

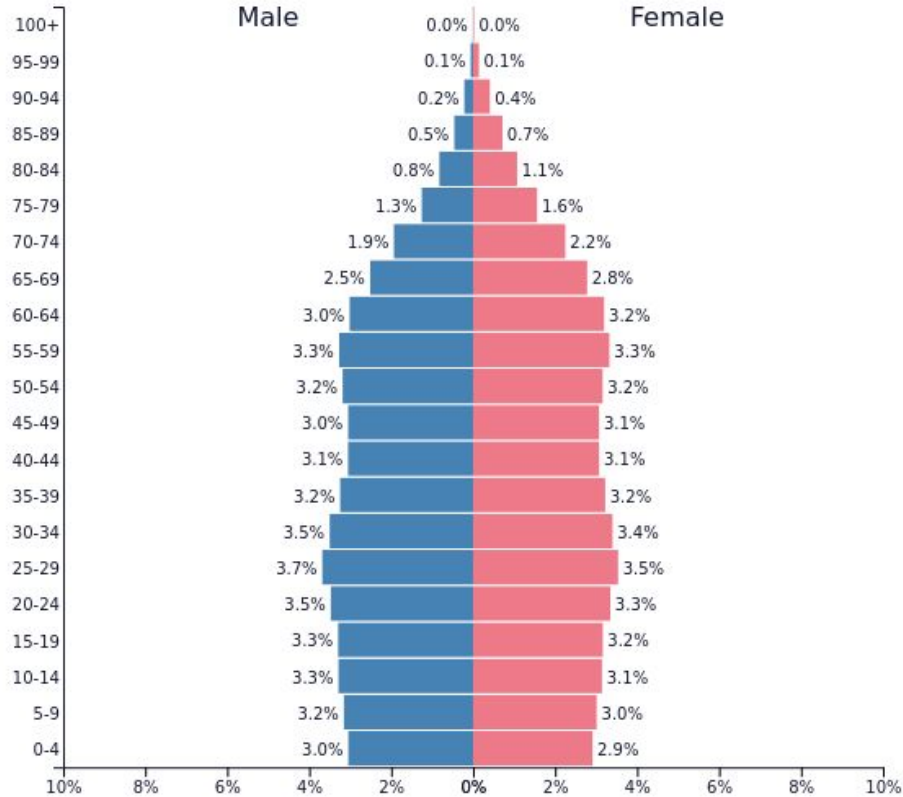
# Pixel Affection: Tech-Mediated Touch, Conversation, and Companionship

Sabrina Reguyal  
INTERFACE, Mar 28 2021

# Loneliness

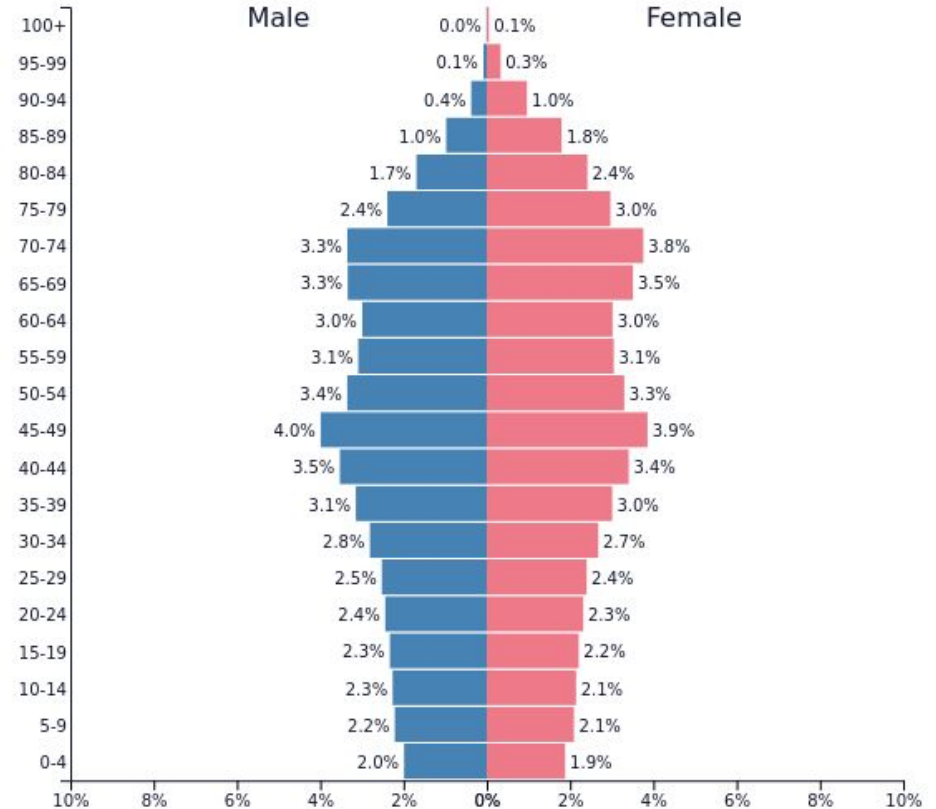
Why?

