COMP 3603: Human Computer Interaction Group Posters

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The Influence of Human Factors on the Intention to Report Phishing Emails: Research Paper Analysis

by Isabell Munroe

Background

Authors:

- *Ioana Marin:* Eindhoven University of Technology, Netherlands, Empirical Studies in HCI.
- *Nicola Zannone:* Eindhoven University of Technology, Netherlands, Empirical Studies in HCI.
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Methodology

Main Objectives:

- A 284-participant online survey was conducted using Amazon Mechanical Turk (AMT) to assess cybersecurity practices and phishing email reporting inclination among respondents.

Data Collection Techniques:

- A survey was conducted to gather demographic information, personality traits, workplace routines, beliefs, positive cybersecurity behavior, and intention to report phishing emails.

Results

Results:

- There is a strong correlation between an individual's positive cybersecurity behaviours, (particularly compliance and security assurance) and their intention to report phishing emails.

Key Findings:

- Individuals with higher education, longer employment, and consistent phishing email reporting are more likely to exhibit positive cybersecurity behaviors beneficial to organizations.
- Longtime employees at a company that were victim to phishing emails in the past, and persistently reported phishing emails, are more inclined to do so.
- Individuals who exhibit high levels of sportsmanship, are less likely to report phishing emails, to prevent creating additional work for others.
- Human factors that influence an individual's general cybersecurity behaviours, might differ from the factors that impact specific cybersecurity behaviours.

Discussion

Results:

- *A unified model for phishing reporting behaviours:* Previous research on cybersecurity behaviors has primarily focused on OCB characteristics (individual and organizational), neglecting beliefs and personality traits, necessitating the development of a cohesive model for more consistent results.
- *Generic vs cybersecurity behaviours:* Human factors that influence general and specific cybersecurity behaviours differ, researchers should be cautious when generalizing their findings.

Limitations:

- *US-based study:* Limited generalizability, may not apply to other countries.
- *Most participants were managers/senior managers:* More likely to be targeted by phishing due to their position.

Conclusion

Main Takeaways:

- There is a strong correlation between an individual's positive cybersecurity behaviours, and their intention to report phishing emails.
- Self-efficacy, altrusim, and subjective norms positively impacted reporting intention.
- Sportsmanship negatively impacted intention.
- Further research is needed to assess the efficacy of human factors in improving an organization's training and awareness programs and fostering a positive cybersecurity posture.

Relevance and Impact of the Research:

- Insight for future research and practical strategies for organizations to improve phishing reporting rates.
- Insight into the theoretical and practical implications of human factors in the InfoSec context.

DESIGNING FOR SPEECH PRACTICE SYSTEMS: HOW DO USER-CONTROLLED VOICE MANIPULATION AND MODEL SPEAKERS IMPACT SELF-PERCEPTIONS OF VOICE?

Authors: (Msc) Lisa Orii, (Msc) Nami Ogawa, Yuji Hatada, Dr.Takuji Narumi

Background

Explore how user-controlled voice manipulation and listening to model speakers affect self-perceptions of their own voice.

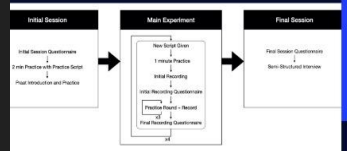

Figure 2: Diagram of experimental flow.

Results

Participants showed moderate baseline levels of self-esteem and self-efficacy. Confidence improved significantly with model audio (Median = 1), while voice manipulation had no notable impact on self-perception. There was a marginal effect on flow, but no significant pairwise differences were found.

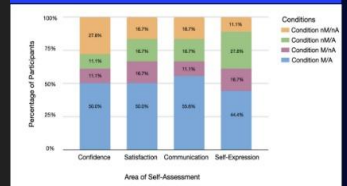

Figure 6: Distribution of the four conditions that contributed the most to self-perceptions of confidence, satisfaction, communication, and self-expression.

