# Unintended Consequences of Disclosing Recommendations by Artificial Intelligence versus Humans on True and Fake News Believability and Engagement

H Ma, W Huang, AR Dennis

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## Abstract

ABSTRACT  
In an attempt to combat fake news, policymakers in many countries are considering mandating the disclosure of artificial intelligence (AI) recommendations of social media news articles. We used two randomized controlled experiments to investigate the effects of labeling social media news stories as recommended by AI. Our results show that an AI recommendation reduced belief in true news articles and had no material effect on belief in fake news. In contrast, a recommendation by an expert increased belief in true news articles, but had no effect for fake news articles. A friend recommendation had no effect for fake articles and inconsistent effects for true articles. Belief that an article was true led to news engagement (liking, commenting, sharing), but an AI recommendation weakened this relationship, making confirmation bias the primary factor influencing engagement. The trustworthiness of the recommender only partially explained these effects, which suggests that there are other theoretical factors at work. This study reveals that the explicit labeling of AI curation of social media news stories does not help combat fake news, but instead is likely to backfire and have unintended negative effects by decreasing the belief of and engagement with true news articles.

# Enhancing Vulnerability Prioritization in Cloud Computing Using Multi-View Representation Learning

S Ullman, S Samtani, H Zhu, B Lazarine…

Year:2024

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## Abstract

ABSTRACT  
Cybersecurity is a present and growing concern that needs to be addressed with both behavioral and design-oriented research. Public cloud providers such as Amazon Web Services and federal funding agencies such as the National Science Foundation have invested billions of dollars into developing high-performance computing resources accessible to users through configurable virtual machine (VM) images. This approach offers users the flexibility of changing and updating their environment for their computational needs. Despite the substantial benefits, users often introduce thousands of vulnerabilities by installing open-source software packages and misconfiguring file systems. Given the scale of vulnerabilities, security personnel struggle to identify and prioritize vulnerable assets for remediation. In this research, we designed a novel unsupervised deep learning-based Multi-View Combinatorial-Attentive Autoencoder (MV-CAAE) to capture multi-dimensional vulnerability data and automatically identify groups of similar vulnerable compute instances to help facilitate the development of targeted remediation strategies. We rigorously evaluated the proposed MV-CAAE against state-of-the-art methods in three technical clustering experiments. Experiment results indicate that the MV-CAAE achieves V-measure scores (metric of cluster quality) 8 percent-48 percent higher than benchmark methods. We demonstrated the practical value through a comprehensive case study by clustering vulnerable VMs and gathering qualitative feedback from experienced security professionals through semi-structured interviews. The results indicated that clustering vulnerable assets can help prioritize vulnerable instances for remediation and enhance decision-making tasks. The present design-research work also contributes to our theoretical knowledge of cyber-defense.

# Situational contingencies in susceptibility of social media to phishing: a temptation and restraint model

H Qahri-Saremi, O Turel

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<https://www.tandfonline.com/doi/abs/10.1080/07421222.2023.2196779>

## Abstract

ABSTRACT  
User susceptibility to phishing messages on social media is a growing information security concern. Contingency factors that can influence this susceptibility and the theoretical mechanisms through which they operate need more scholarly attention. To bridge this gap, we present a temptation and restraint (TR) model (a specific manifestation of the dual–system theory) of social media phishing susceptibility, which explains it as an outcome of a struggle between users’ temptation toward engaging with a social media phishing message and their cognitive and behavioral restraint against it. The balance in this struggle is a function of various situational contingencies. First, via a Delphi study, we identify four key situational contingency factors in the context of social media that can influence this balance: (1) poor sleep quality, (2) social media ostracism, (3) source likability, and (4) fear appeals. Next, via five randomized controlled experiments using an ostensible social media paradigm with social media users, we show that the TR model explains (a) why and how users engage with social media phishing messages, and (b) when users are more or less susceptible to it based on key situational contingency factors. Our findings offer a nuanced perspective on social media phishing susceptibility, elucidate the fundamental roles of situational contingencies in the genesis of social media phishing victimization, and delineate important directions for future research in this area

# Influence of media capabilities on trust in the sharing economy

A Harrison, A Mirsadikov, T Luu

Year:2023

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## Abstract

ABSTRACT  
Media capabilities influence consumers’ trust in online exchanges. However, in the sharing economy, where consumers interact with service providers through a platform, conventional models of trust must be revisited. Our research identifies how media synchronicity and anonymity influence the relative importance of institution-based trust in sharing economy exchanges. We collected data from 248 ride-hailing customers and 288 cryptocurrency users to test a moderated mediation model of trust. We find that in the sharing economy media synchronicity and anonymity lead customers to develop trust toward service providers directly and undermine the impact of institutional trust mechanisms. This indicates that in sharing economy exchanges, trust can be built directly with the service provider, or alternatively, indirectly through the platform. Consequently, organizations in the sharing economy can strategically design their systems to engender trust by choosing between (1) emphasizing the platform’s reputation or (2) encouraging direct communication between the consumer and service providers.

# Improving phishing reporting using security gamification

ML Jensen, RT Wright, A Durcikova…

Year:2022

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2022.2096551>

## Abstract

ABSTRACT  
Phishing is an increasing threat that causes billions in losses and damage to productivity, trade secrets, and reputations each year. This work explores how security gamification techniques can improve phishing reporting. We contextualized the cognitive evaluation theory (CET) as a kernel theory and constructed a prototype phishing reporting system. With three experiments in a simulated work setting, we tested gamification elements of validation, attribution, incentives, and public presentation for improvements in experiential (e.g., motivation) and instrumental outcomes (e.g., hits and false positives) in phishing reporting. Our findings suggest public attribution with rewards and punishments best balance the competing necessities of accuracy with widespread reporting. Furthermore, our results demonstrate the unique benefits of security gamification to phishing reporting over and above other phishing mitigation techniques (e.g., training and warnings). However, we also noted that unintended consequences in false alarms might arise from shifts in motivation resulting from public display of incentives. These findings suggest that carefully calibrated external incentives (rather than intrinsic rewards) are most likely to improve the ancillary task of phishing reporting.

