

Design properties for Vignettes

Supplement 1a: Properties for the five levels of emotional sophistication in the vignettes for Experiment 1

Categories	1	2	3	4	5
Turing Test	Always fail	Takes a few minutes before failing	Takes a few hours before failing	Takes a few days before failing	Impossible to tell
Anthrop	Never	Occasionally	Semi regularly	Often	People treat it like a real person, even when told it is an AI
NLP	Recognises only words	Recognises hundreds of sentences accurately	Recognises thousands of sentences and colloquial phrases accurately	Completely understands any language except struggles with poor phrasing.	Excellent. Seldom misunderstands even the most unusual sentence.
NLG	Has around 20 responses only	Has hundreds of sentences, somewhat flexible	Thousands of responses, very flexible	Tailored response for the user yet can sound a bit rigid	Generates fluid and sensible responses. Initiates contextually-relevant conversation.
Scope of Interaction	Can do nothing but primary purpose	Has 5 activities it can play/do with you	Has 25 activities it can play/do with you	Has 25 activities it can play/do with you but can learn up to 100	Can learn as many games or become apart of what ever activities the user likes to do.
ML	None	Very simple, remembering frequent requests	Average, remembering frequent likes and things user dislikes and can suggest good things.	Learns a user's likes and dislikes, can recognize third parties in conversation and learn about them also.	Learns a user's likes, dislikes, conversational comfort zones, pet names. Can learn and converse about 3rd parties via items disclosed in conversation.
Building Intimacy	No	Can aid user in simple ways. Feels like a computer.	Can conduct 'small talk' with the user but cannot process deeper emotional conversation. Feels like talking to a stranger.	Can converse about deep and emotional topics that are on the yours mind and attempt to give advice, however can not give any of its own opinions.	Discloses own 'thoughts', 'ideas', 'fears', limitations. Takes apparent interest in the answers when user discloses deeply personal information. Feels like a good, caring friend.
Falling in Love	No	40% of people could imagine falling in love with their virtual assistant	5% of people do gain romantic feelings for these robots at some point within owning them	90% of users gain strong attachments to their AI companion and 30% of people would describe their feelings as love	95% of users profess feelings of love within 1 week

Supplement 1b: Properties for the four levels of emotional sophistication x three types of technology (sex robot, sex toy, virtual reality) in the vignettes for Experiment 2

Sex Robot Scale

Categories	1	2	3	4
Life-like appearance	Not life-like at all	Looks vaguely human tricking people at a distance	Looks human up close but after a few minutes people can tell it's not	Can never be told apart from a person just by sight
Life-like sensation	Not life-like at all	Feels slightly like human flesh but the texture seems poorly made	Feels a lot like a person but the skin does feel artificial to touch	Feels exactly like a persons skin
Robotics	Immobile	Poor mobility	Decent mobility	Human like mobility
AI	No ability to learn	Slight learning ability	Decent learning ability	Human-like learning ability
Range of intimate acts	Cannot act in a way that intentionally arouses the user	Can act to arouse a user but is very limited in what it can do and is usually unsuccessful	Can arouse user more often then not, knowing multiple ways to build sexual intimacy	Always able to arouse the user
Pleasurable Sensation	Underwhelming	Satisfactory	Enjoyable	Exhilarating

Sex Toy Scale

Categories	1	2	3	4
Aesthetically Pleasing	Ugly	Ok	Nice	Arousing
Life-like Sensation	Not life-like at all	Feels slightly like human flesh but the texture seems poorly made	Feels a lot like a person but the skin does feel artificial to touch	Feels exactly like a person's skin
Robotics and Motor skills	Immobile	Poor mobility	Decent mobility	Human-like mobility
AI	No ability to learn	Slight learning ability	Decent learning ability	Human-like learning ability
Biometric scanning ability	Can't read the user	Can read users heartrate	Can read users heartrate, temperature and breath	Knows exactly what the users body is doing
Pleasurable Sensation	Underwhelming	Satisfactory	Enjoyable	Exhilarating

Appendix 4

Virtual Reality Sex Game Scale

Categories	1	2	3	4
VR Interaction	The user has no interaction with the game	The user can interact with 100 things in the game	The user can interact with 1000 things in the game	The user can interact with 10,000 things in the game
Visual Appeal	The game looks clunky and the graphics are terrible	The game looks ok but out dated and not polished	The game looks decently polished with good graphics	The game looks incredible with amazing graphics
Range of Intimate Acts	Cannot act in a way that intentionally arouses the user	Can act to arouse a user but is very limited in what it can do and is usually unsuccessful	Can arouse user more often then not, knowing multiple ways to build sexual intimacy	Always able to arouse the user
AI	No ability to learn	Slight learning ability	Decent learning ability	Human-like learning ability
Pleasurable Sensation	Underwhelming	Satisfactory	Enjoyable	Exhilarating

Appendix 5

SRMV Alpha Analysis

Some items (Participants) were negatively correlated with the total scale and probably should be reversed.