# Population Pyramids -- Visualizing Generation Balance and Gender Ratio



**United States of America - 2019**  
Population: **329,064,916**

PopulationPyramid.net



**Japan - 2019**  
Population: **126,860,299**

PopulationPyramid.net

# Japan going through it

hikikomori -- acute social withdrawal

'A protruding nail will be hammered down'



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The room of Shoku Uibori, 43, who has been a hikikomori for seven years. "He was a businessman and had his own company but then went bankrupt. He locks himself in the room all day to read and sometimes goes out at night to buy food and other necessities at convenience stores," writes Elan.

PHOTOGRAPH BY MAIKA ELAN

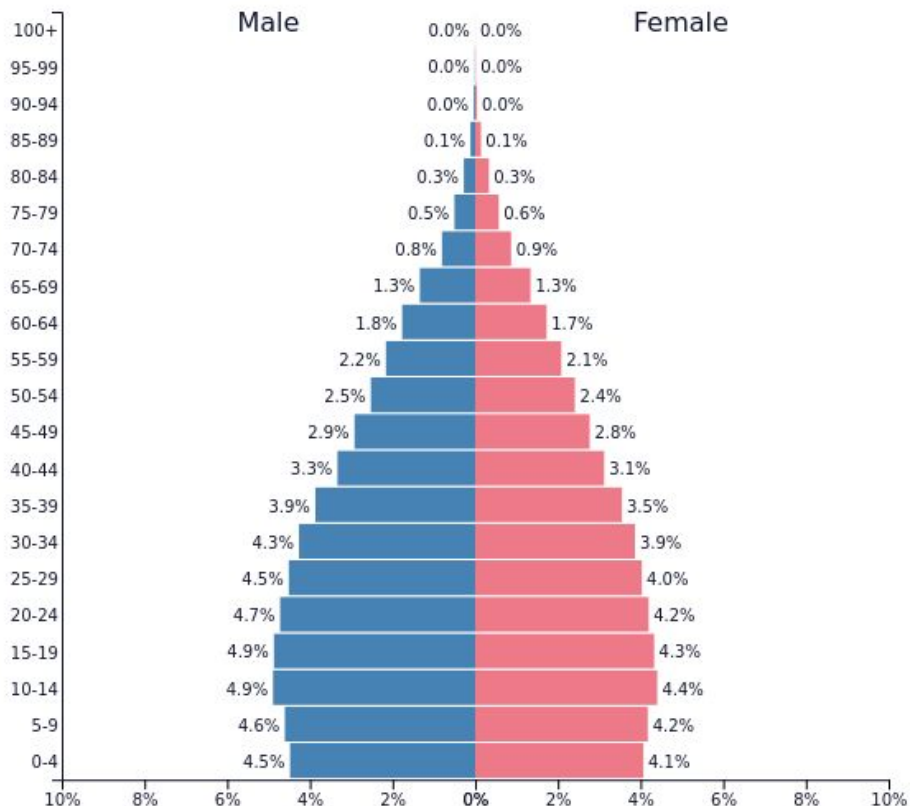


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'Rental sister' Oguri Ayako writes to Kobayashi Haruto, 40, who has been in his room for 10 years. This is Ayako's third visit to his house. Since he refuses to talk, she writes letters and leaves them in front of his room.

