

## Hello.



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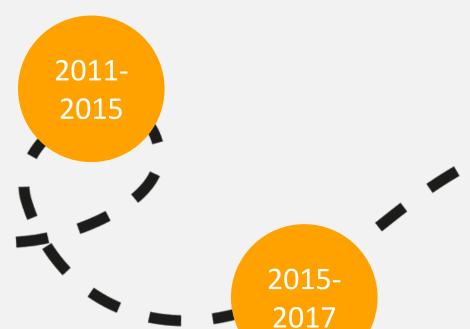
#### Anna Henschel

Institute of Neuroscience & Psychology University of Glasgow Social Brain in Action Lab



#### BSc Psychology

- Konstanz University, Germany
- Internship @ UCI, California



#### MSc Cognitive Neuropsychology

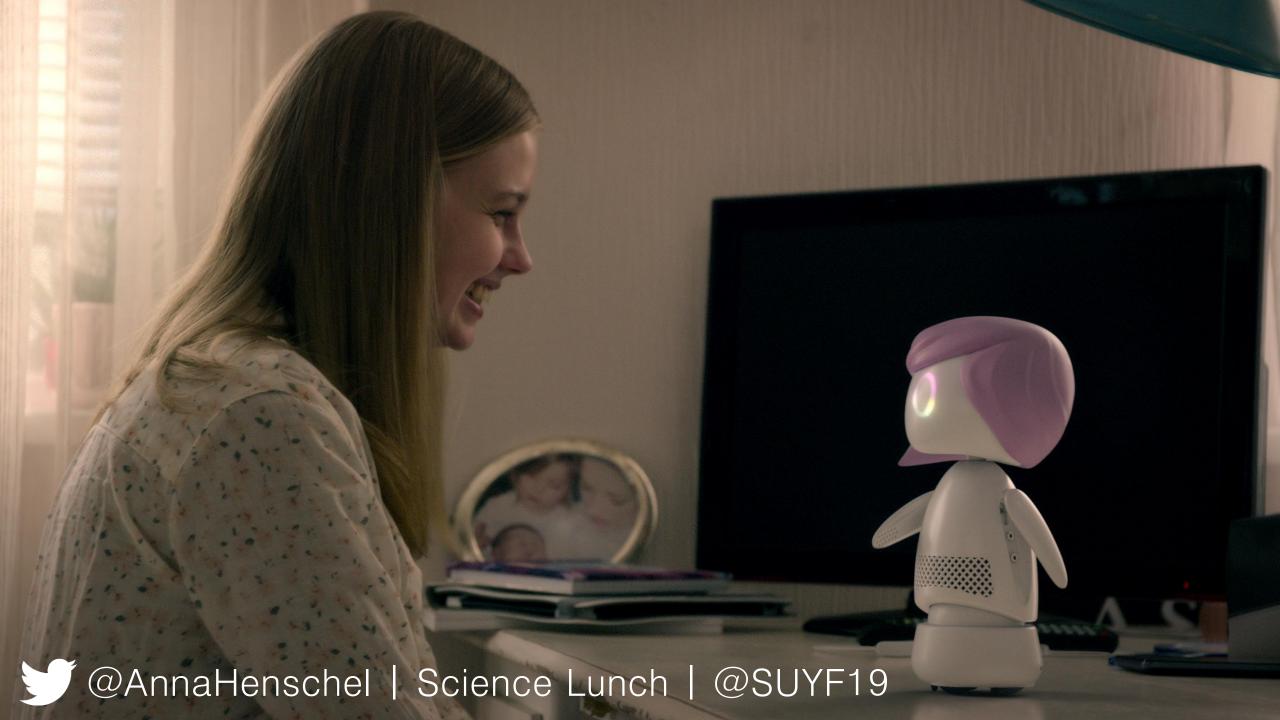
- VU Amsterdam, Netherlands
- Internship @ Social Brain Lab