# To be or not to be… human? Theorizing the role of human-like competencies in conversational artificial intelligence agents

S Chandra, A Shirish, SC Srivastava

Year:2022

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## Abstract

ABSTRACT  
Driven by the need to provide continuous, timely, and efficient customer service, firms are constantly experimenting with emerging technological solutions. In recent times firms have shown an increased interest in designing and implementing artificial intelligence (AI)-based interactional technologies, such as conversational AI agents and chatbots, that obviate the need for having human service agents for the provision of customer service. However, the business impact of conversational AI is contingent on customers using and adequately engaging with these tools. This engagement depends, in turn, on conversational AI’s similarity, or likeness to the human beings it is intended to replace. Businesses therefore need to understand what human-like characteristics and competencies should be embedded in customer-facing conversational AI agents to facilitate smooth user interaction. This focus on “human-likeness” for facilitating user engagement in the case of conversational AI agents is in sharp contrast to most prior information systems (IS) user engagement research, which is predicated on the “instrumental value” of information technology (IT). Grounding our work in the individual human competency and media naturalness literatures, we theorize the key role of human-like interactional competencies in conversational AI agents—specifically, cognitive, relational, and emotional competencies—in facilitating user engagement. We also hypothesize the mediating role of user trust in these relationships. Following a sequential mixed methods approach, we use a quantitative two-wave, survey-based study to test our model. We then examine the results in light of findings from qualitative follow-up interviews with a sampled set of conversational AI users. Together, the results offer a nuanced understanding of desirable human-like competencies in conversational AI agents and the salient role of user trust in fostering user engagement with them. We also discuss the implications of our study for research and practice.

# The power of introverts: Personality and intelligence in virtual teams

AS Dennis, JB Barlow, AR Dennis

Year:2022

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2021.2023408>

## Abstract

ABSTRACT  
Teams have increasingly turned to computer-mediated communication (CMC) to work when team members cannot all be in the same physical space at the same time, leading to the need to better understand what influences group performance in these settings. We know that team member intelligence and personality affect team performance when teams work face-to-face, but their effects are not yet clear when teams use text-based CMC, which has different characteristics than face-to-face communication. We conducted a laboratory study of 61 teams working on a decision-making task using text-based CMC. We found that team mean extraversion had a large negative effect, and team mean neuroticism had a medium-sized negative effect on team performance. Team mean intelligence had no effect. We recommend that managers consider the effects of extraversion when selecting team members and focus on selecting more introverted team members if the team is likely to extensively use text-based CMC. Likewise, managers should consider extraversion when designing teamwork processes for virtual teams; if a team has many members who are high in extraversion, the team should use text-based CMC sparingly. We also recommend that researchers use extraversion as a control factor in future research studying text-based CMC because extraversion has a large effect on team outcomes and, left uncontrolled, could increase unexplained error variance and overshadow the focus of the research study.

# Improving imbalanced machine learning with neighborhood-Informed synthetic sample placement

M Nasir, A Dag, S Simsek, A Ivanov…

Year:2022

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2022.2127453>

## Abstract

ABSTRACT  
Machine learning is widely used in information systems design. Yet, training algorithms on imbalanced datasets may severely affect performance on unseen data. For example, in some cases in healthcare, fintech, or cybersecurity contexts, certain subclasses are difficult to learn because they are underrepresented in training data. Our study offers a flexible and efficient solution based on a new synthetic average neighborhood sampling algorithm (SANSA), which, in contrast to other solutions, introduces a novel “placement” parameter that can be tuned to adapt to each dataset’s unique manifestation of the imbalance. This package can be downloaded for R  
1. We tested SANSA against seven existing sampling methods used in conjunction with the four most frequently used machine learning models trained on 14 benchmark datasets. Our results provide suggestive evidence that SANSA offers a feasible solution to the imbalance problem for most datasets. Our findings provide practical recommendations for how SANSA can be effectively implemented while reducing the complexity level of an imbalanced learning pipeline.

# Trust change in information technology products

DH McKnight, P Liu, BT Pentland

Year:2020

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2020.1831772>

## Abstract

ABSTRACT  
We examine why trust change occurs when potential users first encounter news about a specific technology. We propose personal perceptions and three cognitive outcomes—attention, sensemaking, and threshold—affect trust change in educated young adults surveyed regarding a technology product. We find the outcomes of attention, sensemaking, and threshold positively affect trust change, while most hypothesized personal perceptions of the technology (e.g., reputation) do not predict trust change. For research, this implies scholars should focus more on cognitive outcomes of mental news brief processing than on technology perceptions. Our results also imply that research should examine other key dependent variables the way we studied trust change (e.g., “intention-to-use change”—to produce a more dynamic picture of how people adopt a technology). For practice, our data imply that tech companies can counter initial bad news about a technology by quickly providing strong positive news items to repair trust in that technology.

# The impact of chatbot conversational skill on engagement and perceived humanness

RM Schuetzler, GM Grimes…

Year:2020

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2020.1790204>

## Abstract

ABSTRACT  
Conversational agents (CAs)—frequently operationalized as chatbots—are computer systems that leverage natural language processing to engage in conversations with human users. CAs are often operationalized as chatbots which are used for many applications including technical support, customer service, and digital personal assistants. Despite their widespread use, little research to date has investigated how improving the conversational skill of a CA impacts user perceptions of the agent. To elucidate this relationship, this research uses Social Presence Theory to describe how conversational skill influences perceived social presence and ultimately anthropomorphism of a chatbot. We conducted a series of studies in which 450 participants interacted with CAs exhibiting varying levels of conversational skill. We show that people perceive a more skilled CA to be more socially present and anthropomorphic than a less skilled CA. This research advances the knowledge of computer-human interface in information systems, as CA research to date has largely focused on the technical challenges rather than the behavioral questions of how users interact with CAs.

# Detecting anomalous online reviewers: An unsupervised approach using mixture models

N Kumar, D Venugopal, L Qiu…

Year:2019

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2019.1661089>

## Abstract

Abstract  
Online reviews play a significant role in influencing decisions made by users in day-to-day life. The presence of reviewers who deliberately post fake reviews for financial or other gains, however, negatively impacts both users and businesses. Unfortunately, automatically detecting such reviewers is a challenging problem since fake reviews do not seem out-of-place next to genuine reviews. In this paper, we present a fully unsupervised approach to detect anomalous behavior in online reviewers. We propose a novel hierarchical approach for this task in which we (1) derive distributions for key features that define reviewer behavior, and (2) combine these distributions into a finite mixture model. Our approach is highly generalizable and it allows us to seamlessly combine both univariate and multivariate distributions into a unified anomaly detection system. Most importantly, it requires no explicit labeling (spam/not spam) of the data. Our newly developed approach outperforms prior state-of-the-art unsupervised anomaly detection approaches.

# Generating business intelligence through social media analytics: Measuring brand personality with consumer-, employee-, and firm-generated content

Y Hu, A Xu, Y Hong, D Gal, V Sinha…

Year:2019

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2019.1628908>

## Abstract

Abstract  
Social media platforms provide an enormous public repository of textual data from which valuable information can be extracted. We show that firms can extract business intelligence from social media data bearing on an important business application, measuring brand personality. Specifically, we develop a text analytics framework that integrates different distinct sources of social media data generated by consumers, employees, and firms, to measure brand personality. Based on Elastic-Net regression analyses of a large corpus of social media data, including self-descriptions of 1,996,214 consumers who followed the sample of brands on social media, 312,400 employee reviews of the brands’ firms, and 680,056 brand official tweets, we develop a brand personality model that achieves prediction accuracy as high as 0.78. Among key insights, we find that the profile of individuals who choose to associate with brands on social media is an important predictor of brand personality; this provides the first real-world evidence for a consumer identity-brand personality link. We also identify a link between an organization’s internal corporate environment as perceived by employees and brand personality as judged by consumers. We further illuminate the practical implication of our predictive model by building a cloud-based information system that allows managers and analysts to explore and track personality of their own brands and their competitors’ brands.

