**	**Somewhat Disagree$_3$**	**Neither Disagree or Agree$_4$**	**Somewhat Agree$_5$**	**Moderately Agree$_6$**	**Strongly Agree$_7$**
35. I would have difficulty explaining why using the robot may or may not be beneficial	1	2	3	4	5	6	7
36. I will have fun using the robot	**1**	**2**	**3**	**4**	**5**	**6**	**7**
37. Robots are not very visible in my life	1	2	3	4	5	6	7
38. Interacting with a robot makes me nervous	**1**	**2**	**3**	**4**	**5**	**6**	**7**
39. In my life, one sees robots in many yards	1	2	3	4	5	6	7

8. Please indicate to what extent you agree with each statement about the appearance of the robot mower. Mark one response for each statement.

	Strongly Disagree$_1$	Moderately Disagree$_2$	Somewhat Disagree$_3$	Neither Disagree or Agree$_4$	Somewhat Agree$_5$	Moderately Agree$_6$	Strongly Agree$_7$
1. I think the robot's appearance fits with mowing	1	2	3	4	5	6	7
2. I like the way the robot looks	1	2	3	4	5	6	7
3. I find that the robot's appearance does not match with mowing	1	2	3	4	5	6	7
4. The robot looks useful	1	2	3	4	5	6	7
5. The robot looks capable of mowing	1	2	3	4	5	6	7
6. The robot seems easy to use by looking at it	1	2	3	4	5	6	7
7. I enjoy looking at the robot	1	2	3	4	5	6	7

9. Please indicate to what extent you agree with each statement about your expectation for using the robot mower. Mark one response for each statement.

	Strongly Disagree$_1$	Moderately Disagree$_2$	Somewhat Disagree$_3$	Neither Disagree or Agree$_4$	Somewhat Agree$_5$	Moderately Agree$_6$	Strongly Agree$_7$	Not Applicable$_0$
1. The robot's screen will be a good way to control the robot	1	2	3	4	5	6	7	N/A
2. I will control the robot using its screen without making mistakes	1	2	3	4	5	6	7	N/A
3. I can use the robot to mow the lawn	1	2	3	4	5	6	7	N/A
4. I know how to let the robot know what to do through its screen	1	2	3	4	5	6	7	N/A
5. The robot's screen is a good way to control the robot when I am in the yard	1	2	3	4	5	6	7	N/A
6. The robot will make few errors	1	2	3	4	5	6	7	N/A
7. I could depend on this robot to work correctly every time.	1	2	3	4	5	6	7	N/A
8. It will be easy to correct errors when using the robot	1	2	3	4	5	6	7	N/A
9. The robot seems reliable.	1	2	3	4	5	6	7	N/A
10. The robot will accurately mow my lawn	1	2	3	4	5	6	7	N/A
11. I can easily learn how to use the robot	1	2	3	4	5	6	7	N/A

	Strongly Disagree$_1$	Moderately Disagree$_2$	Somewhat Disagree$_3$	Neither Disagree or Agree$_4$	Somewhat Agree$_5$	Moderately Agree$_6$	Strongly Agree$_7$	Not Applicable$_0$
12. I am satisfied with the robot mowing my lawn	1	2	3	4	5	6	7	N/A
13. Each time the robot mows, it will be equally as helpful	1	2	3	4	5	6	7	N/A
14. I could rely on this robot to work whenever I might need it	1	2	3	4	5	6	7	N/A
15. I am physically capable of using the screen on the robot	1	2	3	4	5	6	7	N/A
16. The robot will be efficient in mowing my lawn	1	2	3	4	5	6	7	N/A
17. I can let the robot know what to do in multiple ways	1	2	3	4	5	6	7	N/A
18. I know how to use the robot's screen to make the robot mow	1	2	3	4	5	6	7	N/A

10. Please indicate to what extent you agree with each statement about your expectation for using the robot mower. Mark one response for each statement.

