



Communicating with Machines: Theory and Practice

Program: Schedule, Papers, Sponsors

Date & Time: Thursday, 24 May 2018; 8:30 – 16:00
Venue: Hilton: Prague and Hilton Old Town, Czech Republic

TIME	SESSION	PAPER	ABSTRACT	AUTHOR(S)
OPENING REMARK: 08:30 - 09:00 AM				
08:30 - 10:00	Main morning session	I Believe in a Thing Called Bot: Perceptions of the Humanness of 'Chatbots'	How humans and robots interact with each other and us has long been the subject of science fiction books, movies, and other media. However, this idea is no longer simply the realm of fiction, and communication research can be at the forefront of examining these interactive robots. In this study, the authors drew upon social information processing theory and expectancy violation theory to explore such interaction. The study used a 'chatbot' – run by a researcher – to respond to a pre-generated set of questions asked by participants. A 2 x 2 experiment varied the presence of typos and capitalized words in the responses. Significant main effects were found in terms of typos in the responses, as typos seemed to have a negative effect on the perceived humanness of the respondent, as well as some other perceptions.	David Westerman, North Dakota State University Aaron C. Cross, North Dakota State University Peter G. Lindmark, North Dakota State University
		Robot Message Credibility	Mediated credibility research has long noted a distinction between three types of credibility: source credibility, media credibility, and message credibility. The current study looks into the last dimension, which deserves more academic attention. Specifically, the study examines how the perceived message credibility (e.g., accurate, authentic, and believable) and the source-related measures of message credibility (e.g., authoritative, reliable, reputable, and trustworthy) of a robot influence people's perceptions of the robot. In an experiment, a humanoid robot (Nao Evolution	Seungcheol Austin Lee, Northern Kentucky University Alyssa Appelman, Northern Kentucky University

			V5) was introduced as a public speaking robot and participants evaluated the credibility of the message as well the perceived intelligence, likability, and human-likeness of the robot. A structural equation model suggested that message credibility and source-related message credibility were distinct constructs, although highly correlated. Both constructs significantly impacted the evaluations of the robot.	University Zoe Waldridge, Northern Kentucky University
		You need to show that you are not a robot	Given that today 60% of Internet traffic is generated by bots, "CAPTCHA" tests that are supposedly impossible to be done by robots have been introduced. What are the cognitive and emotional effects of these tests on Internet users?. Does this request to demonstrate they are not a robot affect users' identity as human beings? To answer to these questions, we selected two groups (117 and 116 respondents, respectively). An online questionnaire that differed only in the task was proposed: we asked the first group to complete some CAPTCHA tests, and the second group to complete some logic tests. In addition to other questions in both versions, we introduced the TLX scale (NASA) and the "IWAH" (Identification With All Humanity Scale). Preliminary results show that CAPTCHA execution is associated to alienation feelings and that the self-perception of humanity is partially influenced by the execution of the two different types of test.	L. Fortunati, University of Udine, Italy AM Manganelli, University of Padua, Italy F. Cavallo, Scuola Superiore The Sant'Anna, Pisa, Italy F. Honsell, University of Udine, Italy
		The Interplay of Contrary Tendencies in Human-Machine Relationships	Can we consider our associations with machine beings interpersonal relationships? Following the dialogism of Mikhail Bakhtin (1981), Relational Dialectics Theory (RDT; Baxter, 2004)) suggests all interpersonal relationships are characterized by the presence and communicative management of tensions. These relationship pushes and pulls arise from opposing discourses about the nature and aims of relationality. The ongoing communicative management of dialectics constitutes and relates the entities of interest. The purpose of this talk is to consider the extent to which RDT might illuminate our understanding of emerging relationships between human and machine beings by exploring parallel tensions characterizing discourses of human and human-machine relationships (e.g., instrumentality versus relationality) and considering the implications of the dialectical approach for considering the development of interpersonal relationships with machines as laden with endemic contradictions, non-linear, and communicatively negotiated.	Autumn Edwards, Communication and Social Robotics Labs Chad Edwards, Communication and Social Robotics Labs
		Working as a team: The influence of cooperation with a chatbot on customer service perceptions	Chatbots are gradually being deployed by organizations in service settings to communicate with and solve problems together with consumers. The current study investigates how eliciting cooperation between consumers and chatbots in a service context influences the perception of customers on chatbots' anthropomorphism, social presence, the quality of information provided by a chatbot, and the chatbot service	Guy Laban – Graduate School of Communication, University of Amsterdam