# Detecting review manipulation on online platforms with hierarchical supervised learning

N Kumar, D Venugopal, L Qiu…

Year:2018

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2018.1440758>

## Abstract

Abstract  
Opinion spammers exploit consumer trust by posting false or deceptive reviews that may have a negative impact on both consumers and businesses. These dishonest posts are difficult to detect because of complex interactions between several user characteristics, such as review velocity, volume, and variety. We propose a novel hierarchical supervised-learning approach to increase the likelihood of detecting anomalies by analyzing several user features and then characterizing their collective behavior in a unified manner. Specifically, we model user characteristics and interactions among them as univariate and multivariate distributions. We then stack these distributions using several supervised-learning techniques, such as logistic regression, support vector machine, and k-nearest neighbors yielding robust meta-classifiers. We perform a detailed evaluation of methods and then develop empirical insights. This approach is of interest to online business platforms because it can help reduce false reviews and increase consumer confidence in the credibility of their online information. Our study contributes to the literature by incorporating distributional aspects of features in machine-learning techniques, which can improve the performance of fake reviewer detection on digital platforms.

# Leveraging financial social media data for corporate fraud detection

W Dong, S Liao, Z Zhang

Year:2018

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2018.1451954>

## Abstract

Abstract  
Corporate fraud can lead to significant financial losses and cause immeasurable damage to investor confidence and the overall economy. Detection of such frauds is a time-consuming and challenging task. Traditionally, researchers have been relying on financial data and/or textual content from financial statements to detect corporate fraud. Guided by systemic functional linguistics (SFL) theory, we propose an analytic framework that taps into unstructured data from financial social media platforms to assess the risk of corporate fraud. We assemble a unique data set including 64 fraudulent firms and a matched sample of 64 nonfraudulent firms, as well as the social media data prior to the firm’s alleged fraud violation in Accounting and Auditing Enforcement Releases (AAERs). Our framework automatically extracts signals such as sentiment features, emotion features, topic features, lexical features, and social network features, which are then fed into machine learning classifiers for fraud detection. We evaluate and compare the performance of our algorithm against baseline approaches using only financial ratios and language-based features respectively. We further validate the robustness of our algorithm by detecting leaked information and rumors, testing the algorithm on a new data set, and conducting an applicability check. Our results demonstrate the value of financial social media data and serve as a proof of concept of using such data to complement traditional fraud detection methods.

# Training to mitigate phishing attacks using mindfulness techniques

ML Jensen, M Dinger, RT Wright…

Year:2017

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2017.1334499>

## Abstract

Abstract  
Phishing attacks are at a record high and are causing billions of dollars in losses. To mitigate phishing’s impact, organizations often use rule-based training to teach individuals to identify certain cues or apply a set of rules to avoid phishing attacks. The rule-based approach has improved organizational defenses against phishing; however, regular repetition of rule-based training may not yield increasing resistance to attacks. To expand the toolkit available to combat phishing attacks, we used mindfulness theory to develop a novel training approach that can be performed after individuals are familiar with rule-based training. The mindfulness approach teaches individuals to dynamically allocate attention during message evaluation, increase awareness of context, and forestall judgment of suspicious messages—techniques that are critical to detecting phishing attacks in organizational settings, but are unaddressed in rule-based instruction. To evaluate the efficacy of our approach, we compared rule-based and mindfulness training programs in a field study at a U.S. university that involved 355 students, faculty, and staff who were familiar with phishing attacks and received regular rule-based guidance. To evaluate the robustness of the training, we delivered each program in text-only or text-plus-graphics formats. Ten days later, we conducted a phishing attack on participants that used both generic and customized phishing messages. We found that participants who received mindfulness training were better able to avoid the phishing attack. In particular, improvement was observed for participants who were already confident in their detection ability and those who reported low e-mail mindfulness and low perceptions of Internet risk. This work introduces and provides evidence supporting a new approach that may be used to develop anti-phishing training.

# Using IT design to prevent cyberbullying

PB Lowry, GD Moody, S Chatterjee

Year:2017

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## Abstract

Abstract  
The rise of social media has fostered increasing instances of deviant behavior. Arguably, the most notable of these is cyberbullying (CB), which is an increasing global concern because of the social and financial ramifications. This has necessitated a new line of research aimed at understanding and preventing CB. Although much progress has been made in understanding CB, little is known about how to prevent it, especially through the information technology (IT) design. Based on the need for a better causal theory and more effective empirical methods to investigate and mitigate this phenomenon, we leverage the control balance theory (CBT) for system design. Our model examines the causes of CB from several novel angles, including (1) the strong nonlinear influence of control imbalances on CB, and (2) using the concept of fit to understand how different design features of information technology artifacts influence factors such as deindividuation and accountability, thus affecting control imbalance. Using an innovative factorial survey method that enabled us to manipulate IT design features to obtain a nuanced view, we tested our model with 507 adults and found strong support for our model. The results show that IT design features create a strong CB opportunity for individuals who perceive that they are controlled by others. Whether this perception is real or imagined, it creates a sense of vulnerability, prompting them to engage in CB. We can thus propose specific IT design feature manipulations that can be used to discourage CB. These results should have salient implications for researchers and social media designers, especially in developing social media networks that are safe, supportive, responsible, and constructive.

# Winning back technology disadopters: testing a technology readoption model in the context of mobile internet services

X Xu, JYL Thong, KY Tam

Year:2017

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2017.1297172>

## Abstract

Abstract  
We investigate how information and communication technology (ICT) service providers can win back disadopters of an earlier generation of technology when a new technology generation appears on the market. Integrating prior research on consumers’ defensive bias, knowledge accessibility, diffusion of innovation, and technology adoption, we developed a model to predict disadopters’ intention to readopt a technology. We postulate that the primary reason for disadoption moderates the impacts of both the drivers of readoption (perceived superiority, effort expectancy, price value of the new technology generation, and social influence) and the characteristics of prior usage experience with the disadopted earlier technology generation (duration of disadoption, tenure with the old generation, and usage intensity of the old generation) on readoption intention. We tested our technology readoption model in the context of mobile Internet services. Data were collected from 274 disadopters of an earlier generation of mobile Internet services before the advent of the third generation (3G) technology. The results supported most of our hypotheses. These findings have significant theoretical and practical implications, especially for firms interested in winning back technology disadopters. Finally, we present an agenda for further research into technology readoption.

