

UNSW Department of Aviation 2009 Colloquium Series

Location: Old Main Building, Level 2, Room 211

Time: 1100 Date: Monthly – Last Wednesday

Coffee and Tea available prior to each presentation

Date	Presenter	Affiliation	Title	Chair
29 April	Helena Hong	UNSW - Psychology	Its only human: Understanding why errors occur in skilled behaviour	Ann Williamson
27 May	Brett Molesworth	UNSW – Aviation	Predicting Pilots Risk-Taking Behavior through an Implicit Association Test	Ann Williamson
24 June	Steve Shorrock	UNSW – Aviation	Evaluation of the HFACS-ADF safety classification system: inter-coder consensus and intra-coder consistency	Brett Molesworth
29 July	Julie Hatfield	UNSW – Injury Risk Management Research Centre	The role of risk propensity in the risky driving of younger drivers.	Ann Williamson
26 August	John Faulkner	UNSW – Aviation	A new synthesis in aviation safety	Brett Molesworth
30 September	Rebecca Mitchell	UNSW – Aviation	Defining injury and identifying denominators: Implications for analysis & interpretation	Brett Molesworth
28 October	Steve Shorrock and Amy Chung	UNSW – Aviation	Mind the gap: Research and practice in human factors / ergonomics	Brett Molesworth
25 November	TBA			

Upcoming Meeting/s

Rebecca Mitchell - Defining injury and identifying denominators: Implications for analysis & interpretation

Abstract
TBA

Steve Shorrock and Amy Chung - Mind the gap: Research and practice in human factors / ergonomics

Abstract

Significant discord has been aired regarding the widening scientist-practitioner gap in several disciplines (e.g. psychology, library and information science, healthcare), especially with reference to research published in academic journals. Typical problems reported by practitioners include excessive emphasis on methodology and a failure to describe clearly the practical implications of research. These and other barriers to research application often mean that practitioners may neglect research-based approaches. However, no such research on this important issue has been identified in the human factors and ergonomics (HF/E) literature.

Using an online questionnaire, practitioners were asked about their application of scientific research findings published in peer-reviewed journals. The study aims to determine the applied usefulness of HF/E research and the most important barriers to the application of research findings, as well as present recommendations for authors on how to improve the practical relevance of their research.

Over 590 usable responses were collected, spanning over 46 countries. The respondents were employed in a range of settings in industry, Government, academia and charities. Approximately 52% were members of an HF/E Society or Association. The top three industries were (1) manufacturing, (2) transport and (3) health. The top three application areas overall were (1) tasks, jobs & work processes, displays, (2) controls & computer interfaces, and (3) safety management. Respondents had an average of 13 years of professional experience and their professional activities were divided into research (28% of working time on average), application (31% of time), education (26% of time) and other activities (15% of time).

Initial analysis of the overall data suggests that respondents read an average of 2-5 articles a month and find the top three most useful journals to be Applied Ergonomics, Human Factors and Ergonomics, which were rated as moderately useful. All other IEA-endorsed journals, and journals overall,

were rated as between “a little useful” and “moderately useful” to respondents. Of the 29 barriers rated, the strongest barriers to application (in order) were the dispersed nature of the findings in many sources, lack of clear Implications for practice, lack of time to read research, lack of relevance of research for practice (e.g. application area, industry), lack of generalisability to the organizational environment and lack of availability and accessibility of research.

This paper will present data on the key differences and correlations in terms of reading behaviour, usefulness, and barriers to application, among respondents who vary in terms of percentage of work time devoted to application versus research, society membership, and other factors. The findings will be disseminated to HF/E Societies and professionals with suggestions to help reduce the gap between research and practice.

Previous Meeting/s

Helena Hong - Its only human: Understanding why errors occur in skilled behaviour

Abstract

Although the extent of human error involvement in accidents and incidents has been widely documented, knowledge about the actual nature and causes of human error is poor, particularly those that occur in skilled or habitual behaviours. The aim of this study was to empirically test theoretical predictions about the tendency for a momentary distraction, such as a brief auditory distraction to lead to a subsequent error in skilled performance. The prediction relates to whether errors in skilled performance depended on where a distraction occurred relative to subtask boundaries. Specifically, whether errors are more likely following a distraction that is further away from the subtask boundary (i.e., towards the middle of a subtask) or closer to the subtask boundary (i.e., at the end of a subtask). Sixty-participants performed a simple psychomotor task under auditory distraction. Level of skill (high and low) was manipulated by varying the amount of practice participants received prior to the distraction task. Error-related variables such as error magnitude, error detection and error correction were significantly more affected by distal distractions occurring midway through a subtask than following more proximal distractions falling at the end of a subtask. The observed effects challenges existing models of human error and highlight the complexity human information processing in skilled performance.

Julie Hatfield - The role of risk propensity in the risky driving of younger drivers.

Abstract

Young drivers are over-represented in road injury statistics, partly because they engage in more risky driving. It is often assumed that, compared to older people, younger people have greater risk-propensity, defined as a positive attitude to risk. However, relevant theory is imprecise and relevant research is clouded by inappropriate measures. The present study aimed to compare younger and older drivers in terms of risk propensity and related variables (e.g. motives for risk-taking), and assess associations between these variables and risky driving (speeding and drink-driving). Eighty-nine participants aged 16-25, and 110 participants aged over 35, were recruited outside motor registries. Participants completed a battery of questionnaires including measures of risk-aversion, risk-propensity, risk-related motives for risky driving, risk-perception, and risky driving. Compared to older drivers, younger drivers demonstrated lower risk-aversion, and higher propensity for taking accident risks, as well as stronger motives for risky driving in relation to experience-seeking, excitement, sensation-seeking, social influence, prestige-seeking, confidence/familiarity, underestimation of risk, irrelevance of risk, "letting off steam", and "getting there quicker". Further, these variables were associated with risky driving. The present research has showed for the first time that younger drivers demonstrate greater risk-propensity, and stronger motives for speeding and drink-driving, than older drivers. Observed cross-sectional correlations suggest the value of targeting various motives for speeding and drink-driving

amongst young-drivers, and provide a foundation for future experimental research in which risk attitudes are manipulated and risky behaviour is measured (perhaps without reliance on self-report).

John Faulkner - A new synthesis in aviation safety.

Abstract:

This paper attempts to combine two major approaches to the analysis of the causes of aircraft accidents and from this synthesis to argue the need for new priorities in addressing the problems associated with these accidents. The first part of the paper maintains that every accident has as a contributory cause "Human Error". The second part looks at the effect that the theories of Risk Homeostasis have on measures to improve safety. It is concluded that the individual "thermostat" of risk acceptance makes safety programs inherently self-defeating. The synthesis of these two concepts points to the conclusion that attempts to achieve zero risk and its corollary, zero accidents are not achievable. It is the combination of human error and risk homeostasis that makes the prevention of all accidents impossible. The consequences of this hypothesis call for a review of safety management priorities. If all accidents cannot be prevented, then it is incumbent on the industry to make a greater effort to ameliorate and mitigate the effects of those accidents that will inevitably occur. This will require a greater emphasis on so-called Secondary Safety.