



thorough presentation of cognitive analyses in aviation and a highly usable guide in the design, implementation and interpretation of CTA. The book will be useful to instructional developers, aviation equipment and systems designers, researchers, government regulatory personnel, human resource managers, instructors, pilots, air traffic controllers, and operations staff.

Work is all around us and permeates everything we do and everyday activities. Not all work is justified, not all work is properly designed, or evaluated accurately, or integrated. A systems model will make work more achievable through better management. Work is defined as a process of performing a defined task or activity, such as research, development, operations, maintenance, repair, assembly, production, and so on. Very little is written on how to design, evaluate, justify, and integrate work. Using a comprehensive systems approach, this book facilitates a better understanding of work for the purpose of making it more effective and rewarding.

This research note is a collection of papers and summary recommendations resulting from a two-day workshop focused on training transfer. Supported by the Army Research Institute, the workshop features presentations by academic, non-academic, and military laboratory scientists on psychological research and applications related to transfer of training. Among the specific topics dealt with are: the development of cognitive simulation models, skills development methods, the need for intelligent job aids, cognitive task analysis, and methods for measuring job performance. Recommendations for further research and applications are provided.

Today, when a security incident happens, the top three questions a cyber operation center would ask are: What has happened? Why did it happen? What should I do? Answers to the first two questions form the core of Cyber Situation Awareness (SA). Whether the last question can be satisfactorily addressed is largely dependent upon the cyber situation awareness capability of an enterprise. The goal of this book is to present a summary of recent research advances in the development of highly desirable Cyber Situation Awareness capabilities. The 8 invited full

papers presented in this volume are organized around the following topics: computer-aided human centric cyber situation awareness; computer and information science aspects of the recent advances in cyber situation awareness; learning and decision making aspects of the recent advances in cyber situation awareness; cognitive science aspects of the recent advances in cyber situation awareness

Perspectives on Cognitive Task Analysis

Intelligent Tutoring Systems

The Oxford Handbook of Military Psychology

印度概况

Neurotechnology in National Security and Defense

Applications and Case Studies

This two-volume set LNCS 10915 and 10916 constitutes the refereed proceedings of the 12th International Conference on Augmented Cognition, AC 2018, held as part of the 20th International Conference on Human-Computer Interaction, HCII 2018, in Las Vegas, NV, USA in July 2018. The 1171 papers presented at HCII 2018 conferences were carefully reviewed and selected from 4346 submissions. The papers cover the entire field of human-computer interaction, addressing major advances in knowledge and effective use of computers in a variety of applications areas. The papers in this volume are organized in the following topical sections: context aware adaption strategies in augmented cognition, brain sensors and measures for operational environments, artificial intelligence and machine learning in augmented cognition, augmented cognition in virtual and mixed reality.

This book reports on the latest research and developments in the field of cybersecurity, particularly focusing on personal security and new methods for reducing human error and increasing cyber awareness, as well as innovative solutions for increasing the security of advanced Information Technology (IT) infrastructures. It covers a broad range of topics, including methods for human training; novel cyber-physical and process-control systems; social, economic, and behavioral aspects of cyberspace; issues concerning the cybersecurity index; security metrics for enterprises; and risk evaluation. Based on the AHFE 2018 International Conference on Human Factors in Cybersecurity, held on July 21 – 25, 2018, in Orlando, Florida, USA, the book not only presents innovative cybersecurity technologies, but also discusses emerging threats, current gaps in the available systems, and future challenges that can be successfully overcome with the help of human factors research.