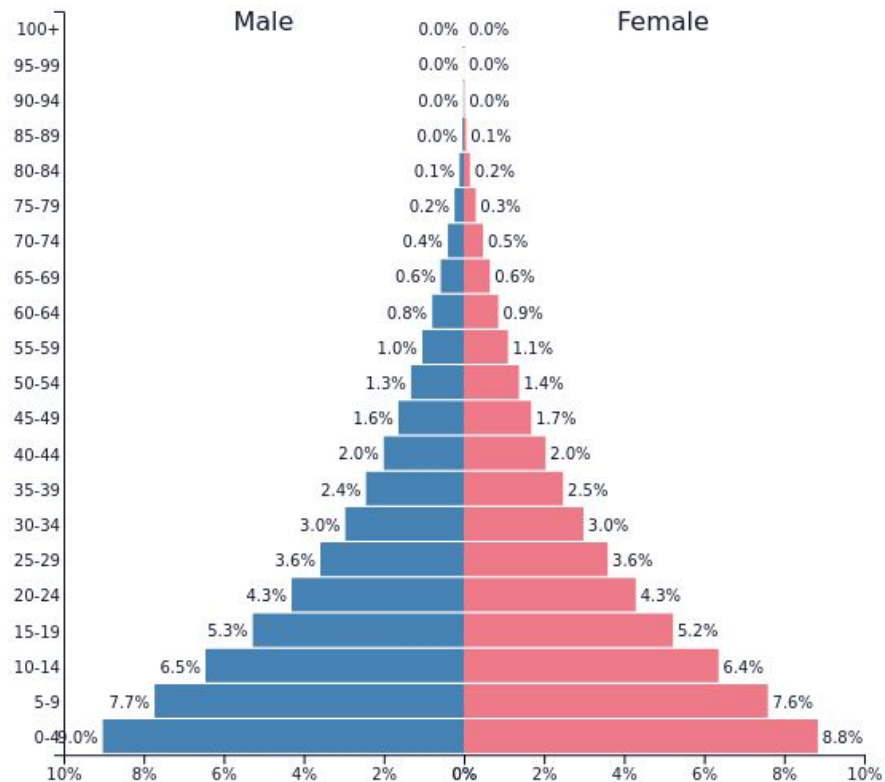
PHOTOGRAPH BY MAIKA ELAN

# Yay children



PopulationPyramid.net

India - 2019  
Population: 1,366,417,755

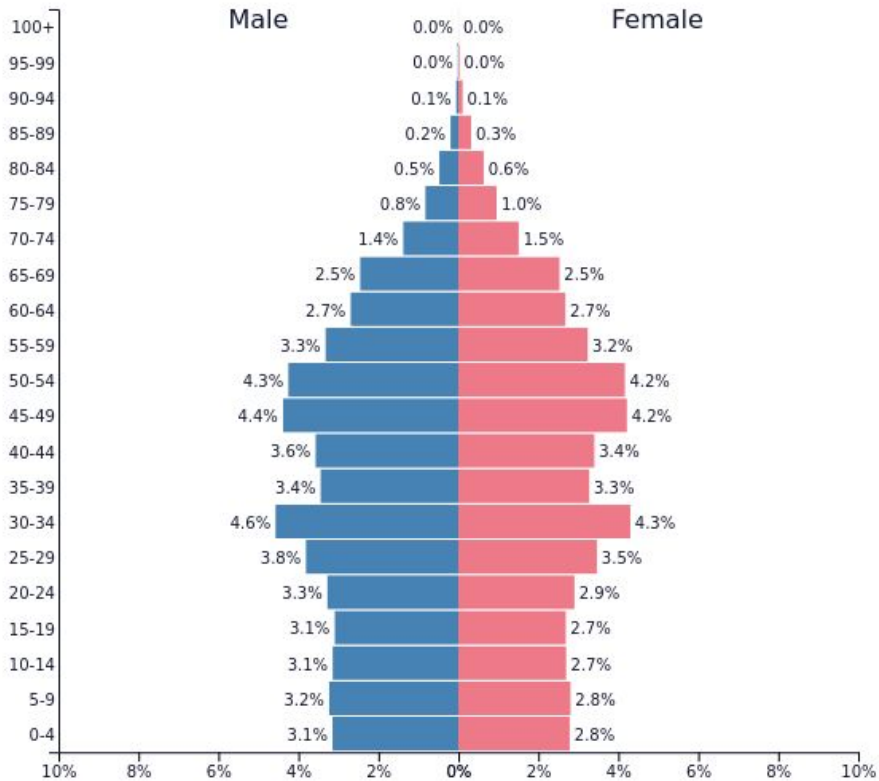


PopulationPyramid.net

Democratic Republic of the Congo - 2019  
Population: 86,790,568

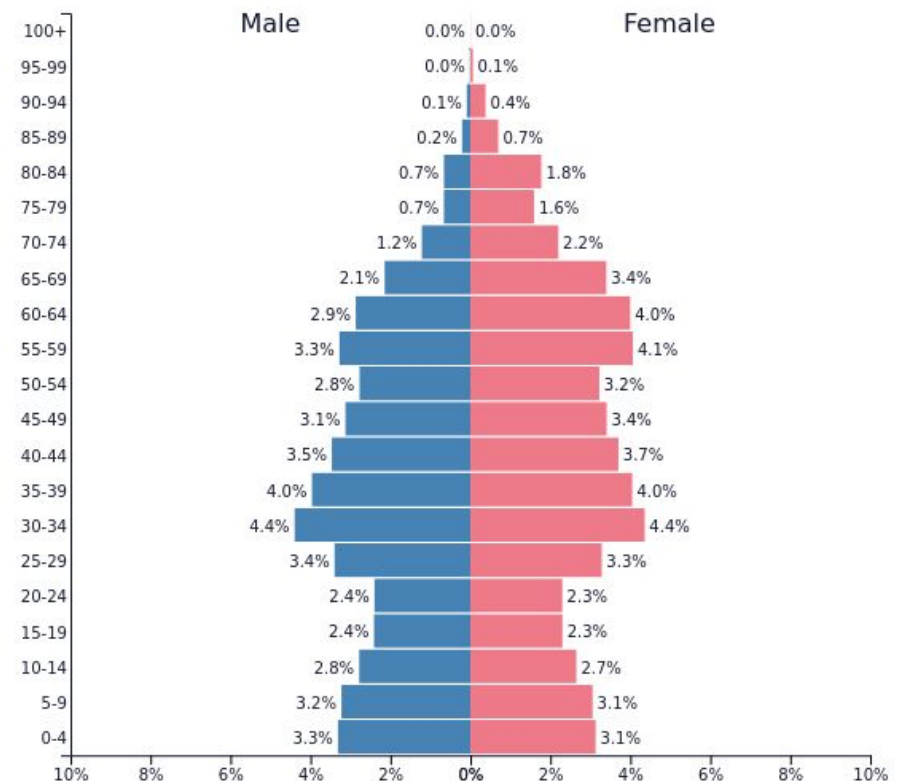
# Boys go to Jupiter to get more stupider...

(girls go to college to get more knowledge)



PopulationPyramid.net