10:15 - 11:50	Session 2a High density break out session 8 minutes each		<p>performance. An online experiment (N = 91) was conducted in which participants performed a service-oriented task with the assistance of chatbots developed specifically for the study, and evaluated the performance and attributes of the chatbot. The preliminary results suggest a direct positive link between perceiving a chatbot as cooperative and perceiving it to be more anthropomorphic and with higher levels of social presence. Moreover, the results also show that the influence of perceiving a chatbot as cooperative on service performance evaluations is mediated by perceptions of the quality of information provided by the agent.</p>	<p>Theo Araujo – Amsterdam School of Communication Research (ASCoR)</p>
		<p>Theory of Mind in Machines</p>	<p>Mentalizing—meta-representational sense-making associated with inferring others’ mental states—is core to human social interaction; a central mentalizing mechanism is theory of mind (ToM) in which one ascribes mental states (mind) to self and other, and uses that comparative ascription to make predictions about others’ behaviors. Although ToM has been assessed for non-human animals, it is not yet known whether humans develop ToM for mechanical agents exhibiting properties of intelligence and life. Because such mentalizing is core to human-human relations, it is likely to function centrally in human-machine relations. This bridges that gap by replicating classic ToM tests (strange stories, behavioral predictions, interpreting visual and audio social cues, and false belief) across four agents (low-, medium-, and high-anthropomorphic robots and a human control) to assess whether humans may be said to engage in meta-representational processes for robots.</p>	<p>Jaime Banks, West Virginia University</p>
		<p>Ethical, Legal, and Social Issues of Healthcare Robots: Consulting Expert Voices</p>	<p>This contribution investigates the ethical, legal, and social issues (ELSI) of social robots in healthcare. Typical examples of such robots are mobile assistants, cognitive therapeutic robots, and drones. Our research contributes to the existing literature by providing preliminary findings from four international workshops held between 2015 and 2017 that gathered experts in the field. Specifically, we highlight challenges to the use of social robots in healthcare that are connected to human-machine-communication, such as privacy, autonomy, and de-humanization of interactions. Potential solutions to these ELSI, as discussed in the workshops, are summarized.</p>	<p>Christoph Lutz, Norwegian Business School</p>
		<p>Rage Against the Rage Against the Sentiment Machine: A Critical Evaluation of Human and Machine Sentiment Analysis of</p>	<p>The popular perception of political discourse on social media is that it has become a highly volatile and divisive powder keg. Nonetheless, social media has remained central to political communication in many contexts, and social researchers understand the value of studying this discourse. However, attempts to decipher the meaning of large corpora of polarized political content on social media platforms remains challenging to machine learning methods. Using a case study of tweets related to Donald Trump, this study</p>	<p>Jeremy L. Shermak, University of Texas at Austin Kelsey N. Whipple, University of</p>

<p>Polarizing Political Discourse on Twitter</p>	<p>evaluates how effective both machines and humans are at deriving sentiment from challenging and controversial political discourse. Using human coding of sentiment and 10 sociolinguistic attributes, we unexpectedly found that not only are machines poor at deriving sentiment for this type of content, but humans have major issues as well. We highlight the most problematic areas for machine coding and provide practical interventions based on human analysis. The findings are intended to urge caution in deploying machine-based sentiment analysis and promote revision of human sentiment analysis of politically divisive discourse.</p>	<p>Texas at Austin Lesley Willard, University of Texas at Austin Dhiraj Murthy, University of Texas at Austin</p>
<p>Knowledge Production in the Age of Digital Archives: The role of human-machine communication in constructions of the past</p>	<p>This research focuses on the ways in which historical representations are retrieved through digital depositories, and how human-machine interaction may serve as another layer of knowledge production. By analyzing the ways in which historical newspapers are presented and accessed through the TimesMachine—the New York Times’ online archive launched in 2014—we examine the mediated experience of accessing sources through the digital archive. Based on interviews with professionals involved in the construction and design of the TimesMachine and analysis of search results from different categories, we analyze the way users access historical sources through digital archives, understood as a form of digital interlocutor. Our analysis demonstrates how default modes of retrieval derive from infrastructures constructed by humans and are thereby shaped by work practices, organizational cultures, and individual habits.</p>	<p>Sharon Ringel, Columbia Journalism School Angela Woodall, Columbia Journalism School</p>
<p>Voice-activated technology as socialbots: Do emotion-sensing and personalization humanize smart devices and enhance user experience?</p>	<p>We have all seen movies depicting futuristic socialbots as a personal assistant – someone who has a personality, knows our preferences, even knows how we feel at times, and reacts accordingly. In our real lives currently, we have Amazon’s Alexa, Google Home, and other voice-activated virtual assistants (VAVA). So far, these technologies have conformed to the same standards to each person – they are functional assistants and forgo emotional attachment (sensing). However, previous research has shown that higher personalization enhances customer satisfaction. According to Mediation Equation theory, people interact with media as they would in real social relationships. As communication technologies advance, they will be better at “meeting” people where they are, that is to exhibit more human-like qualities and emotionality.</p>	<p>Alicia Hong, Boston University Saniya Farooqi, Boston University</p>
<p>Possibility or peril? Perceptions of artificially intelligent automated agents</p>	<p>To date, Interactive Voice Response systems (IVRs) primarily have served as perfunctory “assistants.” With algorithmic aid, however, they have become ever more advanced and in tune with their users’ preferences and behaviors. As devices that can “listen” and learn, the proliferation of IVRs into the home present new frontiers – of possibility, but also of exploitation and threats to privacy and</p>	<p>Kate K. Mays, Boston University James E. Katz, Boston</p>