- University of Glasgow
- Research Fellow MARCS Institute Sydney



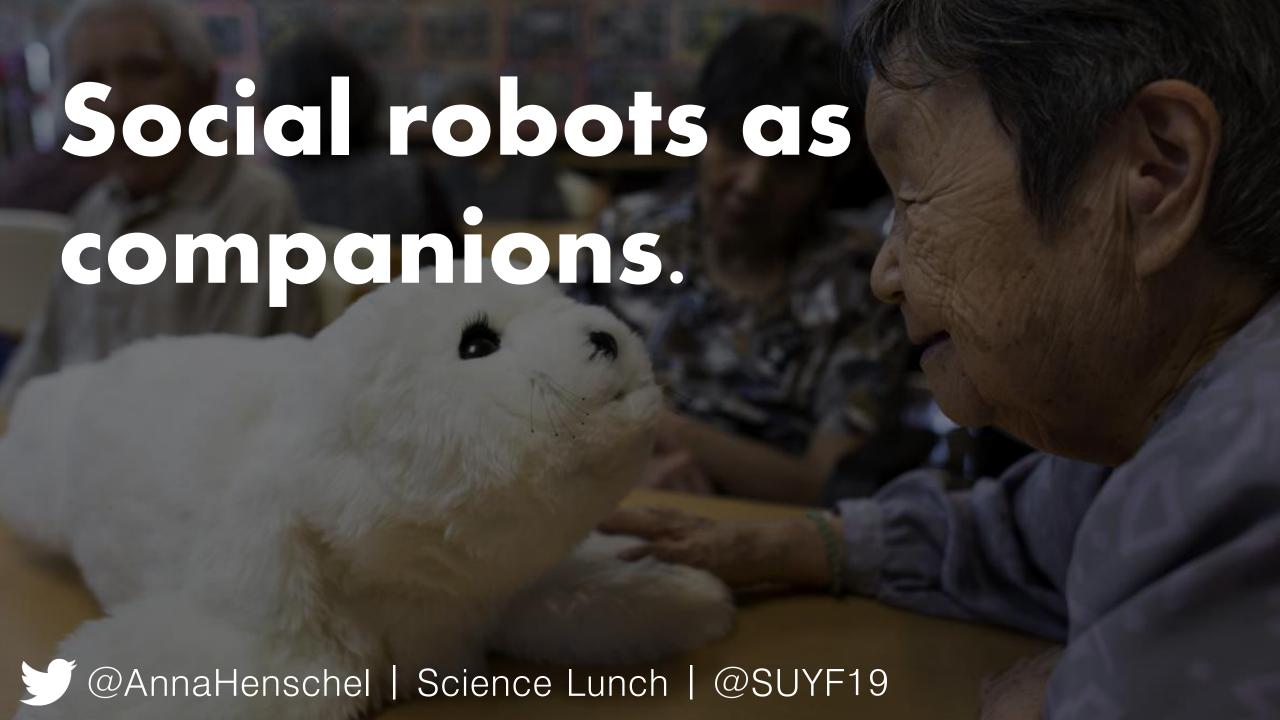




### Social Robots =

- Emotions
- Communication
- Relationships
- Gestures & facial expressions
- "Social competency"





#### Social robots as potential companions



Social interactions are hard.

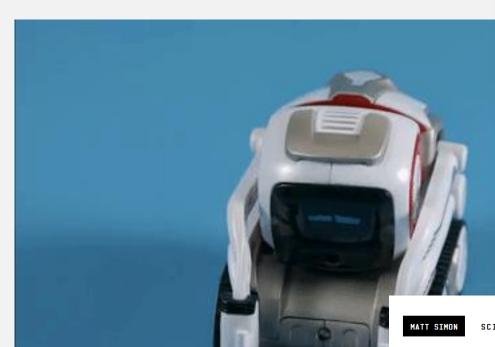
#### Social robots as potential companions



Social interactions are hard.



#### **Social Robots**



#### Anki, Jibo, and Kuri: What We Can Learn from Social Robots That Didn't Make It

It's been a tough few years for social home robots: Where do we go from here?

By Guy Hoffman

T SIMON SCIENCE 04.29.2019 08:23

#### R.I.P., Anki: Yet Another Home Robotics Company Powers Down

A third major home robotics outfit shuts down in a year. Why is it so hard to build a companion droid that everyone wants?