This report presents the results of a scoping study that was conducted to develop a Research and Development roadmap for Project 14dj, "Modelling and Simulation for Requirements Engineering and Options Analysis." The purpose of Project 14dj is to develop a Modelling and Simulation capability, comprised of analytical techniques and software tools, for addressing human factors issues commonly encountered by Canadian Forces acquisition projects. This scoping study developed a roadmap for this research by developing insights and research questions from the current Canadian Forces procurement process, the academic and applied literature on requirements engineering and options analysis, and through expert advice on how Cognitive Work Analysis could be applied to Canadian Forces procurement. Twenty-four research questions were developed, which are structured into five specific research proposals for Defence R & D Canada to consider for inclusion in Project 14dj. The research proposals are as follows: (1) research to apply Cognitive Work Analysis and Modelling and Simulation to the development of operational requirements; (2) research to conduct a cognitive task analysis of requirements engineering and options analysis in Canadian Forces procurement; (3) research to develop a tool to support the application of Cognitive Work Analysis to Canadian Forces procurement; (4) research to extend and apply Social Organization and Cooperation Analysis (a lesser-developed area of Cognitive Work Analysis) to Canadian Forces procurement; and (5) research to extend Defence R & D Canada-Toronto's crewing effectiveness task network model. The research program presented in this report should provide Defence R & D Canada with a stronger ability to have a positive impact on Canadian Forces procurement projects. If successful, this research could provide the Canadian Forces with an overall reduction of risk in the procurement cycle.

Prior attempts to use standard "self report" or interview protocols to extract After Action Review (AAR) descriptions of emergency event decision making and problem solving strategies generated by participants are problematical. Cognitive psychological studies suggest that the resulting information often contains significant errors and omissions (Glaser et al., 1985; Benard, 2000). These errors are not often recognized by participants who solved important problems in emergency situations and wish to give accurate reports on their solutions because the knowledge they are describing is largely automated and unconscious (Wheatley & Wegner, 2001). The problem is further complicated by the fact that experienced medical personnel mistakenly believe that their reports are complete and accurate and that they solved the problems they are describing in a conscious, willful, deliberate manner (Wegner, 2002). These reporting errors most likely increase in number and severity under time-pressure battlefield situations (Hunt & Joslyn, 2000). This research attempts to improve medical AAR with a novel combination of Cognitive Task Analysis conducted while interviewees moullage simulators (Clark and Estes, 2002; Clark & Estes, 1996; Velimchos et al. 2002). Nine trauma surgeons who have used Argyle-type shunts to repair femoral artery damage have been interviewed separately and together. Data from these interviews are being analyzed for a report that will be written by 12/31/2006. It is hypothesized that our protocol which employed a novel combination of medical Cognitive Task Analysis combined with the moullage of instruments and depictions of the femoral artery will more accurately capture the mix of automated and conscious decisions used to solve critical medical problems faced in battlefield situations. Each surgeon was interviewed separately and after reviewing the results, each surgeon was asked to correct and improve on the information gathered from the "other" surgeons.

4th International Conference, ITS ' 98, San Antonio, Texas, USA, August 16 – 19, 1998, Proceedings

Theory and Models for Cyber Situation Awareness

Capturing, Analyzing, and Organizing Knowledge

Historical Origins and Modern Communities of Practice

Applied Concept Mapping

Models that simulate cognitive processes have demonstrated considerable success in a variety of technical domains such as, intelligent tutoring, predicting the complexity of human system interactions, decision support and expert systems among others. Creating such models requires considerable skill in conducting a cognitive task analysis. The conduct of a cognitive task analysis is costly and labor intensive. As a result, a few computerized aids have been developed to assist in the process of conducting such analyses. However, none have been evaluated to determine how accurately and consistently users of such tools can create cognitive models. If such tools cannot demonstrate the creation of accurate models of cognitive tasks across users then such tools will be ineffective and unreliable. The research reported herein presents the results of experimentation, which focuses upon the evaluation of a computerized aid, specifically CAT-HCI (Cognitive Analysis Tool - Human Computer Interface), for the conduct of a detailed cognitive task analysis. A sample of users for a newly developed interface (tactical display) for the Army's Bradley A3 Fighting Vehicle were asked to model their knowledge of a routine task. Measures of the accuracy and of the consistency of the user generated models were recorded and analyzed. Accuracy measures the level of agreement between subject models and a baseline model, while consistency measures the level of agreement between subject models.

Cognitive Work Analysis

Human Factors Methods

A Systematic Approach