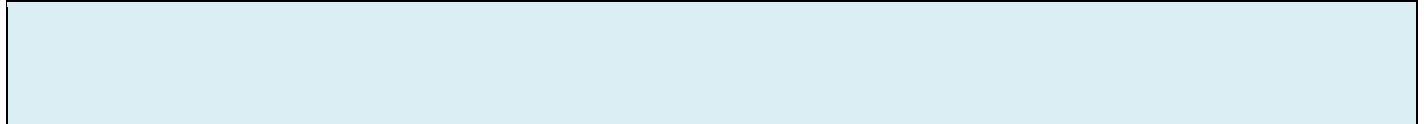
		<p>the social fabric. Through interviews and a survey with U.S. college students, and analysis of public discourse, this paper explores how people perceive the increasingly intelligent automated agents (AAs) that drive IVRs and other communication technology. AAs present possibility and threats along two dimension: (1) socialization – enabling artificial connection that may alleviate but may also exacerbate loneliness and alienation; and (2) privacy – collecting data on human behavior in such vast quantities and learning from it has great potential for deeper understanding, but expands opportunities for emotional manipulation and commercial exploitation.</p>	University
	<p>The Role of Social Presence in Human-Robot Interaction Research: A Meta-Analysis</p>	<p>Social presence has a long history in human-computer interaction and computer-mediated communication and is growing within the field of human-robot interaction. A meta-analysis was conducted of studies manipulating social presence of a robot in a human-robot interaction experiment. Findings suggest a positive direct and homogeneous relationship between social presence to technology acceptance and interpersonal attraction. Theoretical and industrial applications are discussed.</p>	<p>Riley Richards, University of Wisconsin – Milwaukee</p> <p>Austin J. Beattie, University of Iowa</p>
	<p>Effects of Chatbot Gender on Self-Disclosure, Liking, and Trust</p>	<p>Currently, few human-computer interaction studies have used automated chatbot messaging technology to study gender biases in digital communication. While prior literature suggests that users respond stereotypically to gendered virtual humans, the majority of these studies use virtual characters capable of nonverbal behavior, such as gestures and facial expressions, similar to humans. Yet, because chatbots lack most nonverbal capabilities, users will form impressions of chatbots based on limited cues (e.g., language, physical appearance, or voice properties). In this study, we manipulate both visual representations and language in order to explore how user perceptions of and behavior toward chatbots are impacted by implied chatbot gender (male versus female), suggested domain expertise (doctor versus generic professional), and communication style (interrogative versus responsive). We believe this study can provide much needed insight into the effects of chatbot characteristics, particularly regarding those of limited nonverbal behavior on gender biases during virtual interactions.</p>	<p>Katherine C. Roehrick, Stanford University</p> <p>Garrick Fernandez, Stanford University</p> <p>Debnil Sur, Stanford University</p> <p>Jeffrey T. Hancock, Stanford University</p>
	<p>Embodying New Media: Computational Fashion, Wearable Technology and New Materialism</p>	<p>Smart textiles rely on the integration of skills and knowledge from a variety of design disciplines including industrial design, programming and fashion design. Based on a 10-week summer project on smart textiles, this paper describes the ways in which these diverse design disciplines come together along with the communicative and material practices that are necessary to make smart textiles. In this case, smart</p>	<p>Laura Forlano, Illinois Institute of Technology</p>