# Untangling a web of lies: Exploring automated detection of deception in computer-mediated communication

S Ludwig, T Van Laer, K De Ruyter…

Year:2016

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2016.1205927>

## Abstract

Abstract  
Safeguarding organizations against opportunism and severe deception in computer-mediated communication (CMC) presents a major challenge to chief information officers and information technology managers. New insights into linguistic cues of deception derive from the speech acts innate to CMC. Applying automated text analysis to archival e-mail exchanges in a CMC system as part of a reward program, we assess the ability of word use (micro level), message development (macro level), and intertextual exchange cues (meta level) to detect severe deception by business partners. We empirically assess the predictive ability of our framework using an ordinal multilevel regression model. Results indicate that deceivers minimize the use of referencing and self-deprecation but include more superfluous descriptions and flattery. Deceitful channel partners also overstructure their arguments and rapidly mimic the linguistic style of the account manager across dyadic e-mail exchanges. Thanks to its diagnostic value, the proposed framework can support firms’ decision making and guide compliance monitoring system development.

# Computer-mediated deception: Strategies revealed by language-action cues in spontaneous communication

SM Ho, JT Hancock, C Booth, X Liu

Year:2016

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2016.1205924>

## Abstract

Abstract  
Computer-mediated deception threatens the security of online users’ private and personal information. Previous research confirms that humans are bad lie detectors, while demonstrating that certain observable linguistic features can provide crucial cues to detect deception. We designed and conducted an experiment that creates spontaneous deception scenarios in an interactive online game environment. Logistic regression, and certain classification methodologies were applied to analyzing data collected during fall 2014 through spring 2015. Our findings suggest that certain language-action cues (e.g., cognitive load, affective process, latency, and wordiness) reveal patterns of information behavior manifested by deceivers in spontaneous online communication. Moreover, computational approaches to analyzing these language-action cues can provide significant accuracy in detecting computer-mediated deception.

# Information systems for deception detection

JF Nunamaker Jr, JK Burgoon…

Year:2016

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2016.1205928>

## Abstract

# Detecting fraudulent behavior on crowdfunding platforms: The role of linguistic and content-based cues in static and dynamic contexts

M Siering, JA Koch, AV Deokar

Year:2016

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2016.1205930>

## Abstract

Abstract  
Crowdfunding platforms offer founders the possibility to collect funding for project realization. With the advent of these platforms, the risk of fraud has risen. Fraudulent founders provide inaccurate information or pretend interest toward a project. Within this study, we propose deception detection support mechanisms to address this novel type of Internet fraud. We analyze a sample of fraudulent and nonfraudulent projects published at a leading crowdfunding platform. We examine whether the analysis of dynamic communication during the funding period is valuable for identifying fraudulent behavior—apart from analyzing only the static information related to the project. We investigate whether content-based cues and linguistic cues are valuable for fraud detection. The selection of cues and the subsequent feature engineering is based on theories in areas of communication, psychology, and computational linguistics. Our results should be helpful to the stakeholders of crowdfunding platforms and researchers of fraud detection.

# What online reviewer behaviors really matter? Effects of verbal and nonverbal behaviors on detection of fake online reviews

D Zhang, L Zhou, JL Kehoe, IY Kilic

Year:2016

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2016.1205907>

## Abstract

Abstract  
The value and credibility of online consumer reviews are compromised by significantly increasing yet difficult-to-identify fake reviews. Extant models for automated online fake review detection rely heavily on verbal behaviors of reviewers while largely ignoring their nonverbal behaviors. This research identifies a variety of nonverbal behavioral features of online reviewers and examines their relative importance for the detection of fake reviews in comparison to that of verbal behavioral features. The results of an empirical evaluation using real-world online reviews reveal that incorporating nonverbal features of reviewers can significantly improve the performance of online fake review detection models. Moreover, compared with verbal features, nonverbal features of reviewers are shown to be more important for fake review detection. Furthermore, model pruning based on a sensitivity analysis improves the parsimony of the developed fake review detection model without sacrificing its performance.

# More than meets the eye: How oculometric behaviors evolve over the course of automated deception detection interactions

JG Proudfoot, JL Jenkins, JK Burgoon…

Year:2016

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2016.1205929>

## Abstract

Abstract  
Eye-tracking technology has exhibited promise for identifying deception in automated screening systems. Prior deception research using eye trackers has focused on the detection and interpretation of brief oculometric variations in response to stimuli (e.g., specific images or interview questions). However, more research is needed to understand how variations in oculometric behaviors evolve over the course of an interaction with a deception detection system. Using latent growth curve modeling, we tested hypotheses explaining how two oculometric behaviors—pupil dilation and eye-gaze fixation patterns—evolve over the course of a system interaction for three groups of participants: deceivers who see relevant stimuli (i.e., stimuli pertinent to their deception), deceivers who do not see relevant stimuli, and truth-tellers. The results indicate that the oculometric indicators of deceivers evolve differently over the course of an interaction, and that these trends are indicative of deception regardless of whether relevant stimuli are shown.

# Examining hacker participation length in cybercriminal internet-relay-chat communities

V Benjamin, B Zhang, JF Nunamaker Jr…

Year:2016

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2016.1205918>

## Abstract

Abstract  
To further cybersecurity, there is interest in studying online cybercriminal communities to learn more about emerging cyber threats. Literature documents the existence of many online Internet Relay Chat (IRC) cybercriminal communities where cybercriminals congregate and share hacking tools, malware, and more. However, many cybercriminal community participants appear unskilled and have fleeting interests, making it difficult to detect potential long-term or key participants. This is a challenge for researchers and practitioners to quickly identify cybercriminals that may provide credible threat intelligence. Thus, we propose a computational approach to analyze cybercriminals IRC communities in order to identify potential long-term and key participants. We use the extended Cox model to scrutinize cybercriminal IRC participation for better understanding of behaviors exhibited by cybercriminals of importance. Results indicate that key cybercriminals may be quickly identifiable by assessing the scale of their interaction and networks with other participants.

# The behavioral roots of information systems security: Exploring key factors related to unethical IT use

S Chatterjee, S Sarker, JS Valacich

Year:2015

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2014.1001257>

## Abstract

Abstract  
Unethical information technology (IT) use, related to activities such as hacking, software piracy, phishing, and spoofing, has become a major security concern for individuals, organizations, and society in terms of the threat to information systems (IS) security. While there is a growing body of work on this phenomenon, we notice several gaps, limitations, and inconsistencies in the literature. In order to further understand this complex phenomenon and reconcile past findings, we conduct an exploratory study to uncover the nomological network of key constructs salient to this phenomenon, and the nature of their interrelationships. Using a scenario-based study of young adult participants, and both linear and nonlinear analyses, we uncover key nuances of this phenomenon of unethical IT use. We find that unethical IT use is a complex phenomenon, often characterized by nonlinear and idiosyncratic relationships between the constructs that capture it. Overall, ethical beliefs held by the individuals, along with economic, social, and technological considerations are found to be relevant to this phenomenon. In terms of practical implications, these results suggest that multiple interventions at various levels may be required to combat this growing threat to IS security.