	Strongly Disagree$_1$	Moderately Disagree$_2$	Somewhat Disagree$_3$	Neither Disagree or Agree$_4$	Somewhat Agree$_5$	Moderately Agree$_6$	Strongly Agree$_7$
1. I will not be satisfied with the way my lawn looks	1	2	3	4	5	6	7
2. The pattern of cut grass will be acceptable	1	2	3	4	5	6	7
3. Using the robot to mow will be easy for me	1	2	3	4	5	6	7
4. The robot is not compatible with mowing my lawn	1	2	3	4	5	6	7
5. The robot will damage objects or plants while mowing my lawn	1	2	3	4	5	6	7
6. My grass will not look healthy	1	2	3	4	5	6	7
7. I am not confident that the robot can mow safely	1	2	3	4	5	6	7
8. The robot will use too much electricity to mow	1	2	3	4	5	6	7
9. The robot will take an acceptable amount of time to mow my lawn	1	2	3	4	5	6	7
10. The grass in my lawn will be the appropriate height when the robot mows it.	1	2	3	4	5	6	7
11. The robot will take too much time to mow my lawn	1	2	3	4	5	6	7

	Strongly Disagree$_1$	Moderately Disagree$_2$	Somewhat Disagree$_3$	Neither Disagree or Agree$_4$	Somewhat Agree$_5$	Moderately Agree$_6$	Strongly Agree$_7$
12. The robot is quiet when it mows	1	2	3	4	5	6	7
13. My grass will seem healthy with the robot mowing it	1	2	3	4	5	6	7
14. It will take an appropriate amount of effort to use the robot	1	2	3	4	5	6	7
15. It will be difficult for me to use the robot to mow	1	2	3	4	5	6	7
16. It will take too much effort to use the robot	1	2	3	4	5	6	7
17. The robot will use an acceptable level of electricity when it mows	1	2	3	4	5	6	7
18. The grass will be a consistent height in my lawn with the robot mowing it	1	2	3	4	5	6	7
19. The robot will not damage objects or plants while mowing my lawn	1	2	3	4	5	6	7
20. I feel safe with the robot mowing	1	2	3	4	5	6	7
21. Using this robot to mow fits my lawn	1	2	3	4	5	6	7
22. The robot is too loud when it mows	1	2	3	4	5	6	7

11. Please indicate to what extent you agree with each statement for the using the Tango application on the tablet computer. If you did not use the Tango application on the tablet computer, then mark N/A. Mark one response for each statement.

	Strongly Disagree$_1$	**Moderately Disagree$_2$**	**Somewhat Disagree$_3$**	**Neither Disagree or Agree$_4$**	**Somewhat Agree$_5$**	**Moderately Agree$_6$**	**Strongly Agree$_7$**	**Not Applicable$_0$**
1. I am physically capable of using the tablet to control the robot	1	2	3	4	5	6	7	N/A
2. I will control the robot with the tablet without making mistakes	1	2	3	4	5	6	7	N/A
3. I know how to use the tablet to make the robot mow	1	2	3	4	5	6	7	N/A
4. I know how to let the robot know what to do with the tablet	1	2	3	4	5	6	7	N/A
5. The tablet is a good way to control the robot	1	2	3	4	5	6	7	N/A
6. The tablet is a good way to control the robot when I am in the yard	1	2	3	4	5	6	7	N/A

Appendix J - McGlynn et al. (2014) Paro Study Version of *Robot Opinions Questionnaire*