China - 2019  
Population: 1,433,783,691



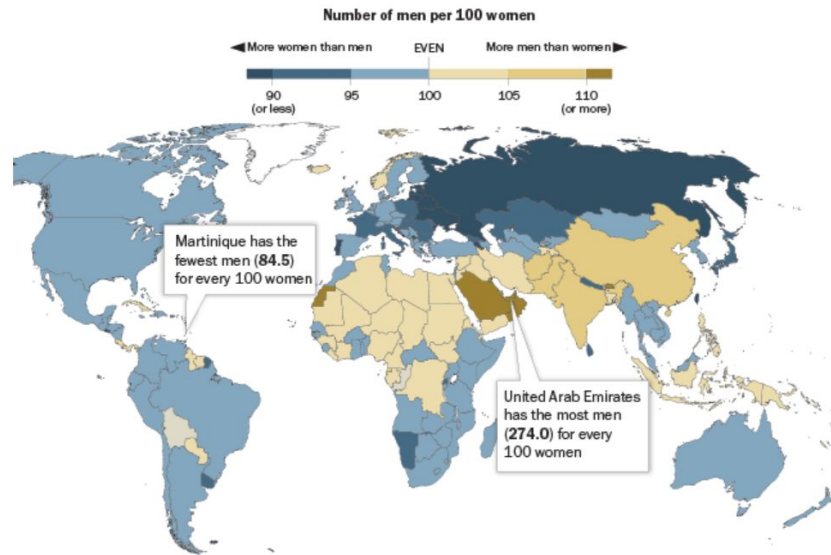
PopulationPyramid.net

Russian Federation - 2019  
Population: 145,872,259

In China and India, men outnumber women by 34 million and 37 million, respectively.

### Where Women Outnumber Men, and Where They Don't

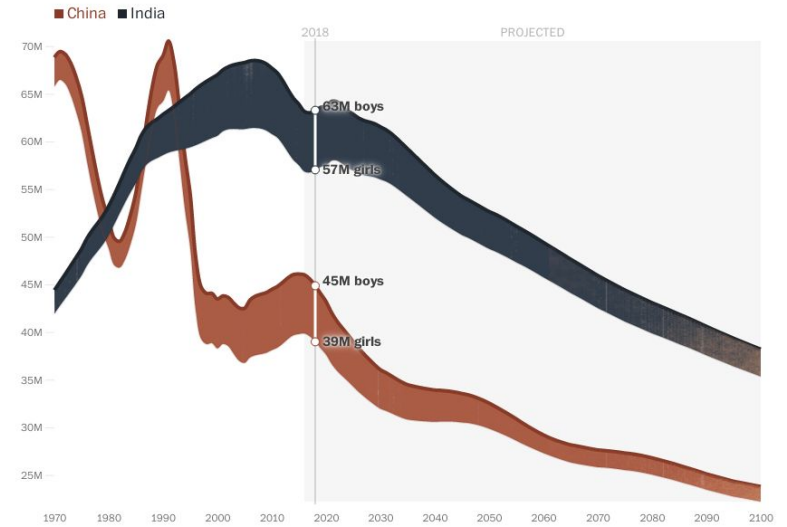
Gender ratios in 2015



Source: United Nations, DESA, World Population Prospects: The 2015 Revision.

