



Lyra Simulating Believable Opinionated Virtual Characters

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P O E M

Machine Enculturation and Opinions

-(region) "the Scottish voted to overwhelmingly remain in the referendum."

Interactions that go against group values are unfavourable. NPCs must adhere to recognisable social practices and enculturated responses.

System Goals

- Knowledge model for motivated reasoning
- Accounting for bias in information and sources
- Discussion model allows views to be influenced

G2: Human Subject Study

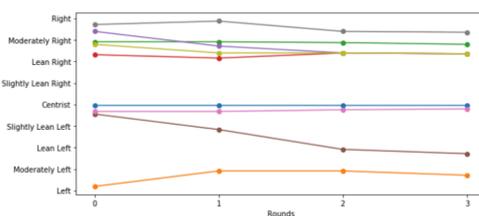
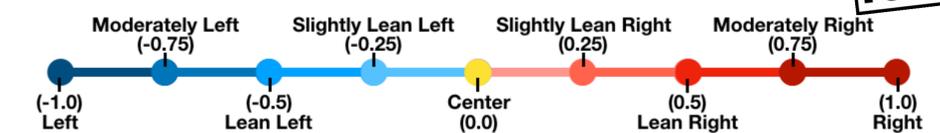
- Discussion parameters: group size, conversation duration
- Believability Rating
- Most Believable
- Least Believable
- Reasoning Queries
- Clustering Analysis

Directed
Content
Analysis

Open/
Thematic
Coding

Measure	Agreement
Fleiss κ	0.9099
Cohen κ	0.9121
alpha	0.9012

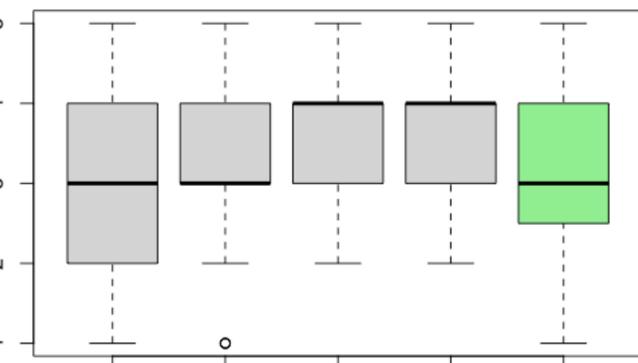
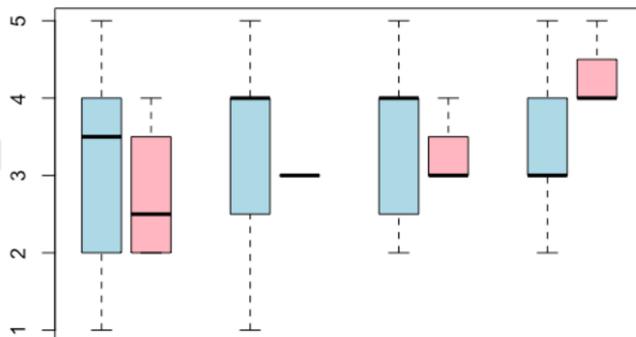
G1: Legible Simulation Output



Kevin Quinto-Carrillo, Patrice Minnerly, and Karen Harrell decided their respective group's views were insufficient to change their opinions. **Juan Vicic** was swayed by **Patrice Minnerly's** argument and decided to change their rating to indicate the same. **Kathleen Lawson** was swayed by **Kevin Quinto-Carrillo** and the Article.

G3: Evaluation of generated conversations

- Believability: 3.3/5 (Moderately believable)
- **RQ1:** Does the measure of believability depend on the political biases of the respondents?



- **RQ2:** Does the measure of believability vary across discussion parameters?

- **RQ3:** How similar is Lyra's clustering to how humans define and group like-minded virtual characters?

	Model	Survey
D1	0.1428	0.666
D2	0.5714	0.5714
D3	0	0.238
D4	0	0.333

G3: Evaluation (cont)

- **RQ4:** Does using Lyra impact the believability of the virtual characters?

Frequent Most Believable

Theme	#
NPC mentioned	23
Standing Ground	18
Similar views converging	12
Influence from groups	10
Used political stereotype	9
Individual influence	8
Polarization	8

Frequent Least Believable

Theme	#
NPC mentioned	44
Changed Opinion	19
Decreasing Certainty	11
Standing Ground	10
Believable	6
Influenced by Article	6

Believability Measures

- Emotional responses
- Attributed emotions, social intelligence, human-likeness and intentions to NPCs
- Cognitive & behavioural processes incited

Frequent Reasoning Queries

Theme	#
Individual Influence	19
NPC mentioned	15
Opinion attitude diff.	12
Infer facts	11
Group Influence	10
Certainty Convinces	10
Lacking Support	8
Emotions attributed	7



See our respondent quotes
and discovered
believability measures!