# The last research mile: Achieving both rigor and relevance in information systems research

JF Nunamaker Jr, RO Briggs, DC Derrick…

Year:2015

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2015.1094961>

## Abstract

Abstract  
From our desk chairs it may be tempting to work up an idea, build a quick prototype, test it in a lab, and say, “Our work here is done; the rest is merely details.” More scholarly knowledge awaits discovery, however, by researchers who shepherd an information systems (IS) solution through the last research mile, that is, through successful transition to the workplace. Going the last research mile means using scientific knowledge and methods to address important unsolved classes of problems for real people with real stakes in the outcomes. The last research mile proceeds in three stages: proof-of-concept research to demonstrate the functional feasibility of a solution; proof-of-value research to investigate whether a solution can create value across a variety of conditions; and proof-of-use research to address complex issues of operational feasibility. The last research mile ends only when practitioners routinely use a solution in the field. We argue that going the last research mile negates the assumption that one must trade off rigor and relevance, showing it to be it a false dilemma. Systems researchers who take their solutions through the last research mile may ultimately have the greatest impact on science and society. We demonstrate the last research mile with cases from our own work and the work of others spanning more than forty years.

# Exploring knowledge filtering processes in electronic networks of practice

KJ Fadel, TO Meservy, ML Jensen

Year:2015

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2014.1001262>

## Abstract

Abstract  
Electronic networks of practice (ENPs) have become an important mechanism for knowledge exchange among loosely connected individuals who share common knowledge interests. While prior research has explored factors that influence knowledge contribution in such networks, less is understood about the process by which individuals evaluate and ultimately adopt knowledge from ENPs. This study examines the process of knowledge filtering in online ENP forums. Drawing from dual process and information-evaluation theories, we hypothesize that performance on a knowledge-filtering task will be influenced by the constancy and directionality of search patterns employed by knowledge seekers. Hypotheses are tested in an experiment that utilized an eye tracker to record gaze data from professional software developers using an experimental ENP forum. By combining information-evaluation and dual process theory perspectives, our results deepen the insights offered in extant information-processing literature by showing that higher filtering accuracy is associated with (a) constant evaluation of some types of information attributes (solution content) but not others (peripheral cues), and (b) increasing attribute-based processing over time.

# Autonomous scientifically controlled screening systems for detecting information purposely concealed by individuals

NW Twyman, PB Lowry, JK Burgoon…

Year:2014

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2014.995535>

## Abstract

Abstract  
Screening individuals for concealed information has traditionally been the purview of professional interrogators investigating crimes. However, the ability to detect when a person is hiding important information would have high value in many other applications if results could be reliably obtained using an automated and rapid interviewing system. Unfortunately, this ideal has thus far been stymied by practical limitations and inadequate scientific control in current interviewing systems. This study proposes a new class of systems, termed autonomous scientifically controlled screening systems (ASCSS), designed to detect individuals’ purposely hidden information about target topics of interest. These hidden topics of interest could cover a wide range, including knowledge of concealed weapons, privacy violations, fraudulent organizational behavior, organizational security policy violations, preemployment behavioral intentions, organizational insider threat, leakage of classified information, or even consumer product use information. ASCSS represent a systematic synthesis of structured interviewing, orienting theory, defensive response theory, noninvasive psychophysiological measurement, and behavioral measurement. To evaluate and enhance the design principles, we built a prototype automated screening kiosk system and configured it for a physical security screening scenario in which participants constructed and attempted to smuggle a fake improvised explosive device. The positive results provide support for the proposition that ASCSS may afford more widespread application of credibility assessment screening systems.

# A rigidity detection system for automated credibility assessment

NW Twyman, AC Elkins, JK Burgoon…

Year:2014

<https://www.tandfonline.com/doi/abs/10.2753/MIS0742-1222310108>

## Abstract

Abstract  
Credibility assessment is an area in which information systems research can make a major impact. This paper reports on two studies investigating a system solution for automatic, noninvasive detection of rigidity for automated interviewing. Kinesic rigidity has long been a phenomenon of interest in the credibility assessment literature, but until now was infeasible as a veracity indicator in practical use cases. An initial study unexpectedly revealed the occurrence of rigidity in a highly controlled concealed information test setting, prompting the design and implementation of an automated rigidity detection system for interviewing. A unique experimental evaluation supported the system concept. The results of the second study confirmed the kinesic rigidity found in the first, and provided further theoretical insights explaining the rigidity phenomenon. Although additional research is needed, the evidence from this investigation suggests that credibility assessment can benefit from a rigidity detection system.

# Trusting humans and avatars: A brain imaging study based on evolution theory

R Riedl, PNC Mohr, PH Kenning, FD Davis…

Year:2014

<https://www.tandfonline.com/doi/abs/10.2753/MIS0742-1222300404>

## Abstract

Abstract  
Avatars, as virtual humans possessing realistic faces, are increasingly used for social and economic interaction on the Internet. Research has already determined that avatar-based communication may increase perceived interpersonal trust in anonymous online environments. Despite this trust-inducing potential of avatars, however, we hypothesize that in trust situations, people will perceive human faces differently than they will perceive avatar faces. This prediction is based on evolution theory, because throughout human history the majority of interaction among people has taken place in face-to-face settings. Therefore, unlike perception of an avatar face, perception of a human face and the related trustworthiness discrimination abilities must be part of the genetic makeup of humans. Against this background, we conducted a functional magnetic resonance imaging experiment based on a multiround trust game to gain insight into the differences and similarities of interactions between humans versus human interaction with avatars. Our results indicate that (1) people are better able to predict the trustworthiness of humans than the trustworthiness of avatars; (2) decision making about whether or not to trust another actor activates the medial frontal cortex significantly more during interaction with humans, if compared to interaction with avatars; this brain area is of paramount importance for the prediction of other individuals' thoughts and intentions (mentalizing), a notably important ability in trust situations; and (3) the trustworthiness learning rate is similar, whether interacting with humans or avatars. Thus, the major implication of this study is that although interaction on the Internet may have benefits, the lack of real human faces in communication may serve to reduce these benefits, in turn leading to reduced levels of collaboration effectiveness.

# The drivers in the use of online whistle-blowing reporting systems

PB Lowry, GD Moody, DF Galletta…

Year:2013

<https://www.tandfonline.com/doi/abs/10.2753/MIS0742-1222300105>

## Abstract

Abstract  
Online whistle-blowing reporting systems (WBRS) have become increasingly prevalent channels for reporting organizational failures. The Sarbanes-Oxley Act and similar international laws now require firms to establish whistle-blowing (WB) procedures and WBRSs, increasing the importance of WB research and applications. Although the literature has addressed conventional WB behavior, it has not explained or measured the use of WBRSs in online contexts that could significantly alter elements of anonymity, trust, and risk for those using such reporting tools. This study proposes the WBRS model (WBRS-M). Using actual working professionals in an online experiment of hypothetical scenarios, we empirically tested the WBRS-M for reporting computer abuse and find that anonymity, trust, and risk are highly salient in the WBRS context. Our findings suggest that we have an improved WB model with increased explanatory power. Organizations can make WB less of a professional taboo by enhancing WBRS users' perceptions of trust and anonymity. We also demonstrate that anonymity means more than the mere lack of identification, which is not as important in this context as other elements of anonymity.