## Are we in the middle of a Social Robotics Winter?

Henschel\*, Hortensius\*, & Cross, Trends in Neurosciences, 2020

## We argue ...

• Discrepancy between expectations and robot abilities

Henschel\*, Hortensius\*, & Cross, Trends in Neurosciences, 2020

## We argue ...

- Discrepancy between expectations and robot abilities
- Studying social cognition will help us make better robots

## We argue ...

- Discrepancy between expectations and robot abilities
- Studying social cognition will help us make better robots
- And will advance our understanding of the human brain

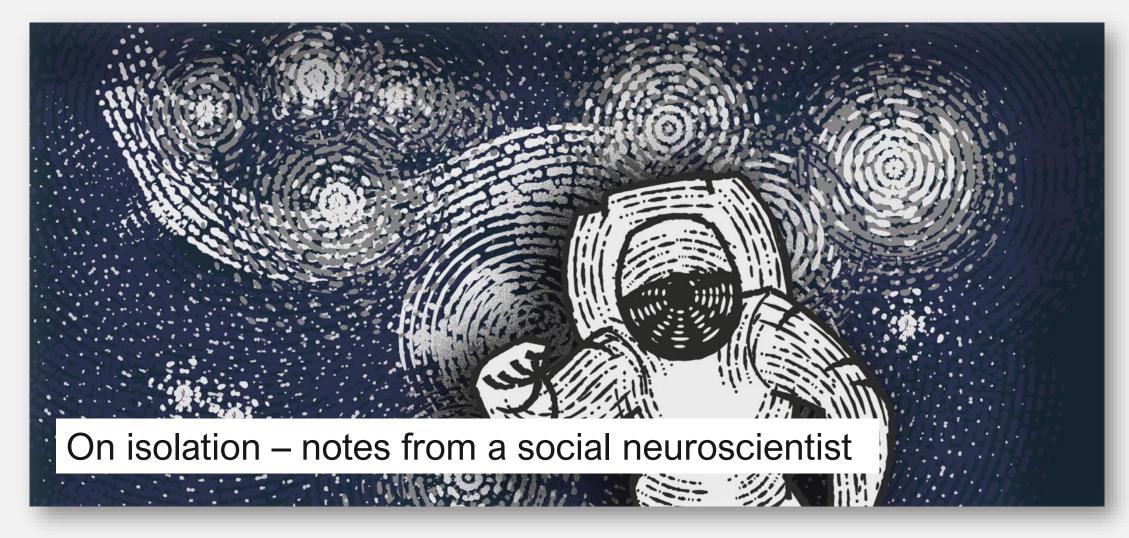
#### Before I start...