Method

- Intial Session: Pre-Experiment questionnaire on self-esteem, self-efficacy and voice perception.
- Main experiment: 4 conditions with/without voice manipulation and model audio
- Final Session: Evaluation of conditions, feedback and self-assessments
- Semi-Structured Interviews: Detailed feedback on toolsand their impact on self perception

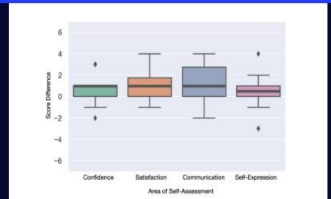

Figure 7: Box plots of the score differences in the ratings of confidence, satisfaction, communication, and self-expression between the initial session questionnaire and the final session questionnaire.

Discussion

- HCI Implications: Multimodal feedback essential for speech system design.
- User Autonomy: Balancing control and guidance is critical.
- Limitations:
  - Small sample size.
  - Short-term study.
  - Reliance on self-assessments.

Conclusion

Model audio improves tone confidence, and voice manipulation is valued for feedback. This research offers insights into designing balanced speech systems with potential applications in public speaking, language learning, and voice therapy.

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AUTOMATED ASSESSMENT OF EYE-HAND COORDINATION SKILL USING A VERTICAL TRACING TASK ON A GAZE-SENSITIVE HUMAN COMPUTER INTERACTION PLATFORM FOR CHILDREN WITH AUTISM

BACKGROUND

The study aims to develop a Virtual Reality-based Automated Gaze-sensitive Tool (VRAT) to objectively assess eye-hand coordination and gaze behavior in children with Autism Spectrum Disorder (ASD), offering a more comprehensive evaluation than traditional 2D methods by focusing on 3D tasks. The motivation is to address the limitations of conventional assessments, which lack gaze-tracking and overlook the complexity of 3D coordination, essential for daily activities.

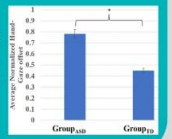
Authors and Affiliations:

- *Dharma Rane & Uttama Lahiri: Professors at the Indian Institute of Technology (IIT), known for their research in Human-Computer Interaction (HCI), robotics, and assistive technologies for individuals with developmental disabilities.*
- *Madhu Singh: Director of the B.M. Institute of Mental Health, specializing in mental health services.*

METHODOLOGY

THE VRAT SYSTEM COMPRISES FOUR MODULES:
EYE TRACKER MODULE: USES TOBII 4C TO RECORD 2D GAZE COORDINATES.
PEN TRACKER MODULE: UTILIZES AN ELECTROMAGNETIC TRACKER TO CAPTURE 3D HAND MOVEMENTS TRANSLATED INTO THE VR ENVIRONMENT.
PEN STATE MODULE: A TOGGLE SWITCH SETUP TO DIFFERENTIATE DRAWING STATES.
TASK PRESENTATION AND COMPUTATION MODULE: DISPLAYS A VERTICAL TRACING TASK AND CALCULATES VARIOUS PERFORMANCE AND GAZE INDICES.

PARTICIPANTS: THE STUDY INVOLVED 20 CHILDREN (10 WITH ASD AND 10 TYPICALLY DEVELOPING) WITH NO MOTOR DEFICITS, CONFIRMED USING THE SOCIAL COMMUNICATION QUESTIONNAIRE (SCQ) AND SOCIAL RESPONSIVENESS SCALE (SRS).



CONCLUSION

The VRAT system is a promising tool for assessing eye-hand coordination and gaze patterns in children with ASD. It offers valuable insights for therapists and educators to design targeted interventions and therapies based on quantitative data, supporting the development of adaptive and personalized HCI systems.

RESULTS & DISCUSSION

Children with Autism Spectrum Disorder (ASD) exhibited poorer eye-hand coordination, with higher tracing errors and less hand-eye synchronization. Their gaze behavior was atypical, with shorter fixation on task-relevant areas and more dispersed patterns. The strong negative correlation between gaze duration and tracing accuracy highlights the importance of effective gaze for motor performance, emphasizing the value of gaze-sensitive tools like VRAT for personalized assessments and interventions