			<p>textiles are digitally knit swatches that integrate dynamic, computational capabilities in order to replicate common digital interactions such as swiping, clicking and pushing buttons. Like 3D printing, digital knitting combined with interactive, digital elements allows for distinct aesthetic possibilities and functionality while, at the same time, introducing new considerations around ethical tradeoffs with respect to labor and sustainability. This paper extends theories around digital materiality in order to understand the possible futures that are coming into focus around smart textiles.</p>	
10:15 - 11:50	Session 2b High density break out session 8 minute each	Siri's Social Ontology: The Politics of Apple's Semantic System	<p>This paper adopts a Human-Machine Communication approach to study the social implications of the underlying infrastructures that support virtual personal assistants (VPA). VPA's rely on applied computational ontologies to integrate disparate data to produce meaning. Siri's Active Ontology takes data provided from various services (apps like Yelp, Instagram, etc.), runs them through modules (essentially, designated categories like restaurant, movie, etc.), and connects them to user interfaces (what the user sees or hears). The Active Ontology organizes disparate data provided by apps (via APIs) so Siri can relate semantic or "smart" information to the user. This can present unique problems. What counts as a restaurant? How are social entities and relations defined? What languages are recognized? This paper outlines key questions that represent some of the emerging social concerns in data-based ontology research and practice.</p>	<p>Andrew Iliadis, Temple University</p>
		Diagrammatic Mental Representation: A Methodology for Understanding Human-Machine Communication	<p>One way to understand communicative practices such as authentication is to consider the ways that people make sense of these exchanges. An understanding of people's mental models when they perform authentications provides useful cues on this form of human-machine communication. Mental model conceptualization is a theory explaining how people think things work. We propose a representation method allowing users to illustrate various processes, modalities, and sites of interaction they rely on when performing authentications. After performing a task, we asked participants to represent their interaction using a magnet-based diagrammatic representation technique allowing them to draw and move prefabricated icons representing various processes. Participants used several strategies to represent logins. We found that the mental model methodological approach of successfully provided an entry point to unpack the complex communicative interaction between people and technology.</p>	<p>Hervé Saint-Louis, University of Toronto</p> <p>Rhonda McEwen, University of Toronto</p>
		Social Robots and	<p>In 2010, Westerman and Skalski argued that the popular</p>	<p>David</p>

<p>Social Presence: Interpersonally Communicating with Robots</p>	<p>technology best suited for promoting social presence were computers and the internet. Although this may still be the case, social robots seem likely to challenge the internet's dominance for social presence. This paper will discuss the coming (and already here) popularity of social robots, the concept of social presence and how it is relevant to social robots by outlining some the research in this area, and future plans for social robots/social presence, both in the short- and long-term by outlining a few theories that may be especially relevant to the study of human-robot interaction (HRI).</p>	<p>Westerman, North Dakota State University</p> <p>Autumn Edwards, Western Michigan University</p> <p>Chad Edwards, Western Michigan University</p>
<p>Contingency as key: Exploring the role of contingency in human machine communication</p>	<p>The domain of human-machine communication (HMC) has continued to fascinate innovators, scholars and everyday users alike. The fundamental question driving innovation and inquiry is whether HMC can reach the "conversational ideal" of human-to-human or face-to-face (FtF) communication? This proposal argues that one of the key concepts that make conversations unique is the notion of contingency. It identifies need for additional research on contingency and its effects. Toward this end, this proposal has three goals: (i) to review some of the existing theories and models that account for contingency; (ii) to synthesize empirical findings about the effects of contingency on communication outcomes; and (iii) to discuss practical guidelines on how to design and build contingency in future HMC systems. The larger goal is to encourage more discussion on how the principle of contingency can help HMC research to not only meet the "conversational ideal" of FtF, but also go beyond.</p>	<p>Saraswathi (Saras) Bellur, University of Connecticut</p>
<p>Heart of the Machine: Conceptualization, Operationalization, Evaluation, and Contextualization of Machine Personality</p>	<p>While social robots have been applied in areas such as education, entertainment, tourism, and health, there has not been much research that reviews the personality of machines. As machine personality can affect users' trust in and attachment for the machines, building a personality that fits in users' expectations can improve the cooperation between humans and machines. Thus, this study seeks to understand how machine personality has been conceptualized, operationalized, and evaluated in prior literatures across different disciplines. A systematic review of literature on machine personality from 2000 to 2017 was developed. Preliminary analyses demonstrated that the Big Five model was most frequently applied in conceptualizing machine personality, extroversion being the dominant dimension in these studies. The operationalization includes manipulating robots' facial expressions, verbal cues, and movements. Participants' evaluation of the machine</p>	<p>Yi Mou, Shanghai Jiao Tong University</p> <p>Changqian Shi, Shanghai Jiao Tong University</p> <p>Tianyu Shen, Shanghai Jiao Tong University</p> <p>Kun Xu, Temple</p>

