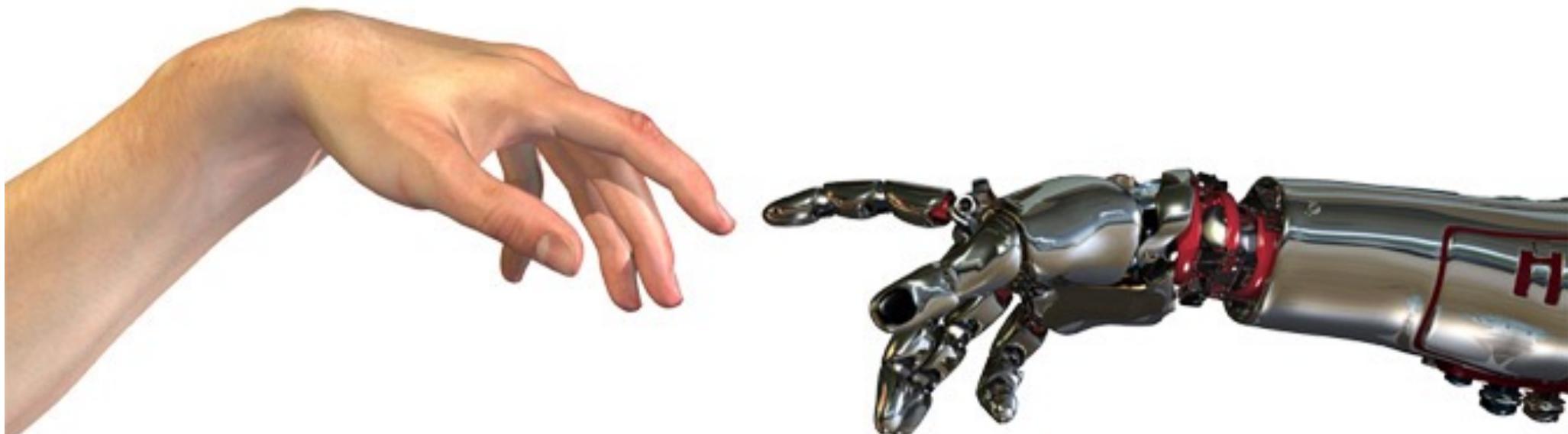


HUMAN-COMPUTER INTERACTION

UNIVERSAL PRINCIPLES OF HUMAN-COMPUTER INTERACTION DESIGN



OBJECTIVES

- 1.) *Anthropomorphism*
- 2.) *Chunking*



ANTHROPOMORPHISM COMES FROM “ANTHROPOMETRICS”

A preference for things that appear humanlike or exhibit humanlike characteristics.

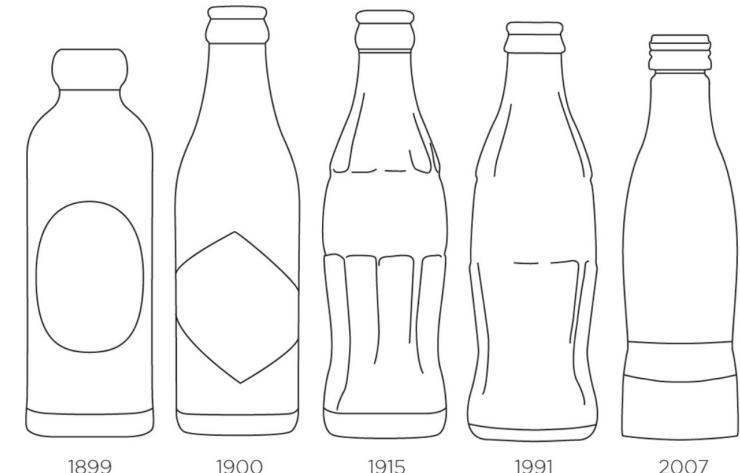
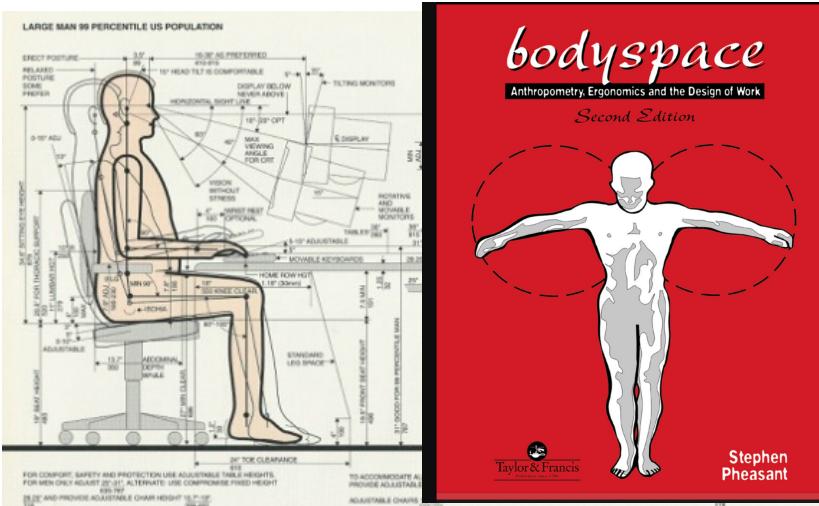
- People tend to ascribe humanlike characteristics to things that look or act like humans. This results in a preference for anthropomorphic forms.
 - Anthropomorphic forms are evaluated more emotionally, and are less sensitive to negative information in buying decisions. Non-anthropomorphic forms are evaluated more analytically.
 - Use contoured or hourglass proportions to elicit feminine and sexual associations. Use round forms to elicit babylike associations. Use angular forms to elicit masculine and aggressive associations.
 - Consider anthropomorphic forms to attract attention and establish emotional connections.