#### Before I start...



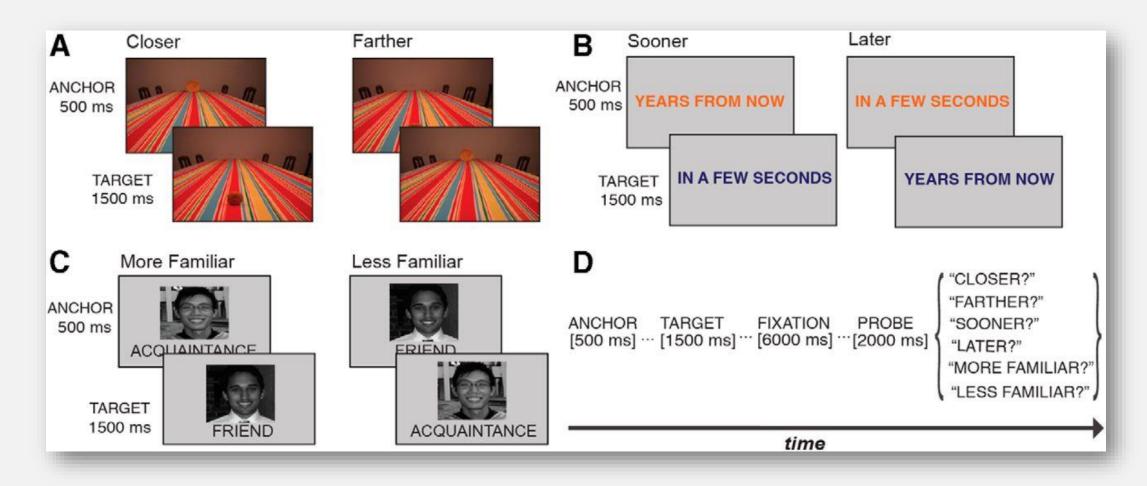




https://the-gist.org/2020/04/on-isolation-notes-from-a-social-neuroscientist/

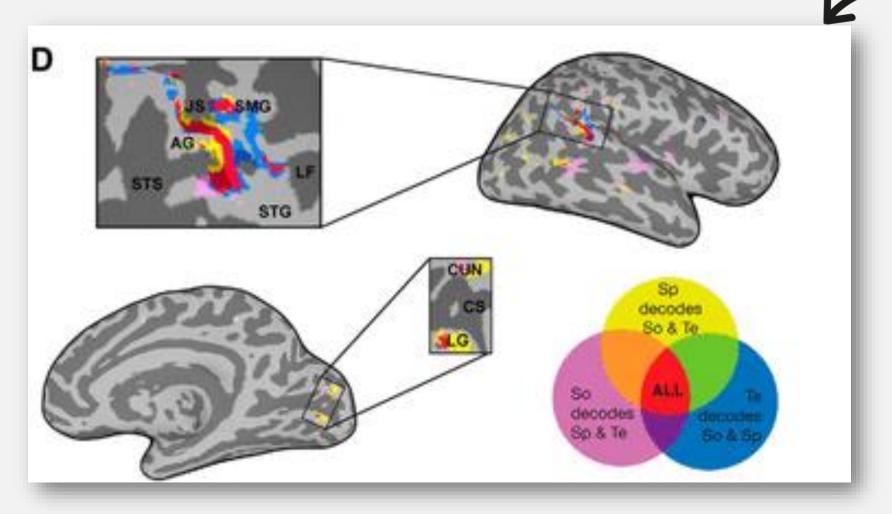
#### Why is social distancing so hard?

Parkinson, C., Liu, S., & Wheatley, T. (2014).



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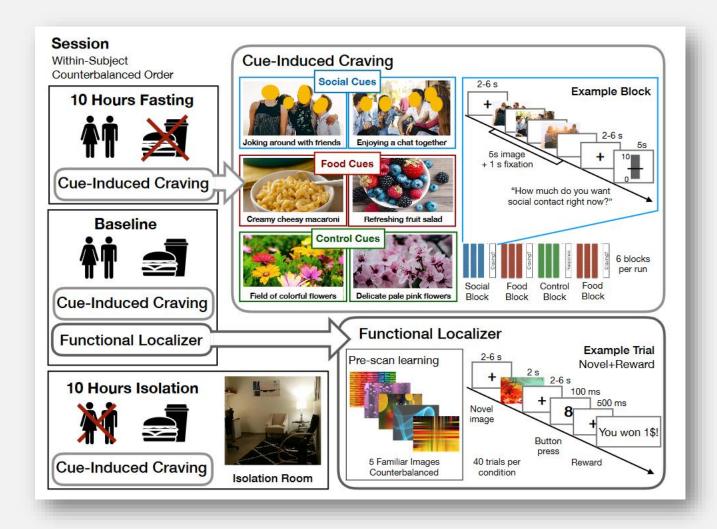