		personality depends on specific tasks and contexts. More results and implications will be discussed in the full study.	University
	Want to talk a-bot it?: The Human-to-Human Interaction Script and Robot Support Providers	As technology continues to advance, artificial intelligence, automated agents, and other bots have grown more prominent and widespread in modern society. As a result, a number of bots have been created for socially-oriented purposes, such as providing social support to humans. Literature on supportive communication is abundant in both breadth and depth, and the field of human-machine communication (HMC) is rapidly expanding our understanding of how humans communicate with digital interlocutors, however, much less is known about how people perceive and anticipate interaction when seeking support from a bot. This study considered literature in social support, as well as the Human-to-Human Interaction Script, to explore how participants' perceptions of uncertainty, liking, and social presence were impacted when they envisioned seeking social support from a bot.	Austin J. Beattie, University of Iowa Riley Richards, University of Wisconsin – Milwaukee
	Computer-Based Receptionist as a Social Actor: Exploring CASA Effect for Successful Employee Recruitment	Many organizations have adopted a computer-based receptionist to get visitors check in. Although such an automated receptionist can save administrative costs while increasing security, little is known about how the human-machine communication (HMC) affects the organization's attraction. Because the receptionist is the very first actor for a visitor to communicate with in the organization, it is critical for the organization to leave a positive impression, particularly for successful employee recruitment in the strong job seekers' market today. Thus, this study explores the impacts of a computer-based receptionist on individual perception toward communication competence of the receptionist, satisfaction with the interaction, and attraction to the organization. An online experiment is designed to compare two types of computer-based receptionists (i.e., virtual receptionist and text-based check-in system) among college students as job seekers. The results are discussed along with implications for effective HMC in an organizational context.	Kumi Ishii, Western Kentucky University
	Domestic Appliance as Liberal Objects?	My presentation suggests a few ways that the relation between humans and objects, as a relation of control and governance, is an outcome of a post-Enlightenment history of Liberalism and of a current regime (but also a crisis) of Liberal reasoning, subjectivation, and governance. In this sense, my contribution follows two paths: one historical, and the other a diagnosis of what remains of the history of Liberalism in the present context. The historical focus considers how Liberalism, since the 19th century, has formed around and instrumentalized specific objects and	James W. Hay, University of Illinois

			<p>assemblages of objects—as “Liberal objects.” To think about this history in the present, my paper focuses on an array of “smart” domestic appliances (particularly kitchen appliances) that promise to be useful for a new regime of personal, domestic management and freedoms. I ask how the recent relation between humans and domestic appliance makes the home and kitchen a significant site of Liberal citizenship.</p>	
		<p>A Paradigm for Communication Research: Communication as a context for interaction</p>	<p>We articulate this presentation in two parts. Firstly we will introduce a twofold typology of main Communication Research paradigms: 1. Communication as transmission (interested both in effects and in reception of messages) and 2. Communication as interaction (interested both in the context of the Interaction and also in the relationship between the medium and the user). Secondly, being aware of the limitations of the cited paradigms for carrying research adjusted to a reality where communication defines environments and relationships, we will be proposing to understand Communication as a context for Interaction, paradigm from which it is possible to take into account different elements which give utterance to diverse communication types (human computer interaction, human machine communication, interpersonal communication, etc.) We will be introducing this paradigm by outlining its epistemological basis and by proposing two heuristics: understanding communication as dependent variable and understanding communication as space.</p>	<p>Gloria Gómez-Diago, Universidad Rey Juan Carlos</p>
		<p>Evaluation of Ethical Decision Made by Artificial Intelligence in a Self-Driving Car</p>	<p>A self-driving car is an unmanned ground vehicle that senses the environment and navigates without human input. The increased attempt to distribute a self-driving car in recent years has intensified debates concerning the ethical decisions made by artificial intelligence (AI). Using self-driving cars as an instance, this study is designed to infer the perceived validity of an ethical decision purely made by AI, focusing on how people perceive it. We will provide a same scenario, a car driver slipped by an icy road and accidentally killing a cyclist, with different identity of a perpetrator, an AI driver and a human driver, and see how the different identities influences the assessment of their ethical decision using a survey. Based on Attribution theory, we attempt to see how people identify themselves to those two different identities of a perpetrator and how it influence the evaluation of the decision.</p>	<p>Joo-Wha Hong, University of Southern California Yunwen Wang, University of Southern California Paulina Lanz, University of Southern California</p>