Opinions of 'Paro'							
2) Indicate the extent to which you find the following statements likely or unlikely.							
#	Extremely Unlikely	Quite Unlikely	Slightly Unlikely	Neither	Slightly Likely	Quite Likely	Extremely Likely
1) I would find Paro useful in my daily life.	1	2	3	4	5	6	7
2) It would be easy for me to become skillful at using Paro.	1	2	3	4	5	6	7
3) Using Paro would make my daily life easier.	1	2	3	4	5	6	7
4) I would find Paro to be flexible for me to interact with.	1	2	3	4	5	6	7
5) My interaction with Paro would be clear and understandable.	1	2	3	4	5	6	7
6) I would find Paro easy to use.	1	2	3	4	5	6	7
7) I would find it easy to get Paro to do what I want it to do.	1	2	3	4	5	6	7
8) Learning to operate Paro would be easy for me.	1	2	3	4	5	6	7
9) Using Paro would enhance my effectiveness in daily life.	1	2	3	4	5	6	7
10) Using Paro in my daily life would increase my productivity.	1	2	3	4	5	6	7
11) Using Paro would improve my daily life.	1	2	3	4	5	6	7
12) Using Paro in my daily life would allow me to accomplish tasks more quickly.	1	2	3	4	5	6	7

Appendix K - Smarr et al. (2014) Original *Robot Familiarity and Use Questionnaire*

ROBOT FAMILIARITY AND USE QUESTIONNAIRE

For the following robots, please indicate your familiarity in terms of hearing about them, using them, or operating them. Please circle only one option.

Robots	Not sure what this is$_0$	Never heard about, seen, or used this robot$_1$	Have only heard about or seen this robot$_2$	Have used or operated this robot only occasionally$_3$	Have used or operated this robot frequently
1. Autonomous Car	0	1	2	3	4
2. Domestic/Home robot (e.g., Roomba)	0	1	2	3	4
3. Entertainment/toy robot (e.g., Aibo, Furby)	0	1	2	3	4
4. Manufacturing robot (e.g., robotic arm in factory)	0	1	2	3	4
5. Military Robot (e.g., search and rescue)	0	1	2	3	4
6. Personal Robot 2 (PR2)	0	1	2	3	4
7. Remote presence robot (e.g., Texai, Anybot)	0	1	2	3	4
8. Research robot (e.g., at university or company)	0	1	2	3	4
9. Robot lawn mower	0	1	2	3	4
10. Robot security guard	0	1	2	3	4
11. Space exploration robot (e.g., Mars Rover)	0	1	2	3	4
12. Surgical robot (e.g., da Vinci Surgical System)	0	1	2	3	4
13. Unmanned Aerial Vehicle (UAV)	0	1	2	3	4

Appendix L - Prakash et al. (2013) Aware Home Study Version of *Robot Familiarity and Use Questionnaire*

ROBOT FAMILIARITY AND USE QUESTIONNAIRE

For the following robots, please indicate your familiarity in terms of hearing about them, using them, or operating them. Please circle only one option.

Robots	Not sure what this is$_0$	Never heard about, seen, or used this robot$_1$	Have only heard about or seen this robot$_2$	Have used or operated this robot only occasionally$_3$	Have used or operated this robot frequently$_4$
1. Autonomous Car	0	1	2	3	4
2. Domestic/Home robot (e.g., Roomba)	0	1	2	3	4
3. Entertainment/toy robot (e.g., Aibo, Furby)	0	1	2	3	4
4. Manufacturing robot (e.g., robotic arm in factory)	0	1	2	3	4
5. Military Robot (e.g., search and rescue)	0	1	2	3	4
6. Personal Robot 2 (PR2)	0	1	2	3	4
7. Remote presence robot (e.g., Texai, Anybot)	0	1	2	3	4
8. Research robot (e.g., at university or company)	0	1	2	3	4
9. Robot lawn mower	0	1	2	3	4
10. Robot security guard	0	1	2	3	4
11. Space exploration robot (e.g., Mars Rover)	0	1	2	3	4
12. Surgical robot (e.g., da Vinci Surgical System)	0	1	2	3	4
13. Unmanned Aerial Vehicle (UAV)/Drone	0	1	2	3	4

Appendix M - Beer (2014) Dissertation Study Version of *Robot Familiarity and Use Questionnaire*

ROBOT FAMILIARITY AND USE QUESTIONNAIRE

For the following robots, please indicate your familiarity in terms of hearing about them, using them, or operating them. Please circle only one option.