The face of a Mini Cooper



Character from Disney-Pixar's film Cars



Coca-Cola bottles have evolved over the last 100 years, but the more anthropomorphic bottles continue to stand out in terms of their unique aesthetic and emotional appeal.



Smiling Anna G, the renowned Italian design brand Alessi's best-selling corkscrew design.

ANTHROPOMORPHISM ON THE RISE

- Rico and Mother are examples from a breed of connected services and gadgets. They are designed to be instantly familiar and likeable.
- Their use of metaphor is anthropomorphic rather than skeuomorphic — and they exhibit human form, qualities and behavior without being living entities.





DEEP ORANGE
Clemson University

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DEEP ORANGE 12 UNVEILED

→ DISCOVER D012

A photograph of the Deep Orange 12 race car, a sleek, aerodynamic vehicle painted in dark green with white racing stripes. It features prominent Bridgestone tires and the Microsoft logo on the side. The car is positioned on a track with a grandstand in the background.

Toyota Concept-i

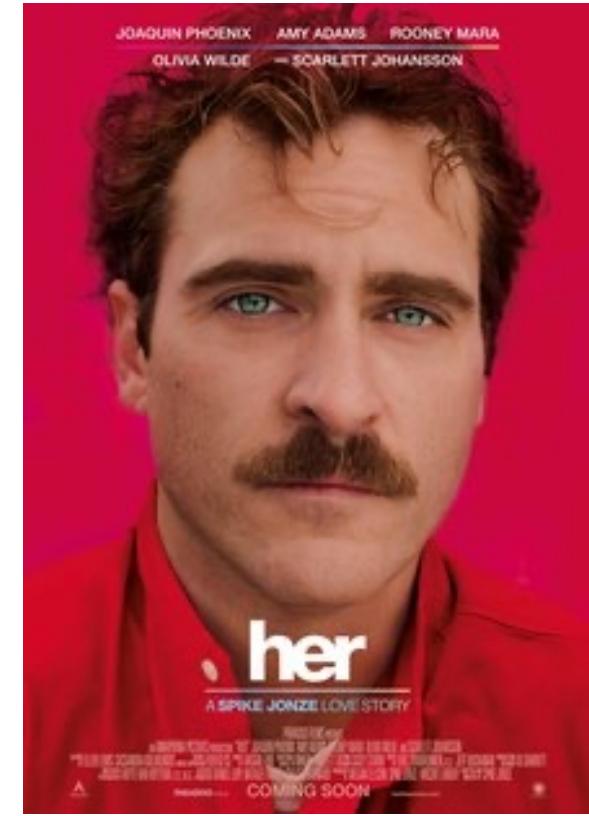
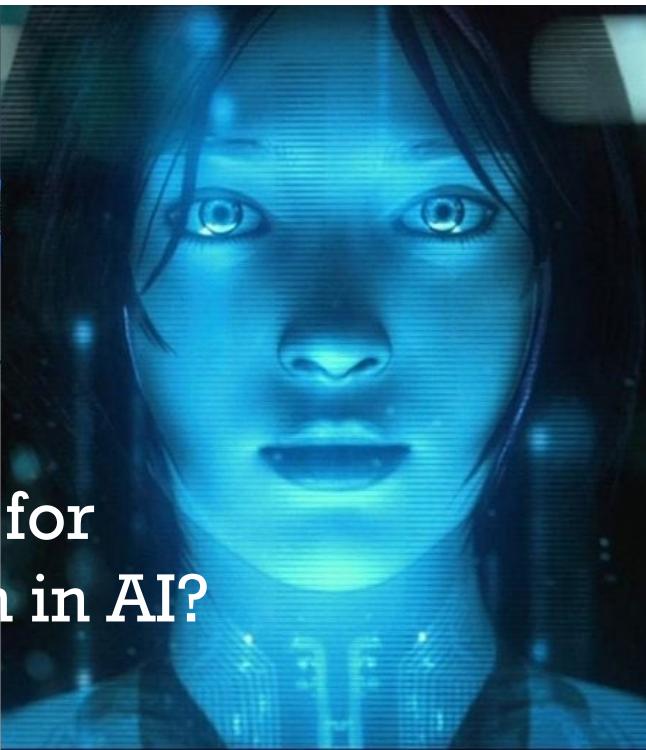