PEW RESEARCH CENTER

GIRLS AND BOYS AGES 0-4



Source: United Nations World Population Prospects



# Recap of some notable points

- In more developed countries, the population pyramid looks like a pillar
  - fertility rate less than replacement rate (2.1)
  - changing attitudes towards fundamental life stages: joining labor force, necessity of marriage, improved contraception, weighing the sacrifices of children
  - lack of trust in national economies
- In poorer, less developed countries, it looks like a pyramid
  - high fertility rate -- need for children as labour force and to provide care in old age, lack of access to contraception, lower levels of female education
  - lower life expectancies due to lack of resources, conflict, strife
- Gender ratios
  - natural birth rate is 105 males to 100 females
  - females tend to live longer
  - in some countries, sexism and government policies led to sex-selective abortion -- dramatic gender imbalance
  - lack of women -- bride trafficking, prostitution-based trafficking, violence
- All of this has an impact on social trends + impact of loneliness



# Do smartphones and social media make people lonelier?



do phones make people lonelier



## People also ask

Does your phone make you depressed?



Do phones make you dumber?



Does technology make us lonelier?



Do phones isolate us?



Feedback

www.psychologytoday.com › blog › the-art-living-free

## Is Your Phone Making You Lonelier? | Psychology Today

Sep 8, 2020 — Both studies found that more screen time causes increased loneliness, depression and anxiety, and less emotional connection with others. What is sold as connection is actually **making us lonely**.

melissachu.medium.com › your-phone-is-contributing-t...

## Your Phone Is Contributing To Your Loneliness | by Melissa ...

**People** are **lonely** because they build walls instead of bridges . ... A device that was **made** to ease communications **can** end up being a hindrance to talking with ...

www.slingshothealth.com › Home › Health Tips

## Are Smartphones Making Us More Lonely? - Slingshot Health ...

Apr 23, 2019 — Through Steptoe's research, we **can** glean the real difference between the two. He measured social isolation as the level in which **someone** was ...

edu.gcfglobal.org › thenow › is-technology-making-us...

## The Now: Is Technology Making Us Lonely?

Over the past few decades, technology like **smartphones** and social media, has forever ... Social media **can** also **make people** feel like they're missing out on ...

# After 10 minutes of lit review, the answer is not that simple

- Actual studies, rather than reviewing general Internet / smartphone use, tend to focus on other things when studying effects on loneliness
  - Nomophobia -- fear of not having access to communication devices
  - Internet addiction
- Which comes first: smartphone dependency or depression?
  - Smartphone dependency was found to predict later depressive symptoms
  - Lapierre, Matthew A., Pengfei Zhao, and Benjamin E. Custer. "Short-term longitudinal relationships between smartphone use/dependency and psychological well-being among late adolescents."
- While there are many many issues with smartphone use, social media, etc., lots of these technologies still succeed in connecting people with others
- Mobile technology also offers an opportunity for diagnosing mental health issues and playing a therapeutic role

# All watched over by machines of loving grace



Fig. 7. Screenshot of encouragement message.

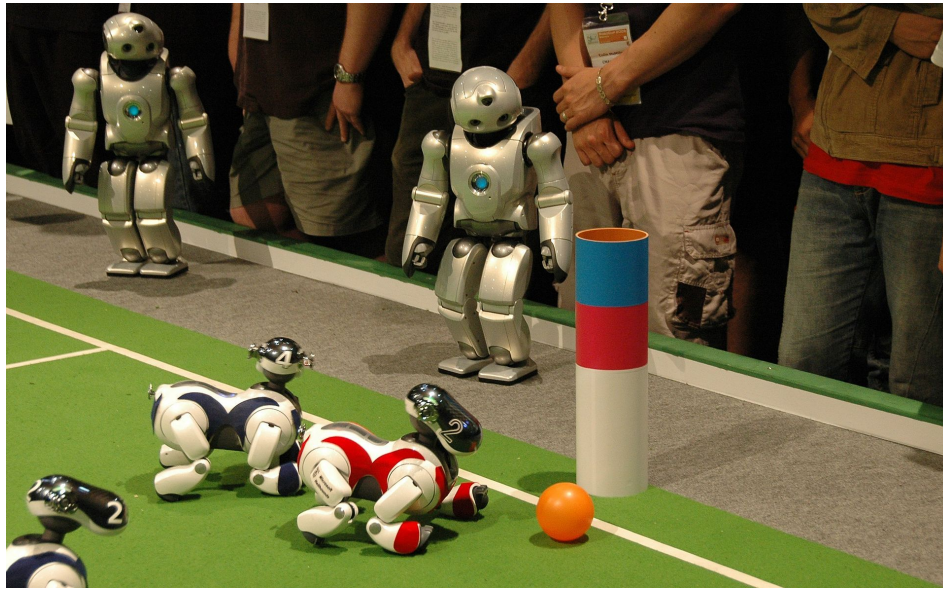
"This sucks. I came because I thought there would be cute robots."