Robots	Not sure what this is$_0$	Never heard about, seen, or used this robot$_1$	Have only heard about or seen this robot$_2$	Have used or operated this robot only occasionally$_3$	Have used or operated this robot frequently$_4$
1. Autonomous Car	0	1	2	3	4
2. Domestic/Home robot (e.g., Roomba)	0	1	2	3	4
3. Entertainment/toy robot (e.g., Aibo, Furby)	0	1	2	3	4
4. Manufacturing robot (e.g., robotic arm in factory)	0	1	2	3	4
5. Military Robot (e.g., search and rescue)	0	1	2	3	4
6. Personal Robot 2 (PR2)	0	1	2	3	4
7. Remote presence robot (e.g., Texai, Anybot)	0	1	2	3	4
8. Research robot (e.g., at university or company)	0	1	2	3	4
9. Robot lawn mower	0	1	2	3	4
10. Robot security guard	0	1	2	3	4
11. Space exploration robot (e.g., Mars Rover)	0	1	2	3	4
12. Surgical robot (e.g., da Vinci Surgical System)	0	1	2	3	4
13. Unmanned Aerial Vehicle (UAV)/Drone	0	1	2	3	4

Appendix N - Smarr (2014) Dissertation Study Version of *Robot Familiarity and Use Questionnaire*

ROBOT FAMILIARITY AND USE QUESTIONNAIRE

For the following robots, please indicate your familiarity in terms of hearing about them, using them, or operating them. Please circle only one option.

Robots	Not sure what this is	Never heard about, seen, or used this robot	Have only heard about or seen this robot	Have used or operated this robot only occasionally	Have used or operated this robot frequently
1. Autonomous Car	0	1	2	3	4
2. Deere Tango E5	0	1	2	3	4
3. Domestic/Home robot (e.g., Roomba)	0	1	2	3	4
4. Entertainment/toy robot (e.g., Aibo, Furby)	0	1	2	3	4
5. Manufacturing robot (e.g., robotic arm in factory)	0	1	2	3	4
6. Military Robot (e.g., search and rescue)	0	1	2	3	4
7. Personal Robot 2 (PR2)	0	1	2	3	4
8. Remote presence robot (e.g., Texai, Anybot)	0	1	2	3	4
9. Research robot (e.g., at university or company)	0	1	2	3	4
10. Robot lawn mower	0	1	2	3	4
11. Robot security guard	0	1	2	3	4
12. Space exploration robot (e.g., Mars Rover)	0	1	2	3	4
13. Surgical robot (e.g., da Vinci Surgical System)	0	1	2	3	4
14. Unmanned Aerial Vehicle (UAV)/Drone	0	1	2	3	4

Appendix O - McGlynn et al. (2014) Paro Study Version of *Robot Familiarity and Use Questionnaire*

ROBOT FAMILIARITY AND USE QUESTIONNAIRE

!!

For the following robots, please indicate your familiarity in terms of hearing about them, using them, or operating them **before today**. Please circle only one option.

Robots	Not sure what this is	Never heard about, seen, or used this robot	Have only heard about or seen this robot	Have used or operated this robot only occasionally	Have used or operated this robot frequently
Autonomous Car	1	2	3	4	5
Domestic/Home robot (e.g., Roomba)	1	2	3	4	5
Entertainment/ Toy Robot (AIBO, Furby)	1	2	3	4	5
Manufacturing robot (e.g., robotic arm in factory)	1	2	3	4	5
Military Robot (e.g., search and rescue)	1	2	3	4	5
Paro	1	2	3	4	5
Remote presence robot (e.g., Texai, Anybot)	1	2	3	4	5
Research robot (e.g., at university or company)	1	2	3	4	5
Robot lawn mower	1	2	3	4	5

Robot security guard	1	2	3	4	5
Space exploration robot (e.g., Mars Rover)	1	2	3	4	5
Surgical robot (e.g., da Vinci Surgical System)	1	2	3	4	5
Unmanned Aerial Vehicle (UAV)/Drone	1	2	3	4	5

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