Toyota Concept-i





Should you design for anthropomorphism in AI?



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In studies it's been shown that **giving digital assistants human-like features increased users' expectations of a system's overall competence**, which led to a higher likelihood of user frustrations than if the digital assistant was perceived as less human-like.

Google's **DeepMind artificial intelligence** has produced what could be some of the most realistic-sounding machine speech yet. Listen here <https://deepmind.com/>



ANTHROPOMORPHISM'S CONSIDERATIONS/RECOMMENDATIONS

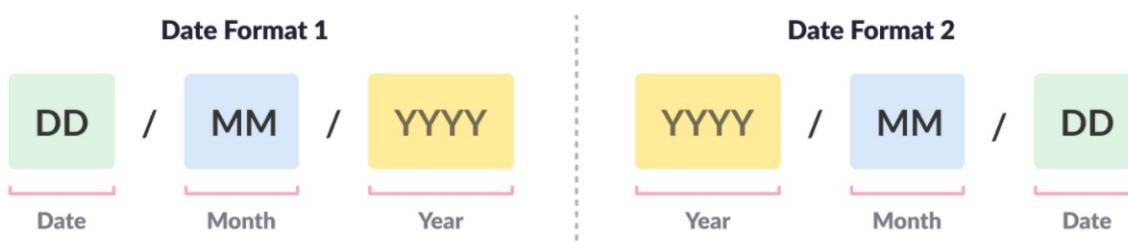


Sonny, the robot that learned the pro-social type of deceit in the film I, Robot (2004)

- When designing interactions that are human, technology **should** behave as humanly as possible.
 - This does not mean mimicking the human form, but instead, **mimicking how humans naturally interact with each other**. Consider the rich linguistic, social, and physical contexts in which humans interact with their environment.
- We **should never** imply that the technology is human. Deceit by lying is not only unethical but also a key eroder of trust.
- We **should** pay attention to **how anthropomorphism affects users' expectations of a digital assistant's capabilities and the emotional impact**.
- Consider the potentially negative emotional impact of anthropomorphism by gender. **Whether to give a digital assistant a female or male gender is a popular topic.**

CHUNKING

- A **chunk** refers to a unit of information in short-term memory – a string of letters, a word, or a series of numbers.
- Users typically can only remember 7+2 digits.
 - Example:
 - Which is easier to remember?
 - 406-789-2567
 - 4067892567