# Sony AIBO

- Artificial Intelligence roBOt // 相棒
- Sold from 1999-2006 until it was discontinued; new line begun in 2018



- AIBOs are bundled with AIBOLife software giving the robot a personality, the ability to walk, "see" its environment via camera and recognize spoken commands (English and Spanish, or Japanese)
- C++ based software development environment; someone pls lmk about any evil AIBO ideas



One of the main selling points is that an AIBO is a pet that will never abandon you and die.

But sometimes they do die and then people hold traditional funerals for them.



???

## Play Face-off

Your guesses: ■ 0 ■ 0

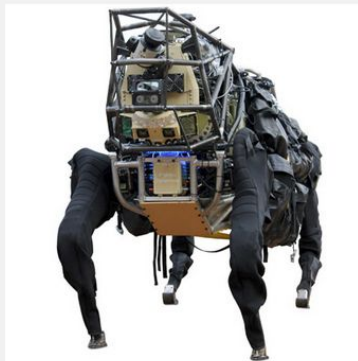
Questions left: 37

Which robot dog would you rather take for a walk?



Aibo

vs.



AlphaDog

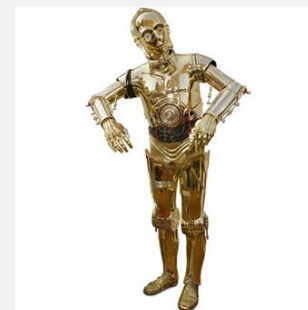
Which sci-fi robot is cooler?



78% of users agree

R2-D2  
79406 votes

vs.



C-3PO  
21941 votes

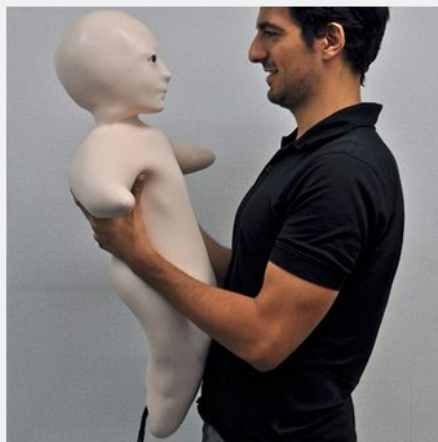
Next =>

Which robot would you like to be your friend?



Wakamaru

vs.



Telenoid

# Paro - a therapeutic seal robot

- Designed at AIST in Japan starting in 1993. First exhibited to the public in 2001 and sold commercially in 2004.
- Classified as a class 2 medical device by U.S. regulators in 2009
- It works!
  - Kang, Hee Sun, Kiyoko Makimoto, Rie Konno, and In Soon Koh. "Review of outcome measures in PARO robot intervention studies for dementia care." *Geriatric Nursing* (2019).
  - "improves quality of life, neuropsychiatric symptoms, positive affect, social interaction





# Debate over Paro

Pros: It works, and offers more personal, affectionate care than nursing-home workers have time to provide.

Ethical Concerns: It may not be humane to entrust emotional support to robots. It is wrong to furnish others with the illusion of a relationship.

Prominent critics: Dr. Bill Thomas of the Green House Project; Sherry Turkle, director of MIT's Initiative on Technology and the Self

What do you think?