To do this, run the function again with the 'check.keys=TRUE' option

Reliability analysis

Call: alpha(x = PSW)

raw_alpha	std.alpha	G6(smc)	average_r	S/N	ase	mean	sd	median_r
-0.014	0.56	0.59	0.2	1.3	0.0066	38	20	0.31

lower alpha upper 95% confidence boundaries
-0.03 -0.01 0

Reliability if an item is dropped:

	raw_alpha	std.alpha	G6(smc)	average_r	S/N	alpha	se	var.r	med.r
Participants	0.7154	0.72	0.67	0.39	2.57	0.0250	0.0071	0.38	
Q1	-0.0107	0.41	0.45	0.15	0.69	0.0054	0.0730	0.18	
Q2	-0.0043	0.48	0.50	0.19	0.93	0.0053	0.0673	0.23	
Q3	-0.0190	0.38	0.43	0.13	0.62	0.0057	0.0942	0.13	
Q4	-0.0120	0.41	0.45	0.15	0.69	0.0056	0.0776	0.18	

Item statistics

	n	raw.r	std.r	r.cor	r.drop	mean	sd
Participants	344	0.999	0.22	-0.11	-0.126	172.5	99.4
Q1	344	-0.072	0.71	0.63	-0.090	3.4	1.7
Q2	343	-0.187	0.63	0.51	-0.205	3.2	1.9
Q3	344	0.120	0.74	0.65	0.106	4.1	1.5
Q4	344	-0.053	0.71	0.62	-0.068	4.6	1.5

Non missing response frequency for each item

	1	2	3	4	5	6	7	miss
Q1	0.14	0.24	0.15	0.18	0.18	0.10	0.02	0
Q2	0.24	0.24	0.08	0.14	0.14	0.11	0.04	0
Q3	0.05	0.14	0.11	0.26	0.26	0.16	0.02	0
Q4	0.05	0.08	0.08	0.18	0.29	0.25	0.06	0

Appendix 6

RSOI Alpha Analysis

Reliability analysis

Call: alpha(x = PRSOI)

raw_alpha	std.alpha	G6(smc)	average_r	S/N	ase	mean	sd	median_r
0.061	0.83	0.88	0.33	5	0.016	21	10	0.31

lower alpha upper 95% confidence boundaries
0.03 0.06 0.09

Reliability if an item is dropped:

	raw_alpha	std.alpha	G6(smc)	average_r	S/N	alpha	se	var.r	med.r
X	0.851	0.85	0.89	0.39	5.7	0.012	0.026	0.35	
Q1	0.058	0.82	0.87	0.34	4.5	0.015	0.041	0.31	
Q2	0.054	0.81	0.85	0.33	4.4	0.015	0.034	0.31	
Q3	0.055	0.81	0.84	0.32	4.2	0.014	0.033	0.31	
Q4	0.060	0.82	0.87	0.34	4.6	0.015	0.037	0.32	
Q5	0.055	0.80	0.85	0.31	4.1	0.014	0.036	0.29	
Q6	0.051	0.81	0.86	0.32	4.2	0.015	0.039	0.31	
Q7	0.047	0.82	0.86	0.33	4.4	0.015	0.038	0.33	
Q8	0.051	0.81	0.85	0.33	4.4	0.015	0.036	0.32	
Q9	0.050	0.81	0.86	0.32	4.3	0.015	0.039	0.31	