A network of brain structures that encodes spatial, temporal and social distance



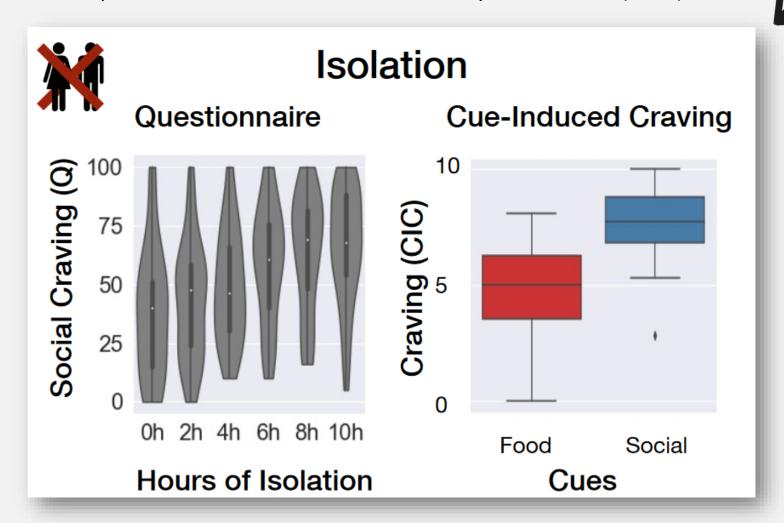
#### We "crave" social interaction

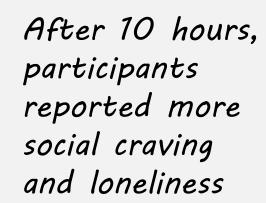
Tomova, L., Wang, K., Thompson, T., Matthews, G., Takahashi, A., Tye, K., Saxe, R. (2020).



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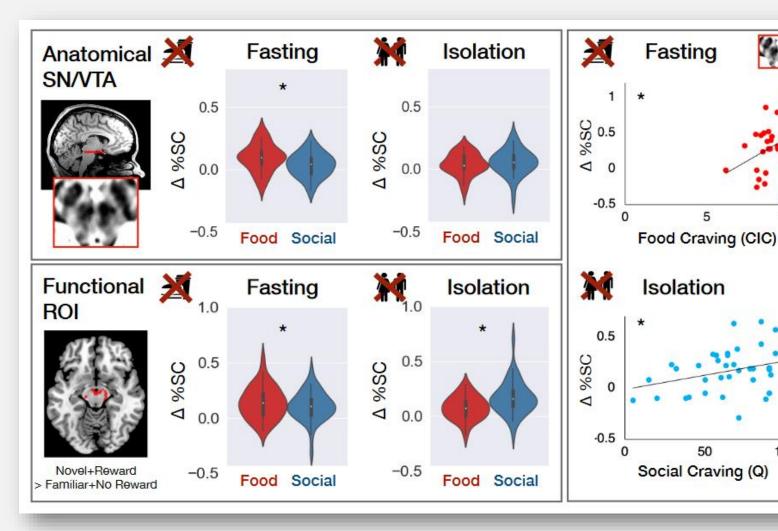
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#### We "crave" social interaction

Tomova, L., Wang, K., Thompson, T., Matthews, G., Takahashi, A., Tye, K., Saxe, R. (2020).



A
structure
in the
midbrain
selectively
responded
to food
and social
craving

Spin

100



#### Acta Astronautica

journal homepage: www.elsevier.com/locate/actaastro



Life on mars from a Self-Determination Theory perspective: How astronauts' needs for autonomy, competence and relatedness go hand in hand with crew health and mission success - Results from HI-SEAS IV



Sophie Goemaere<sup>a,\*</sup>, Thomas Van Caelenberg<sup>a</sup>, Wim Beyers<sup>a</sup>, Kim Binsted<sup>b</sup>, Maarten Vansteenkiste<sup>a</sup>



# Success of life on pretend Mars was predicted by feeling close to other crew members and family at home.

Goemaere, S., Van Caelenberg, T., Beyers, W., Binsted, K., & Vansteenkiste, M. (2019).



## The neuroscience of loneliness – and how technology is helping us

WORLD ECONOMIC FORUM

April 17, 2020 4.45pm BS

Some insights on how to cope with home office



#### How tech can help:



**Eric Vanman** @socialneuro

Today I would like to stop looking at my computer screen—at least for a few days— but EVERYTHING I do, both for work and socially, depends on it.