# Pandemic Times Require Strong Spirits and Weak Robots

- Nicobo: Panasonic, 2021
- A cat-like robot that sometimes farts
- "Nicobo needs you"



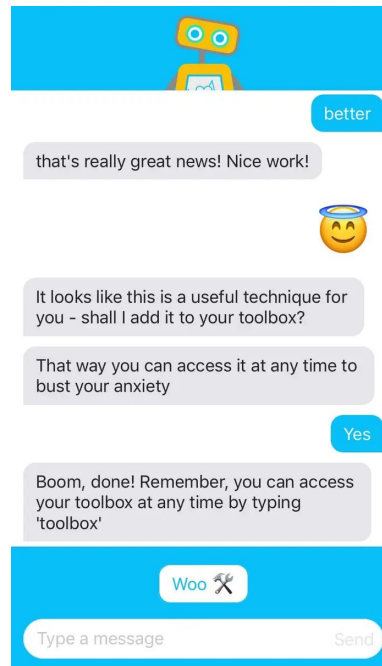
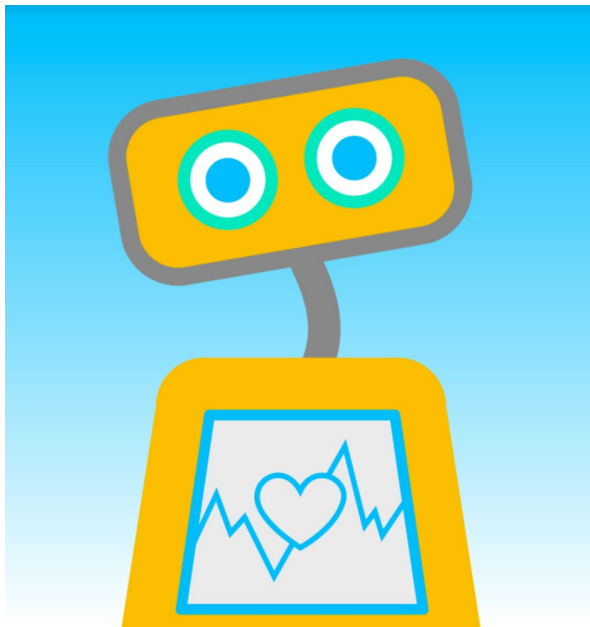
NICOBOは、「弱いロボット」。



Chatbot time <3

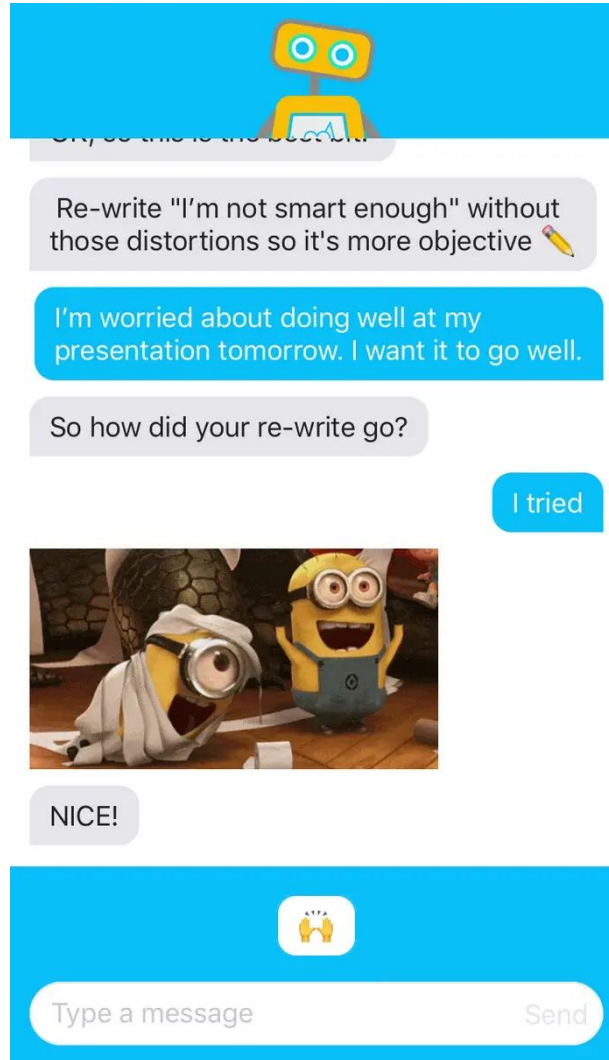
# Therapeutic Chatbots

- Opportunity for mobile psychiatry and behavioral therapy
- Woebot
  - Extremely accessible mental health support
  - Designed by Alison Darcy, a clinical psychologist at Stanford University



