

Using Science Fiction Trailers to Teach Social Responses to Communication Technology and the Media Equation – Instructor Instructions

Learning Objectives

1. Explain and apply how interactive media systems and devices are treated as humanlike entities, both in conscious and nonconscious ways
2. Reflect on what this means for design

Background

Clifford Nass and colleagues summarized CASA research for a lay audience in three books: *The Media Equation* (Reeves & Nass, 1996), focusing on early CASA experiments on basic social interaction; *Wired for Speech* (Nass & Brave, 2005), focusing on voice interfaces; and *The Man Who Lied to His Laptop* (Nass, 2010), focusing on later CASA experiments and what human-computer interaction can teach about human-human interaction. CASA findings ranged from looking at how consequences of different human attributes applied to computer interfaces (e.g. interface gender, interface personality, race-coding, etc.) and how different human social behaviors applied to computer interfaces (e.g. norm of reciprocity, social identity, etc.). Frequently, these findings dealt with issues of homophily (people like others similar to themselves, such as extroverts liking extroverts and introverts liking introverts) and consistency (people do not like contradictions, such as people prefer the gender of product's spokesperson matching the stereotypical gender associated with the product or service).

In what they refer to as the “politeness study,” published in *The Media Equation*, Reeves and Nass illustrate the Computers are Social Actors paradigm as follows: (1) Research shows that humans are polite to other humans (human-human interaction finding); one will give a more favorable appraisal of a person when that person asks about themselves than when a third-party asks about that person. (2) Prior research has demonstrated this by having people engage in a task with a partner and either have the partner ask about the interaction or have a third party ask about that interaction. Substituting “computer” in for the second human, Nass and his students conducted a study where people engaged in a text-based interaction task with a computer. Then participants assessed the experience by filling out a questionnaire on that computer, by filling out a questionnaire on a different computer, or by filling out a paper and pencil questionnaire. (3) They demonstrated that the human-human interaction findings are replicated in human-computer interaction, as people gave a more favorable assessment of the experience when they filled out the questionnaire on the computer they used to complete the task, compared with when participants completed the questionnaire on a different computer or using pencil and paper (there was no significant difference between the latter two conditions). (4) They drew out implications from these experimental findings for HCI. In terms of theoretical implications, among other things, this demonstrated that it did not take much to elicit politeness behavior towards computers. As participants were engineering students who denied they had just engaged in such socially-influenced behavior, this also demonstrated the automatic and unconscious nature of the change in their behavior. In terms of implications for design, this demonstrated that interface designers need to be mindful that people will be polite to computers, and when conducting usability studies, introspective responses from users will not tell the whole story about interaction between people and technology, unless the research is designed to account for this unconscious politeness effect. Research has also found that human-robot or human-computer teaming can be elicited or enhanced through homophily: simply giving an identifying characteristic to both a human and a computer in a “team” can elicit greater feelings of affiliation between them—an example of this

from Nass and colleagues' research is when a computer and a participant both had identical color identifiers to wear, they collaborated more readily. This acts independently of actions that would lead to task success, such as goal alignment or demonstrations of trustworthiness. Other studies have found that in addition to unconscious politeness, people interacting with computers, robots, or virtual agents also exhibit gender bias, preferring an agent that exhibits consistency between the gender stereotypically associated with an activity or characteristic. For example, Samantha from the movie *Her*, has the role of an assistant—she exhibits, and perhaps reinforces, the stereotype of women in assistive roles.

This activity, identifying CASA-relevant characteristics in movie characters allows students to think about Media Equation/CASA research findings and apply them to science fiction depictions of artificial social agents, such as robots, computers, and virtual agents. Movie trailers are used due to both their short length and goal of highlighting key points in a movie, and of the characters in it. The activity should be completed after the instructor has either lectured on the Media Equation and provided examples of different CASA research findings and/or students have read excerpts from one of Nass and colleagues' books or reviews of the theory that succinctly cover specific research findings (e.g., Nass & Moon, 2000).