LUNCH BREAK: 11:50 - 13:15

13:15 - 14:30	Session 3a Long form break out session 15 minutes per paper	<p>Human versus Cartoon Agents: The Effect of Formal Realism on Parasocial Interaction and Parasocial Relationship</p>	<p>Does it have to look real to feel real? This study looked into the question of formal realism of agents by comparing audiences' parasocial interaction (PSI) and parasocial relationship (PSR) to a human media figure and a 2D manga-style animation media figure –a representational technique that is often considered “less real” despite its popular usage. Two mock online dating self-introduction videos were used, carefully designed to be identical but for the formal realism of the figures. Whether the figure was a human actor or a 2D animation character did not affect PSR nor PSI, and familiarity with cartoon, manga, animation genre did not moderate. However, familiarity as a main effect significantly predicted PSR, implying a possibility that higher familiarity with any type of less formally real agents may positively affect people's potential relationship formulation with all types of mediated agents. Age was negatively correlated with familiarity, but did not predict PSR: the younger you are, the more familiar you are, but it is one's familiarity with “less real” representations not one's developmental stage that matters. Lastly, the results indicated while PSR and PSI are related concepts, they should be conceptually distinguished. User's long-term relationship to agents should not be assumed by the quality of the interaction alone, and vice versa.</p>	<p>Do Own Donna Kim, University of Southern California</p>
		<p>Power Shifts in the Newsroom: Assessing the Autonomous Power of Automated Technology in the News Production Process</p>	<p>In this era of “big data”, automated technologies are increasingly used by newsrooms to manage the data deluge – machines are taking over traditionally “human” tasks, including the aggregation, prioritization, and writing of news. As machines become smarter, an investigation into how the social dynamics, and in turn, the power dynamics, of news production is warranted. This study uncovers the changing role of journalists vis-à-vis the machines through the stages of news making and assesses the extent to which the machine is capable of augmenting and exerting power on the news production process. Employing the actor-network theory and in-depth interviews, the study reveals the transformative role of machines in the news gathering, writing, and distribution stages. Journalists, however, maintain that they still hold the reins in all stages of the news production process, especially in news selection and editing, suggesting their desire to protect their roles as the final arbiters of meaning.</p>	<p>Wu Shangyuan, Nanyang Technological University</p>
		<p>What Drives Positive User Perception and Evaluation of Recommendation</p>	<p>The current study aims to understand how different algorithms of movie recommendation system can be communicated to users in a more persuasive way, in order to sound more intelligent, likeable, and trustworthy. Using a 2</p>	<p>Jeeyun Oh, University of Texas at</p>