Item statistics

	n	raw.r	std.r	r.cor	r.drop	mean	sd
X	344	0.973	0.30	0.17	0.140	172.5	99.4
Q1	342	0.123	0.61	0.54	0.107	2.5	1.8
Q2	342	0.177	0.66	0.65	0.154	3.1	2.5
Q3	343	0.150	0.72	0.73	0.124	3.6	2.8
Q4	344	0.036	0.58	0.52	0.037	6.8	2.5
Q5	344	0.118	0.74	0.72	0.106	5.2	2.9
Q6	342	0.219	0.70	0.66	0.194	6.2	2.7
Q7	343	0.315	0.65	0.61	0.296	4.6	2.4
Q8	343	0.260	0.66	0.64	0.242	3.5	2.1
Q9	343	0.306	0.69	0.66	0.290	3.1	2.0

Non missing response frequency for each item

	1	2	3	4	5	6	7	8	9	miss
Q1	0.24	0.51	0.09	0.03	0.03	0.04	0.03	0.02	0.01	0.01
Q2	0.36	0.25	0.07	0.08	0.03	0.08	0.04	0.05	0.04	0.01
Q3	0.39	0.12	0.07	0.07	0.06	0.08	0.06	0.08	0.06	0.00
Q4	0.07	0.04	0.03	0.03	0.10	0.09	0.13	0.08	0.43	0.00
Q5	0.18	0.08	0.08	0.06	0.08	0.10	0.14	0.07	0.20	0.00
Q6	0.09	0.06	0.06	0.05	0.08	0.09	0.15	0.16	0.27	0.01
Q7	0.06	0.24	0.10	0.12	0.07	0.13	0.16	0.07	0.05	0.00
Q8	0.13	0.34	0.09	0.13	0.10	0.09	0.07	0.03	0.02	0.00
Q9	0.23	0.31	0.12	0.09	0.09	0.08	0.05	0.02	0.01	0.00

Appendix 7

Revised Sociosexual Orientation Inventory (RSOI)

Please respond honestly to the following questions:

1. With how many different partners have you had sex within the past 12 months?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>							
0	1	2	3	4	5–6	7–9	10–19
20 or more							

2. With how many different partners have you had sexual intercourse on one and only one occasion?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>							
0	1	2	3	4	5–6	7–9	10–19
20 or more							

3. With how many different partners have you had sexual intercourse without having an interest in a long-term committed relationship with this person?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>							
0	1	2	3	4	5–6	7–9	10–19
20 or more							

4. Sex without love is OK.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>							
1	2	3	4	5	6	7	8
9							

Strongly
Strongly

disagree
agree

5. I can imagine myself being comfortable and enjoying “casual” sex with different partners.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7	8
9							

Strongly
Strongly
disagree
agree

6. I do not want to have sex with a person until I am sure that we will have a long-term, serious relationship.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7	8
9							

Strongly
Strongly
disagree
agree

7. How often do you have fantasies about having sex with someone with whom you do not have a committed romantic relationship?

- 1 – never
- 2 – very seldom
- 3 – about once every two or three months
- 4 – about once a month
- 5 – about once every two weeks
- 6 – about once a week
- 7 – several times per week
- 8 – nearly every day
- 9 – at least once a day

8. How often do you experience sexual arousal when you are in contact with someone with whom you do not have a committed romantic

relationship?

- 1 – never
- 2 – very seldom
- 3 – about once every two or three months
- 4 – about once a month
- 5 – about once every two weeks
- 6 – about once a week
- 7 – several times per week
- 8 – nearly every day
- 9 – at least once a day

9. In everyday life, how often do you have spontaneous fantasies about having sex with someone you have just met?

- 1 – never
- 2 – very seldom
- 3 – about once every two or three months
- 4 – about once a month
- 5 – about once every two weeks
- 6 – about once a week
- 7 – several times per week
- 8 – nearly every day
- 9 – at least once a day

Appendix 8

The Kinsey Scale

This scale is purely a method of self-evaluation based on your individual experience, and the rating you choose may change over time.

The scale ranges from 0, for those who would identify themselves as exclusively heterosexual with no experience with or desire for sexual activity with their same sex, to 6, for those who would identify themselves as exclusively homosexual with no experience with or desire for sexual activity with those of the opposite sex, and 1-5 for those who would identify themselves with varying levels of desire or sexual activity with either sex.

0. – Exclusively heterosexual with no homosexual
1. – Predominantly heterosexual, only incidentally homosexual
2. – Predominantly heterosexual, but more than incidentally homosexual
3. – Equally heterosexual and homosexual
4. – Predominantly homosexual, but more than incidentally heterosexual
5. – Predominantly homosexual, only incidentally heterosexual
6. – Exclusively homosexual
7. – Asexual