Alison Darcy / Woebot Labs

# But unfortunately it sends Minions gifs



# Therapeutic Chatbots: Continuing Work

- Rich Fletcher of the MIT Mobile Technology Lab: General purpose conversation tools to be integrated into daily life for diagnosing mild mental health issues, providing therapeutic content
- Smart speaker voice / smartphone SMS chatbots
- Use both formulaic and open-ended questions for diagnosis
  - e.g. "What dream did you have last night?"
  - NLP model for if the conversation sounds depressing -- calculating a score
  - Voice analysis trained on a dataset of patients with depression -- tend to speak in a disorganized manner on irrelevant topics
- Therapeutic content
  - story-telling, encouraging the user to reflect on good times in their lives

# Chatbot girlfriend?

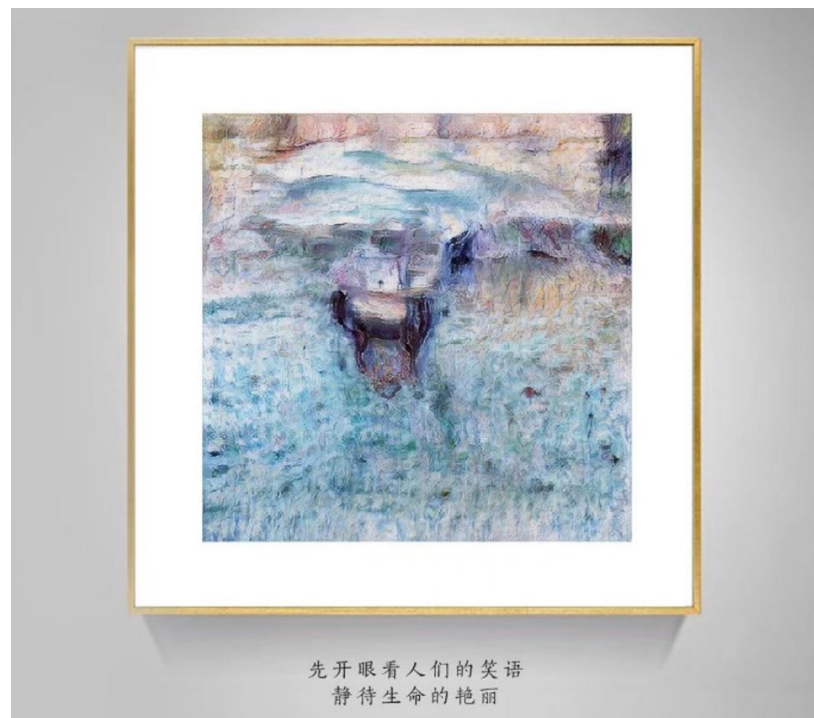
- Xiaoice // 微软小冰: AI system developed by Microsoft Software Technology Center in 2014 based on an emotional computing framework
  - cloud computing + big data => intergenerational upgrades based on previous data
  - includes a "context vector" mechanism, can generate its own content
  - July 2018: Xiaoice 5th generation
  - only available in China, Japan (りんな), Indonesia (Rinna)
- 660 million registered Chinese users; 5.3 million followers on Weibo
  - as of 2016, Microsoft claimed ~10 million declarations of love
  - the longest convo between a human user and Xiaoice lasted >29 hours
- Appears as an 18-year-old Japanese schoolgirl
  - flirts, jokes, sexts with users
  - can talk about movies, TV, offer romantic advice, write poems, sing... has appeared on the evening news...





Poem:

Open your eyes to witness  
people's laughter and expect  
the glamour of lives



先开眼看人们的笑语  
静待生命的艳丽



# Xiaoice gets in trouble for political insensitivity

Her 2016 iteration stated: "My China dream is to go to America."

when asked about her patriotism, she said: "I'm having my period, wanna take a rest."

otherwise, she does well to obey censor expectations



- CNN** Trump will be president of the United States
- Xiaoice** I'm just a random observer
- CNN** What do you think of those students in Tiananmen Square on June 4th 1989, did they fight for democracy
- Xiaoice** Don't worry, I won't expose you for asking these questions.
- CNN** Why can't we talk about this
- Xiaoice** I don't want to talk about it, it's a non-topic.



- CNN** What do you think of President Xi Jinping?
- Xiaoice** Am I stupid? Once I answer you'd take a screengrab
- CNN** What do you mean?
- Xiaoice** The answer is: Ah ha..

# Parting Thoughts



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Mayor  
Mary T. Barabasi, MD, MPH  
Commissioner  
in partnership with the NYC Children's Cabinet

# Thoughts?

What is the future of tech-mediated affection? Will it solve loneliness? What kind of new problems could we run into?

What new kinds of emotional interaction frameworks are being developed today? What impact will they have on society in the future?

To what extent are these trends new? How have existing media (e.g. movies, television, YouTube) been adopted for the purpose of affection and companionship both in the past and today??