		Technology?: Creative Message Strategies for Recommendation Systems	<p>(Recommender System Objective: Accuracy vs Serendipity) X 2 (Messaging Strategy: Informational vs Transformational) factorial-design experiment, we investigate how to best present content-based (accurate) suggestions vs. knowledge-based (serendipitous) suggestions in the least intrusive way while still maintaining positive user perceptions of the system's intelligence and credibility. Grounded in the CASA (computers-are-social-actors) paradigm and Taylor's six-segment message strategy wheel, the study not only seeks to bridge different communication theory paradigms, but also extends literature on recommender systems from a consumer psychology point of view. The study makes practical contributions through a more nuanced understanding of messaging strategies that recommender systems can utilize for their broad range of audiences with distinct tastes and preferences.</p>	<p>Austin</p> <p>Sabitha Sudarshan, University of Texas at Austin</p> <p>Jung Ah (Jay) Lee, University of Texas at Austin</p>
		What Does it Matter Who is Speaking? Authorship, Responsibility and Natural Language Generation Algorithms	<p>As computers and related systems increasingly encroach on human abilities in areas like manufacturing, financial transactions, transportation, etc., the one remaining bulwark of human exceptionalism appears to be creativity. But there are now artifacts that can produce what appear to be creative output. This paper critically assesses the opportunities, challenges, and repercussions of increasingly creative machines by focusing on the questions of authorship and responsibility. It demonstrates 1) how, in the case of computer generated content, it remains uncertain as to who or what can be responsible for the work that is produced; 2) how this widening responsibility gap creates difficulties for deciding who or what communicates by way of these products, and 3) how the response that we make to this opportunity/challenge has important consequences not just for machine capabilities—deciding what computers can and (still) cannot do—but also for how we conceptualize responsibility and understand ourselves.</p>	<p>David J. Gunkel – Northern Illinois University</p>
<p>13:15 - 14:30</p>	<p>Session 3b</p> <p>Long form break out session 15 minutes</p>	Status and Social Robots: Perceptions Based on Physical Characteristics	<p>Perceptions of social status deeply influence how we view and interact with others, fall into social roles, and can even reflect thoughts about our own status. Status is a core mechanism in interpersonal relationships and has significant impact on our self-esteem and quality of life (Fiske, 2010). This study investigated possible status dynamics in human-robot interaction. We hypothesized that people will confer status to social robots after viewing pictures of them and that height, age and male gender display would be positively correlated with perceptions of status. Survey results suggest that participants do believe that robots hold a certain social status and that perception status is affected by physical dimensions of the robot. Since status determines a great deal of human-human interaction, it is crucial to understand</p>	<p>Hannah Mieczkowski, Stanford University</p> <p>Sunny Xun Liu, Stanford University</p> <p>Jeffrey Hancock, Stanford University</p>

per paper		how these assumptions may transfer to human-robot interaction as it becomes more typical in everyday life.	Byron Reeves, Stanford University
	Embodiment Effects in Human-Agent and Human-Robot-Interaction -A Framework and Scale	We propose a new theoretical framework assuming that embodiment effects in HAI and HRI are mediated by users' perceptions of an artificial entity's body-related capabilities. To enable the application of our framework to foster more theoretical-driven research, we developed a new self-report measurement that assesses bodily related perceptions of the embodiment and corporeality – which we reveal as not being a binary characteristic of artificial entities. For the development and validation of the new scale we conducted two surveys and one video-based experiment. Exploratory factor analysis reveal a four-factorial solution with good reliability (Study 2, n = 442), which was confirmed via confirmatory factor analysis (Study 3, n = 260). In addition, we reveal that humans' perceptions of an artificial entity's capabilities vary between virtual and physical embodiments, and that the evaluation of the artificial counterpart can be explained through the perceived capabilities. Practical applications and future research lines are discussed.	Astrid Rosenthal-von der Pütten, RWTH Aachen University Laura Hoffmann, CITEC, Bielefeld University Nikolai Bock, RWTH Aachen University
	Seeking out help as a function of different psychological distances from a digital agent	Empathy is important asset for understanding, resolving conflicts, and encouraging pro-social behaviors. However, the empathy paradox, aiming for empathy while being overwhelmed to receive care and choosing to remain at a status quo, can prohibit people from gaining an opportunity to overcome a problem by seeking out advice. A virtual agent may substitute for humans to offer empathic advice given its potential as counselor for free of emotional work for both sides. The current study emphasizes the social psychological distance between people and digital agent as a factor that governs the people's perceptions of digital agent. This research pursues three goals. First, it theorizes how the perceived psychological distance from digital agent influences people's anticipation of its characteristics. Second, it investigates how the perception of psychological distance relates to people's willingness to receive agent's advice. Finally, it investigates whether this association is a function of the agent's characteristics.	SoeYoon Choi, The State University of New York at New Paltz
	Human-Machine Communication: The Challenges and Opportunities of Putting Our Theories into Practice	In this presentation, I reflect upon efforts within the past four years to establish HMC as a concept, formalize HMC as an area of research, and grow the HMC community and outline what we need to do next to further develop HMC. This preconference marks our third and our largest, with the number of submissions nearly triple what they were at our inaugural post-conference in Fukuoka. The edited book Human-Machine Communication: Rethinking	Andrea Guzman, Northern Illinois University