3:55 AM · Apr 29, 2020 from Brisbane, Queensland · Twitter for iPhone

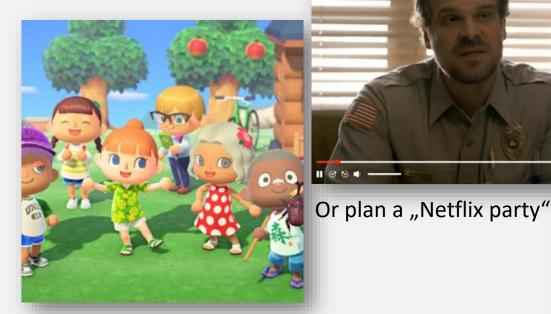
#### How tech can help:

We all suffer from "Zoom" fatigue, but social interactions (quantity & quality) are important for our wellbeing.

Sun, J., Harris, K., & Vazire, S. (2019)

#### Shared activities are crucial

Mesch, G., & Talmud, I. (2006)



Meet in virtual spaces



#### Discuss a paper together

👩 Olivia Guest is on the job market! | Ολίβια Γκεστ @o\_guest · Apr 21

So happy this worked out & we [@andrea e martin & I] could answer some questions on our preprint [doi.org/10.31234/osf.i...] for #ReproducibiliTeaGlasgow reading group [@AnnaHenschel, @eolasinntinn].

? Questions: docs.google.com/document/d/123...

■ Video: youtu.be/\_WV7EFvFAB8 twitter.com/AnnaHenschel/s...



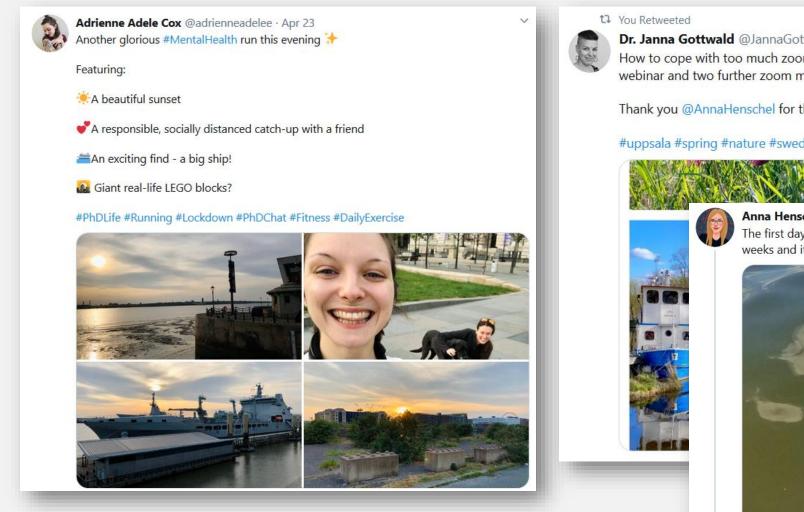


#### Reframe negative thoughts

Masi, C., Chen, H.Y., Hawkley, L., Cacioppo, J. (2011)

"If you are feeling **lonely**, try identifying automatic negative thoughts — such as assuming people don't want to hear from you — and reframing them **as hypotheses** rather than facts."