# Credibility of anonymous online product reviews: A language expectancy perspective

ML Jensen, JM Averbeck, Z Zhang…

Year:2013

<https://www.tandfonline.com/doi/abs/10.2753/mis0742-1222300109>

## Abstract

Abstract  
Online reviews play a significant role in forming and shaping perceptions about a product. With the credibility of online reviewers a frequent question, this research investigates how potential buyers assess the credibility of anonymous reviewers. Technology separates the reviewer from the review, and potential buyers are left to rely on characteristics of the review itself to determine the credibility of the reviewer. By extending the language expectancy theory to the online setting, we develop hypotheses about how expectancy violations of lexical complexity, two-sidedness (highlighting positive and negative aspects of a product), and affect intensity influence credibility attributions. We present an experiment in which favorable experimental reviews were generated based on actual reviews for a digital camera. The results indicate that two-sidedness caused a positive expectancy violation resulting in greater credibility attribution. High affect intensity caused a negative expectancy violation resulting in lower credibility attribution. Finally, high reviewer credibility significantly improved perceptions of product quality. Our results demonstrate the importance of expectancies and violations when attributing credibility to anonymous individuals. Even small expectancy violations can meaningfully influence reviewer credibility and perceptions of products.

# Effects of automated and participative decision support in computer-aided credibility assessment

ML Jensen, PB Lowry, JL Jenkins

Year:2011

<https://www.tandfonline.com/doi/abs/10.2753/MIS0742-1222280107>

## Abstract

Abstract  
Historically, inaccurate credibility assessments have resulted in tremendous costs to businesses and to society. Recent research offers unobtrusive credibility assessment aids as a solution; however, the accuracy of these decision aids is inadequate, and users often resist accepting the aids' recommendations. We follow the principles of signal detection theory to improve the accuracy of recommendations in computer-aided credibility assessment by combining automated and participatory decision support. We also leverage participation in decision-making theory to explain and predict an increased acceptance of assessment aid recommendations when perceptual cues are elicited from users. Based on these two theories, we design and test a hybrid decision aid to perform automated linguistic analysis and to elicit and analyze perceptual cues from an observer. Results from a laboratory experiment indicate that decision aids that use linguistic and perceptual cues offer more accurate recommendations than aids that use only one type of cue. Automatic analysis of linguistic cues improved both the decision aid's recommendations and the users' credibility assessment accuracy. Challenging the generalizability of past findings, the elicitation of perceptual cues did not improve the decision aid's recommendations or the users' assessment accuracy. Elicitation of perceptual cues, however, did improve user acceptance of the decision aid's recommendations. These findings provide guidance for future development of credibility assessment decision aids.

# Privacy concerns versus desire for interpersonal awareness in driving the use of self-disclosure technologies: The case of instant messaging in two cultures

PB Lowry, J Cao, A Everard

Year:2011

<https://www.tandfonline.com/doi/abs/10.2753/MIS0742-1222270406>

## Abstract

Abstract  
Social computing technologies typically have multiple features that allow users to reveal their personal information to other users. Such self-disclosure (SD) behavior is generally considered positive and beneficial in interpersonal communication and relationships. Using a newly proposed model based on social exchange theory, this paper investigates and empirically validates the relationships between SD technology use and culture. In particular, we explore the effects of culture on information privacy concerns and the desire for online interpersonal awareness, which influence attitudes toward, intention to use, and actual use of SD technologies. Our model was tested using arguably the strongest social computing technology for online SD—instant messaging (IM)—with users from China and the United States. Our findings reveal that cross-cultural dimensions are significant predictors of information privacy concerns and desire for online awareness, which are, in turn, found to be predictors of attitude toward, intention to use, and actual use of IM. Overall, our proposed model is applicable to both cultures. Our findings enhance the theoretical understanding of the effects of culture and privacy concerns on SD technologies and provide practical suggestions for developers of SD technologies, such as adding additional control features to applications.

# Embodied conversational agent-based kiosk for automated interviewing

JF Nunamaker, DC Derrick, AC Elkins…

Year:2011

<https://www.tandfonline.com/doi/abs/10.2753/MIS0742-1222280102>

## Abstract

Abstract  
We have created an automated kiosk that uses embodied intelligent agents to interview individuals and detect changes in arousal, behavior, and cognitive effort by using psychophysiological information systems. In this paper, we describe the system and propose a unique class of intelligent agents, which are described as Special Purpose Embodied Conversational Intelligence with Environmental Sensors (SPECIES). SPECIES agents use heterogeneous sensors to detect human physiology and behavior during interactions, and they affect their environment by influencing human behavior using various embodied states (i.e., gender and demeanor), messages, and recommendations. Based on the SPECIES paradigm, we present three studies that evaluate different portions of the model, and these studies are used as foundational research for the development of the automated kiosk. The first study evaluates human-computer interaction and how SPECIES agents can change perceptions of information systems by varying appearance and demeanor. Instantiations that had the agents embodied as males were perceived as more powerful, while female embodied agents were perceived as more likable. Similarly, smiling agents were perceived as more likable than neutral demeanor agents. The second study demonstrated that a single sensor measuring vocal pitch provides SPECIES with environmental awareness of human stress and deception. The final study ties the first two studies together and demonstrates an avatar-based kiosk that asks questions and measures the responses using vocalic measurements.

# The influence of experiential and dispositional factors in phishing: An empirical investigation of the deceived

RT Wright, K Marett

Year:2010

<https://www.tandfonline.com/doi/abs/10.2753/MIS0742-1222270111>

## Abstract

Abstract  
Phishing has been a major problem for information systems managers and users for several years now. In 2008, it was estimated that phishing resulted in close to $50 billion in damages to U.S. consumers and businesses. Even so, research has yet to explore many of the reasons why Internet users continue to be exploited. The goal of this paper is to better understand the behavioral factors that may increase one's susceptibility for complying with a phisher's request for personal information. Using past research on deception detection, a research model was developed to help explain compliant phishing responses. The model was tested using a field study in which each participant received a phishing e-mail asking for sensitive information. It was found that four behavioral factors were influential as to whether the phishing e-mails were answered with sensitive information. The paper concludes by suggesting that the behavioral aspect of susceptible users be integrated into the current tools and materials used in antiphishing efforts.