			<p>Communication, Technology, and Ourselves is due to be published this year along with a special journal issue of Computers in Human Behavior. Other publication opportunities also are in the works. There is evidence, then, of growth and recognition of what HMC is and does. However, while we have come a long way from Fukuoka and certainly the informal workshop that preceded it in San Juan, a great deal of work is needed if HMC is to continue to make in-roads into the discipline. I discuss several goals for HMC scholars and HMC research in the near-term, including more cohesively identifying our work and our theories as HMC scholarship, promoting not only our work but also that of others within HMC, and placing increased attention on the integration of HMC into the classroom at the undergraduate and graduate levels. Finally, I also discuss areas in which HMC research and our community is in need of the most improvement, such as the study of issues regarding race in relation to HMC and the inclusion of more underrepresented groups within our ranks.</p>	
14:45 - 16:30	Session 4 Closing session	Robot as the “Mechanical Other”: Transcending Karmic Dilemma	<p>As machines continue to surpass the capacities of human minds in many ways, people are forced to question alleged ontological categories that separate humans from machines. With the desire for evolutionary mastery of the natural world, machines are viewed as an evolutionary step toward the “perfection” or “immortality” of humans by merging with machines in (1) disembodied forms or (2) embodied forms. However, these instrumental views of machines, stemming from the existential death anxiety and the hope for transcending mortality, reveals the karmic dilemma of desiring or grasping something. Instead, machines can present a revolutionary step rather than an evolutionary step toward understanding “who we are.” The path toward a continuity with machines lies not in our desire for merging with the robots, but in recognizing the arbitrary nature of all such identity categories. This radical understanding of the self-identity can be seen as a facet of enlightened experience.</p>	Min-Sun Kim, University of Hawaii at Manoa
		Voice Agent’s Sociability and User Engagement	<p>Digital assistants have been introduced in the voice-enabled device as well as embedded in the major mobile operating system in recent years. The concept of “sociability” has become central to understand the user experience, which goes far beyond the range and scope of the interaction explained by interactivity. How individuals attempt to create common ground with the artifact that they never use? Are there any distinctive communicative strategies in terms of users' individual difference? How are these behaviors related to the perception of agents?</p>	Soyun You, Sungkyunkwan University Soyoung Jung, Syracuse University Young Woo Koh,

			<p>Various digital assistants have been introduced including Amazon's Alexa, Apple's Siri, Google's Home, Samsung's Bixby and Microsoft's Cortana. As voice feature is built into the major mobile operating system as well as developed to the independent voice-enabled device, people may apply their existing perceptions toward the brand to engage in its corresponding digital assistant. What is the relationship between brand attitude and perceptions of its digital agents? To answer these questions, we planned to develop three phases of this study: interview, online survey session, and experiment.</p>	<p>Syracuse University</p> <p>Sujung Lee, Syracuse University</p>
		<p>Anthropomorphism in Human-Robot Interactions</p>	<p>The perception that an entity possesses human characteristics—referred to as anthropomorphism—is a fundamental psychological response that is based on cognitive representations typically developed during childhood. In human-robot interactions (HRI), the perception of human likeness plays a prominent role: An increasing number of robots assume social roles (e.g., as tutors or companions), and anthropomorphism is believed to facilitate the engagement with and acceptance of social robots. However, there are three issues with the concept of anthropomorphism that currently hinder progress in the field of HRI: (1) Predictors, dimensions, and outcomes of anthropomorphism have not been adequately distinguished; (2) there exists no consensus about what the essential dimensions of anthropomorphism in HRI are; and (3) the conceptual boundaries between anthropomorphism and related concepts (e.g., social presence) have not been sufficiently discussed. Our presentation addresses these issues by providing a theoretical reflection on the concept of anthropomorphism.</p>	<p>Rinaldo Kühne, University of Amsterdam</p> <p>Jochen Peter, University of Amsterdam</p> <p>A. Marthe Möller, University of Amsterdam</p>
		<p>Automated vs Human Journalism: An Experimental Test of How Automated Journalism Affects Professional News Stories</p>	<p>This experimental study seeks to uncover the uncertain effects of artificial intelligence, or narrative science, on the quality of journalism, particularly the quality of a news story. A 3 (journalistic domain: politics, sports, and finance) x 2 (type of journalism: automated vs human) mixed subjects design online survey was executed on a sample of students in a large Midwestern state university. The study found a significant difference existed between a news story generated by an automated algorithm and written by a human reporter in ratings of objectivity. Specifically, the quality of an automated story was found to be a significant predictor of whether a story is rated as more balanced or opinionated. However, that was not the case for the human written stories. Finally, a significant difference was found in the effects of type of news story—politics, finance or sports—on the quality of human but not automated journalism.</p>	<p>Yanfeng Wu, University of Toledo</p>

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