#### Go outside (if you can)!

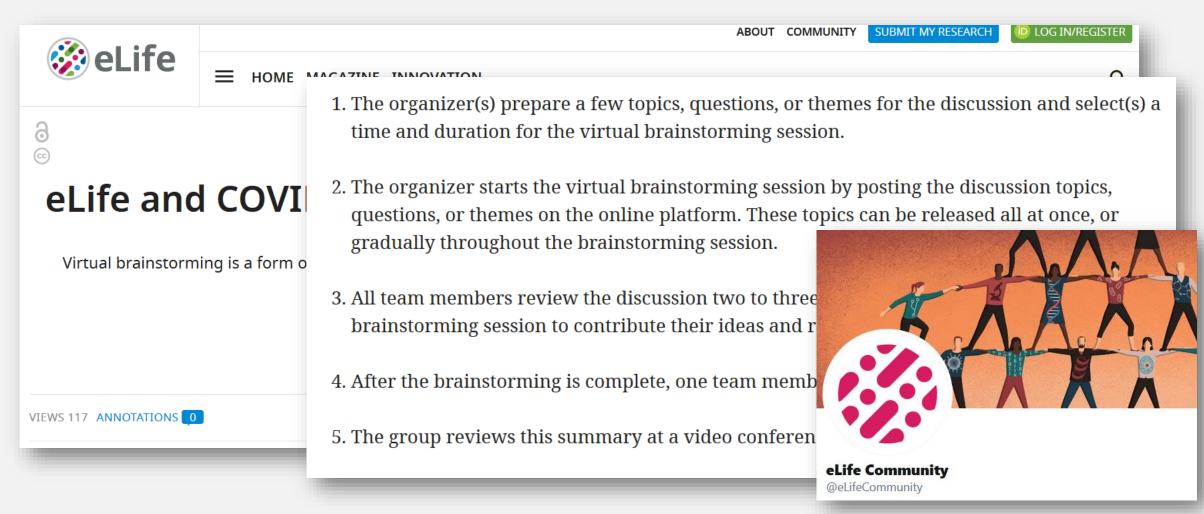






#### Try out virtual brainstorming:

Julia L. Riley, Charlotte M. de Winde, and Tracey Weissgerber (2020).





#### Links



On Isolation – Notes from a social neuroscientist, <a href="https://the-gist.org/2020/04/on-isolation-notes-from-a-social-neuroscientist/">https://the-gist.org/2020/04/on-isolation-notes-from-a-social-neuroscientist/</a>



Here's the neuroscience of loneliness, and why technology can help,

https://www.weforum.org/agenda/2020/04/neuroscie nce-loneliness-technology-lockdown-coronaviruscovid-quarantine/

#### **Articles I mentioned:**

- Social Cognition in the Age of Human–Robot Interaction, <a href="https://www.sciencedirect.com/science/article/pii/S0166223620300734">https://www.sciencedirect.com/science/article/pii/S0166223620300734</a>
- A Common Cortical Metric for Spatial, Temporal, and Social Distance, <a href="https://www.jneurosci.org/content/34/5/1979.full">https://www.jneurosci.org/content/34/5/1979.full</a>
- The need to connect: Acute social isolation causes neural craving responses similar to hunger, <a href="https://www.biorxiv.org/content/10.1101/2020.03.25.006643v2.full.pdf">https://www.biorxiv.org/content/10.1101/2020.03.25.006643v2.full.pdf</a>
- Life on mars from a Self-Determination Theory perspective: How astronauts' needs for autonomy, competence
  and relatedness go hand in hand with crew health and mission success Results from HI-SEAS IV,
  <a href="https://www.sciencedirect.com/science/article/pii/S0094576518309871?casa\_token=zjriAyuqojYAAAAA:AZ9hVydHByn8WQjq9bJ0pQPy1glK1mWqHs9wwGLgH4oZs4OlDJDw7MNqYmNi2FmqfSXMpvvXTA">https://www.sciencedirect.com/science/article/pii/S0094576518309871?casa\_token=zjriAyuqojYAAAAA:AZ9hVydHByn8WQjq9bJ0pQPy1glK1mWqHs9wwGLgH4oZs4OlDJDw7MNqYmNi2FmqfSXMpvvXTA</a>
- Is well-being associated with the quantity and quality of social interactions?, <a href="https://psycnet.apa.org/record/2019-62902-001">https://psycnet.apa.org/record/2019-62902-001</a>

#### **Articles I mentioned:**

- The Quality of Online and Offline Relationships: The Role of Multiplexity and Duration of Social Relationships, <a href="https://www.tandfonline.com/doi/abs/10.1080/01972240600677805?casa\_token=vky5BbCDIloAAAAA%3Aqk\_yi6T9PZg6h4lSgHdHiMvL4IIR79xd3rmq5zQtRjpmyLqm46aYOLpZuIIBGHPdiWRiA8uurxNS0&journalCode=utis2\_0</a>
- A Meta-Analysis of Interventions to Reduce Loneliness, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3865701/
- eLife and COVID-19: Getting more out of the online workplace, <a href="https://elifesciences.org/inside-elife/89e59b16/elife-and-covid-19-getting-more-out-of-the-online-workplace">https://elifesciences.org/inside-elife/89e59b16/elife-and-covid-19-getting-more-out-of-the-online-workplace</a>