# Technology dominance in complex decision making: The case of aided credibility assessment

ML Jensen, PB Lowry, JK Burgoon…

Year:2010

<https://www.tandfonline.com/doi/abs/10.2753/mis0742-1222270108>

## Abstract

Abstract  
Decision aids have long been an important source of help in making structured decisions. However, decision support for more complex problems has been much more difficult to create. Decision aids are now being developed for very complex problems, and their effects among low- and high-task-knowledge individuals are still being explored. One such task is credibility assessment, in which message recipients or observers must determine a message's veracity and trustworthiness. Credibility assessment is made difficult by lack of constraints, hidden or incomplete information, and mistaken beliefs of the assessor.  
The theory of technology dominance (TTD) proposes that technology is most effectively applied in intelligent decision aids when an experienced user is paired with a sophisticated decision aid. This work examines TT D in the complex task of credibility assessment. To assist in credibility assessment, we created a decision aid that augments the capabilities of the user—whether novice or professional. Using hypotheses based on TT D, we tested the decision aid using high-stakes deception in recorded interviews and involved both student (novice) and law enforcement (professional) users. Both professionals and novices improved their assessment accuracy by using the decision aid. Consistent with TTD, novices were more reliant on the decision aid than were professionals. However, contrary to TTD, there was no significant difference in the way novices and professionals interacted with the system, and the decision aid was not more beneficial to professionals. Novices and professionals frequently discounted the aid's recommendations, and in many cases professionals did not view explanations when the decision aid contradicted their assessments. Potential reasons for these findings, as well as limitations and future research opportunities, are discussed.

# The CMC interactivity model: How interactivity enhances communication quality and process satisfaction in lean-media groups

PB Lowry, NC Romano, JL Jenkins…

Year:2009

<https://www.tandfonline.com/doi/abs/10.2753/MIS0742-1222260107>

## Abstract

Abstract  
Process satisfaction is one important determinant of work group collaborative system adoption, continuance, and performance. We explicate the computermediated communication (CMC) interactivity model (CMCIM) to explain and predict how interactivity enhances communication quality that results in increased process satisfaction in CMC-supported work groups. We operationalize this model in the challenging context of very large groups using extremely lean CMC. We tested it with a rigorous field experiment and analyzed the results with the latest structural equation modeling techniques. Interactivity and communication quality dramatically improved for very large groups using highly lean CMC (audience response systems) over face-to-face groups. Moreover, CMC groups had fewer negative status effects and higher process satisfaction than face-to-face groups. The practical applications of lean CMC rival theoretical applications in importance because lean CMC is relatively inexpensive and requires minimal training and support compared to other media. The results may aid large global work group continuance, satisfaction, and performance in systems, product and strategy development, and other processes in which status effects and communication issues regularly have negative influences on outcomes.

# Individual swift trust and knowledge-based trust in face-to-face and virtual team members

LP Robert, AR Denis, YTC Hung

Year:2009

<https://www.tandfonline.com/doi/abs/10.2753/MIS0742-1222260210>

## Abstract

Abstract  
Traditionally, trust has been seen as a result of personal knowledge of an individual's past behavior. In this view, trust develops gradually over time based on an individual's cognitive assessment of the other person's behavior. However, high levels of trust have been observed among members of virtual teams, who often have little prior history of working together and may never meet each other in person. To integrate these two seemingly contradictory views of trust, this study manipulated team member characteristics and team member behavior to empirically test a two-stage theoretical model of trust formation and the influence of information and communication technologies (ICT) on trust formation. The results indicate that category-based processing of team member characteristics and an individual's own disposition to trust dominated the initial formation of swift trust. Once individuals accumulated sufficient information to assess a team member's trustworthiness, the effects of swift trust declined and knowledge-based trust formed using team members' behaviors (perceived ability, integrity, and benevolence) became dominant. The use of ICT increased perceived risk of team failure, which reduced the likelihood that team members would engage in future trusting behaviors.

# A research agenda for trust in online environments

D Gefen, I Benbasat, P Pavlou

Year:2008

<https://www.tandfonline.com/doi/abs/10.2753/MIS0742-1222240411>

## Abstract

Abstract  
We present an agenda for the future research that has the potential to extend the conceptual foundations of trust in online environments and to improve the practice in the domain. The agenda draws on the previous work on trust, the papers included in this Special Issue, and our perspective on the state of the literature. This agenda is structured into four components-nature and role of trust, moderators of trust, antecedents of trust, and empirical methods for examining trust.

# Stylometric identification in electronic markets: Scalability and robustness

A Abbasi, H Chen, JF Nunamaker

Year:2008

<https://www.tandfonline.com/doi/abs/10.2753/MIS0742-1222250103>

## Abstract

Abstract  
Online reputation systems are intended to facilitate the propagation of word of mouth as a credibility scoring mechanism for improved trust in electronic marketplaces. However, they experience two problems attributable to anonymity abuse—easy identity changes and reputation manipulation. In this study, we propose the use of stylometric analysis to help identify online traders based on the writing style traces inherent in their posted feedback comments. We incorporated a rich stylistic feature set and developed the Writeprint technique for detection of anonymous trader identities. The technique and extended feature set were evaluated on a test bed encompassing thousands of feedback comments posted by 200 eBay traders. Experiments conducted to assess the scalability (number of traders) and robustness (against intentional obfuscation) of the proposed approach found it to significantly outperform benchmark stylometric techniques. The results indicate that the proposed method may help militate against easy identity changes and reputation manipulation in electronic markets.

# Tuning data mining methods for cost-sensitive regression: a study in loan charge-off forecasting

G Bansal, AP Sinha, H Zhao

Year:2008

<https://www.tandfonline.com/doi/abs/10.2753/MIS0742-1222250309>

## Abstract

Abstract  
Real-world predictive data mining (classification or regression) problems are often cost sensitive, meaning that different types of prediction errors are not equally costly. While cost-sensitive learning methods for classification problems have been extensively studied recently, cost-sensitive regression has not been adequately addressed in the data mining literature yet. In this paper, we first advocate the use of average misprediction cost as a measure for assessing the performance of a cost-sensitive regression model. We then propose an efficient algorithm for tuning a regression model to further reduce its average misprediction cost. In contrast with previous statistical methods, which are tailored to particular cost functions, this algorithm can deal with any convex cost functions without modifying the underlying regression methods. We have evaluated the algorithm in bank loan charge-off forecasting, where underforecasting is considered much more costly than overforecasting. Our results show that the proposed algorithm significantly reduces the average misprediction costs of models learned with various base regression methods, such as linear regression, model tree, and neural network. The amount of cost reduction increases as the difference between the unit costs of the two types of errors (overprediction and underprediction) increases.