Activity

To complete the activity, the instructor needs to find at least two science fiction movie trailers depicting artificial social agents, such as robots or artificial intelligent interfaces. The different agents depicted should vary along some of the dimensions (personality, gender, affect, etc.) or social behaviors (reciprocity, social identity, expertise, etc.) discussed in Media Equation/CASA research, and these should be clear from just watching the movie trailers. Typically, this activity has used the trailers for *Her*, a 2013 film about a man (portrayed by Joaquin Phoenix) falling in love with his computer's artificial intelligent operating system Samantha (voiced by Scarlett Johansson); and *Big Hero 6*, a 2014 animated Disney superhero movie about a healthcare robot, Baymax. Among the many ways Samantha and Baymax differ (and which are clear from the trailers) is that Samantha has a female voice and Baymax has a male voice; Samantha is a generalist in her expertise and works as a personal assistant, and Baymax specializes in healthcare tasks; and Samantha's voice sounds like human speech and Baymax's voice sounds like computer-synthesized speech. Any science fiction movie trailers will work, provided they meet the aforementioned requirements of clearly depicting attributes and behaviors that (1) differ between trailers and (2) are explained in the lectures and readings on the Media Equation that students had encountered. For the purposes of this activity, we reference the use of two trailers and two agents, but more can be used depending on the number of movie trailers and number of agents in those trailers.

The instructor should show the two movie trailers in the class and asks students to record different attributes, behaviors, and any other concepts discussed in the lecture and readings on the Media Equation relevant to the agents depicted. The instructor might want to provide a brief synopsis of each trailer before it is shown to help guide students of what to look for. Using the items the students listed while viewing the trailers, they should then compare and contrast the two agents depicted in the trailers.

At this point, students should pair up and discuss what they wrote down as well as think of any other ways the two agents are similar and different. Once students have done this, the instructor should provide three prompts for the pairs to discuss further. First, based on the similarities and differences, what would Media Equation/CASA research say about the agents (e.g. the consequences of Samantha being depicted as female and Baymax being depicted as male).

Second, based on the research, were the agents designed appropriately, or should their designs be modified (e.g. research showed that people prefer specialist interfaces to generalist interfaces, so maybe Samantha is less than optimal in this regard; the research cited in *Wired for Speech* showed that recorded speech interfaces should use first person pronouns and synthesized speech should not, yet Baymax uses first person pronouns, so maybe he should be designed differently). Finally, if students identified similarities and differences in terms of gender, race, or other social categories, were the agents designed consistent with social category stereotypes and what are the ethical implications of applying what the Media Equation/CASA research has found and relying on this in the design of the agent(s), their behavior, and their roles?

After students have their discussions in pairs, the full class will reconvene and discuss the similarities, differences, and evaluations of the design of the agents based on the Media Equation. Instructors should probe disagreements among responses presented (e.g., one pair says an agent was designed appropriately and a different pair says an agent's design should be modified). In this discussion, the instructor can also ask the class as to whether they found any additional attributes or social behaviors of the agents that were featured in the trailers that could be tested using the CASA paradigm and ask how might one go about conducting such a test.

Due to the sensitive nature of discussion about race, gender, and other stereotypes, instructors should refer to some of the resources provided by the National Education Association as well as the Southern Poverty Law Center.

Possible Pre-Activity Readings for Students

- Nass, C. (2010). *The man who lied to his laptop: What machines teach us about human relationships*. Penguin.
- Nass, C., & Brave, S. (2005). *Wired for speech: How voice activates and advances the human-computer relationship*. MIT Press.
- Nass, C., & Moon, Y. (2000). Machines and mindlessness: Social responses to computers. *Journal of Social Issues*, 56(1), 81-103. <https://doi.org/10.1111/0022-4537.00153>
- Reeves, B., & Nass, C. (1996). *The media equation: How people treat computers, television, and new media like real people and places*. CSLI Press.

Trailers in this Example

- Her* – <https://www.youtube.com/watch?v=ne6p6MfLBxc>
- Big Hero 6* – <https://www.youtube.com/watch?v=8IdMPpKMdcc>

Other Possible Science Fiction Trailers for the Assignment

- 2001: A Space Odyssey* - https://www.youtube.com/watch?v=oR_e9y-bka0
- Star Wars: A New Hope* - https://www.youtube.com/watch?v=lg3_CFmnU7k
- Wall-E* - <https://www.youtube.com/watch?v=CZ1CATNbXg0>
- Chappie* - <https://www.youtube.com/watch?v=lyy7y0QOK-0>
- Terminator 2* - <https://www.youtube.com/watch?v=CRRlbK5w8AE>

Resources for Facilitating Sensitive Discussions About Race and Gender

- Ed Justice (National Education Association) - <https://neaedjustice.org/>
- Let's talk! Discussing Race, Racism and Other Difficult Topics with Students. (Southern Poverty Law Center) - <https://www.learningforjustice.org/sites/default/files/general/TT%20Difficult%20Conversations%20web.pdf>