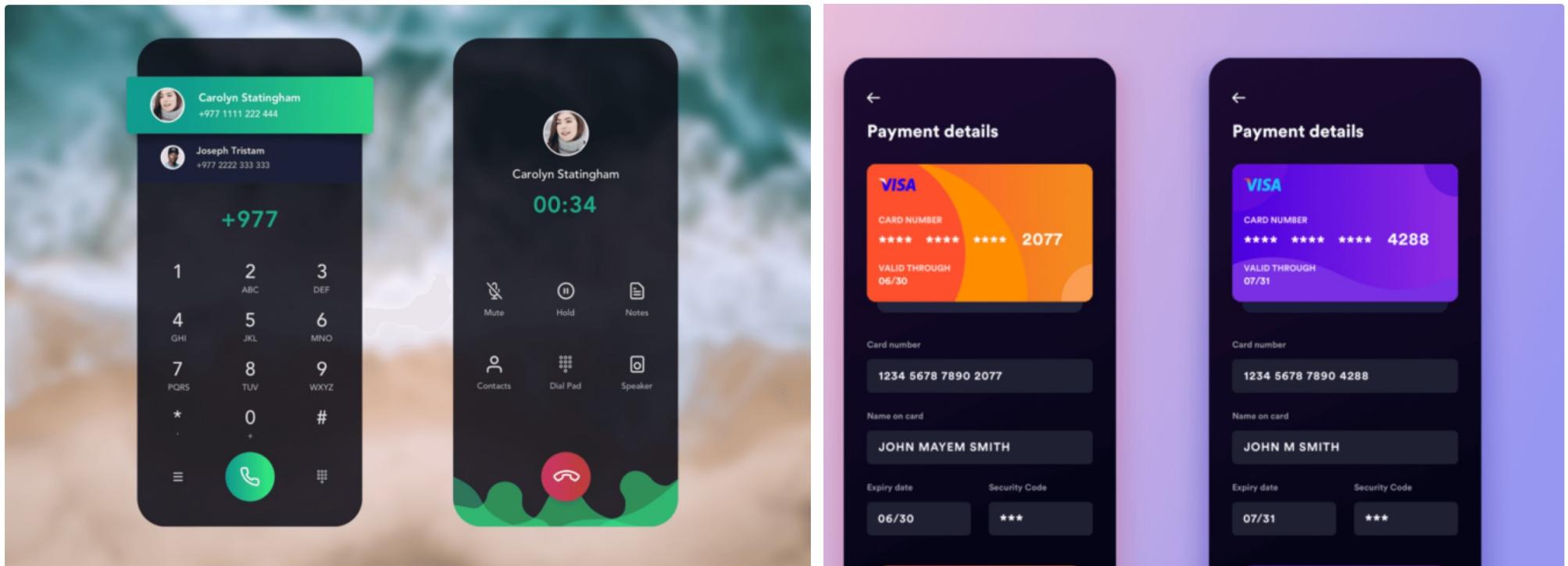


List 1	List 2
angry	thrunced
hoarse	rooped
snuggle	croodle
search	poosk
fatigue	quanked
stutter	maffle
scorch	brizzle
warning	gardyloo
teenager	haspenald
anxious	cark

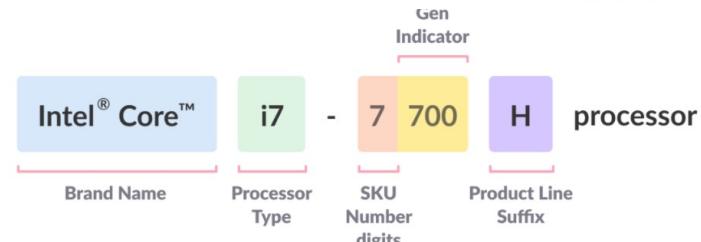
Familiar words are easier to remember and chunk together than unfamiliar words. Of the two lists, list 1 is easier to recall.

CHUNKING

Chunk information to 9 words, preferably ~3-5.
When chunking information, keep the chunks to <9 words. **People can retain chunked information in their memory longer.**



Original image: [Dialpad Dark UI](#) by [sshikhrakar](#). Auto chunking for phone numbers when a user dials in.
al image: [Credit Card Info Form Dark UI](#) by [sshikhrakar](#). Chunking convention for credit card numbers in a UI.



CHUNKING – GIVE OPTIONS (3-5) BUT NOT TOO MANY, AND NOT TOO MANY FEATURES PER OPTION (3-5)



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