# The impact of individualism—collectivism, social presence, and group diversity on group decision making under majority influence

D Zhang, PB Lowry, L Zhou, X Fu

Year:2007

<https://www.tandfonline.com/doi/abs/10.2753/mis0742-1222230404>

## Abstract

Abstract  
Majority influence is the attempt by a majority of group members to impose their common position on group dissenters during group decision making. Because of globalization, the use of cross-cultural teams in group tasks is becoming increasingly common. The objective of this study was to investigate how national culture, social presence, and group diversity may affect majority influence in a group decision-making context. A total of 183 groups participated in a large-scale empirical experiment at multiple sites. The results show that the national culture of group minorities has a significant impact on majority influence and that the use of computer-mediated communication can reduce majority influence. The findings have both theoretical and practical implications for improving the outcome and the effectiveness of group decision making in cross-cultural environments.

# A comparison of classification methods for predicting deception in computer-mediated communication

L Zhou, JK Burgoon, DP Twitchell, T Qin…

Year:2004

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2004.11045779>

## Abstract

Abstract  
The increased chance of deception in computer-mediated communication and the potential risk of taking action based on deceptive information calls for automatic detection of deception. To achieve the ultimate goal of automatic prediction of deception, we selected four common classification methods and empirically compared their performance in predicting deception. The deception and truth data were collected during two experimental studies. The results suggest that all of the four methods were promising for predicting deception with cues to deception. Among them, neural networks exhibited consistent performance and were robust across test settings. The comparisons also highlighted the importance of selecting important input variables and removing noise in an attempt to enhance the performance of classification methods. The selected cues offer both methodological and theoretical contributions to the body of deception and information systems research.

# Information Systems Design--Theory and Methodology

RO Briggs, JF Nunamaker Jr, RO BRIGGS…

Year:2004

<https://www.tandfonline.com/doi/pdf/10.1080/07421222.2004.11045781>

## Abstract

# Identification of comment authorship in anonymous group support systems

SC Hayne, CE Pollard, RE Rice

Year:2003

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2003.11045755>

## Abstract

Abstract  
This study examines whether technically "anonymous" comments entered by participants during group support system (GSS) brainstorming sessions are, in fact, unidentifiable. Hypotheses are developed and tested about the influences of comment length, comment evaluative tone, duration of group membership, and prior communication among group members on the accuracy of attributions they made about the identity of the authors of these technically anonymous comments. Data on prior communication and group history about each of the 32 small groups was collected before participants began using a GSS for brainstorming. Immediately after the session, each member was asked to attribute authorship to a sample of the session's anonymous comments (comment authorship was known to the researchers). The study's participants made attributions that were significantly more accurate than chance guessing. Factors that had a positive influence on attribution accuracy include evaluative tone of comments (especially humorous comments) and amount of prior communication received from other group members. Vividness of comment tone and comment length was not significantly correlated with attribution accuracy. Although the attributions of anonymous comments were more accurate than expected by chance, most of the attributions were incorrect. Implications and consequences of both accurate and inaccurate attribution are discussed along with suggestions for future research.

# Exploring the core concepts of media richness theory: The impact of cue multiplicity and feedback immediacy on decision quality

SS Kahai, RB Cooper

Year:2003

<https://www.tandfonline.com/doi/abs/10.1080/07421222.2003.11045754>

## Abstract

Abstract  
Employing media richness theory, a model is developed to open the black box surrounding the impact of computer-mediated communication systems on decision quality. The effects on decision quality of two important communication system factors, cue multiplicity and feedback immediacy, are examined in light of three important mediating constructs: social perceptions, message clarity, and ability to evaluate others. A laboratory experiment examining two tasks and employing face-to-face, electronic meeting, electronic conferencing, and electronic mail communication systems is used to assess the model's validity. Results provide consistent support for the research model as well as media richness theory. <BR></BR>Richer media facilitate social perceptions (total socio-emotional communication and positive socio-emotional climate) and perceived ability to evaluate others' deception and expertise. Leaner media (electronic mail and electronic conferencing) facilitate communication clarity when participants have less task-relevant knowledge. The impacts of these mediating constructs on decision quality were found to depend on the levels of participant expertise and deception. In general, it was found that richer media can have significantly positive impacts on decision quality when participants' task-relevant knowledge is high. Moreover, effects of participant deception can be mitigated by employing richer media.

# The effect of computer-mediated communication on agreement and acceptance

SS Kahai, RB Cooper

Year:1999

<https://www.tandfonline.com/doi/abs/10.1080/07421222.1999.11518238>

## Abstract

Abstract  
This study develops and tests a model of relationships among computer-mediated communication systems (CMCS), group processes, and group outcomes. The group outcomes examined are agreement and acceptance. Agreement is the extent to which members of a problem-solving group hold similar views and solutions about the problem at the end of their task. Acceptance is the extent to which members of a problem-solving group acquiesce to the views and solutions of other members, while holding reservations about those views and solutions. The distinction between agreement and acceptance is important because members in agreement are more likely to support the implementation of their solution than are those who merely accept the solution. Based on a laboratory experiment, we find that socioemotional communication (both positive—showing friendliness and supportiveness—and negative—showing hostility and rejection) as well as task-oriented communication play important mediating roles between CMCS use and acceptance and agreement. The findings suggest ways to promote agreement through management intervention and CMCS design. In addition, our findings suggest some intriguing avenues for further research, such as the lack of symmetry between the effects of positive and negative socioemotional communication.

# Testing the interactivity model: Communication processes, partner assessments, and the quality of collaborative work

JK Burgoon, JA Bonito, B Bengtsson…

Year:1999

<https://www.tandfonline.com/doi/abs/10.1080/07421222.1999.11518255>

## Abstract

Abstract:  
A major consideration in designing and adopting new communication technologies is their impact on communication processes and outcomes. One way to understand this impact is according to the principle of interpersonal interactivity.  
Findings from two investigations are reported here that address how properties of task-related communication conducted with differing interfaces relate to perceptions of interaction partners and the outcomes of their collaborative work. Study 1 manipulated the interface affordances of mediation, contingency, and modality richness. Study 2 examined the affordance of mediation. Results show that interfaces that promote higher mutuality and involvement lead to more favorable perceptions of partners’ credibility and attraction, and those perceptions are systematically related to higher-quality decisions and more influence. Discussion focuses on the relation between user perceptions, design features, and task outcomes in human-computer interaction and computer-mediated communication.

# The effect of presentation media on recipient performance in text-based information systems

GM Kasper, AH Morris

Year:1988

<https://www.tandfonline.com/doi/abs/10.1080/07421222.1988.11517806>

## Abstract

Abstract:  
The effect of presentation media on recipient performance and perceived difficulty in text-based information systems was investigated. Based on data collected in a laboratory setting, we examined differences among electronic mail, audio, and audio/video media in terms of message comprehension and perceived difficulty. Twenty-four volunteer business administration faculty and graduate students were subjects for the repeated-measures experiment. The results show that media affects message comprehension, but does not alter the recipient’s perception of the difficulty of the message. Media that require reading the message were found to be superior to audio media in terms of comprehension.