

Louise J. Rasmussen

Education

Wright State University, Ph.D., Human Factors & Industrial Organizational Psychology, 2007 Wright State University, M.S., Human Factors Psychology, 2003 Wright State University, B.S., Psychology, 2000

Professional Positions

2015 –present	Principal Scientist, Global Cognition, Newark, DE
2011 - 2015	Senior Scientist, Global Cognition, Yellow Springs, OH
2006 - 2011	Staff/Sr. Scientist, Applied Research Associates, Fairborn, Ohio
2001 - 2006	Graduate Research Assistant, Workplace Cognition Laboratory, Wright State
	University
2004 - 2005	Lecturer, Introduction to Psychology, Wright State University
1997 - 2001	Academic Facilitator, Office of Disability Services, Wright State University

Fields of Specialization

Cultural competence, applied cognition, qualitative and mixed methods, competency models

Awards, Fellowships, and Honors

- ARC Observation Guide Validation Study, 1st SFC(A), 2021-2023 (PI).
- DLIELC KSA Needs Analysis IERW, MICCC, and JCWS, ACTFL, 2020-2021 (PI)
- Regional Expertise Development, 1st SFC(A), 2020-2021 (PI).
- Regional Expertise Assessment Methods, 1st SFC(A), 2020-2020 (Co-PI).
- DLIELC KSA Needs Analysis Basic Combat Training, ACTFL, 2019-2021 (PI)
- Determining Levels of Cultural Competence, DLNSEO, 2016-2018 (Co-PI).
- Q Course LREC Program Review, USAJFKSWCS, 2017-2018 (PI).
- Cross-Cultural Competence (3C) model validation, DLNSEO, 2013-2014 (PI).
- Data Collection for Cross-Cultural Competence (3C) model, DLNSEO, 2010-2011 (PM).
- Human Social Culture Behavior Modeling, CTTSO OSD, 2009-2010 (PM).
- International Technology Alliance, US ARL/UK MoD, 2006-2010 (PM).
- Outstanding Graduate Teaching Assistant, Psychology Department, 2005.
- Best Student Paper for the Cognition and Decision Making subgroup of HFES, 2004.
- Graduate Student Excellence Award, School of Graduate Studies, 2004.
- University Nominee for Distinguished Master's Thesis project, 2002-2003.

Professional Society Memberships

Association for Human Resources Professionals International Association for Cross-Cultural Psychology International Academy for Intercultural Research Society for Intercultural Education, Training and Research American Council on the Teaching of Foreign Languages

Review Activities

Journals: Journal of Cross-Cultural Psychology, Journal of Human Factors and Ergonomics Society, Cognitive Science

Other Professional Activities

- 2020 US Global Leadership Coalition, member Delaware Advisory Committee
- 2011 2011 Group Leader, *Culture & Cognition*, ARA. Responsible for marketing and management to support a 4-person research group
- 2004-2005 Graduate Student Instructor, Department of Psychology, Wright State University, Introduction to psychology.
- 1997-2001 Office of Disability Services, Academic Support Services, Wright State University, Provided academic and study skills assistance.

Publications

- Rasmussen, L. J., & Sieck, W. R. (2020). Save your ammo: Working across cultures for national security. Global Cognition.
- Rasmussen, L. J. (2020). Sluss-Tiller tests the cultural competence Special Operations Forces need. *Military Review, Mar-Apr*, 107-114.
- Rasmussen, L. J., & Duran, J. L. (2018). *Cross-cultural competence activities for basic Spanish*. Yellow Springs, OH: Global Cognition.
- Sieck, W. R., Rasmussen, L. J., & Duran, J. L. (2016). Considerations and best practices for developing cultural competency models in applied work domains. In J. L. Wildman, R. L. Griffith, & B. K. Armon (Eds.), *Critical Issues in Cross Cultural Management* (pp. 33-52). Switzerland: Springer.

- Rasmussen, L. J., & Sieck, W. R. (2015). Culture-general competence: Evidence from a cognitive field study of professionals who work in many cultures. *International Journal of Intercultural Relations*, 14(3), 75-90.
- Rasmussen, L. J., Sieck, W. R., & Hoffman, R. R. (2014). Cultural knowledge for intelligence analysts: Expertise in cultural sensemaking. *American Intelligence Journal*, 31(2), 28-37.
- Rasmussen, L. J., & Sieck, W. R. (2014). Ready, set, go anywhere: A culture-general competency model for the DoD. *Military Intelligence Professional Bulletin, Jul-Sep*, 47-52.
- Sieck, W. R., Smith, J. L., & Rasmussen, L. J. (2013). Metacognitive Strategies for Making Sense of Cross-Cultural Encounters. *Journal of Cross-Cultural Psychology*, 44(6), 1007-1023.
- Rasmussen, L. J., & Sieck, W. R. (2012). Strategies for developing and practicing cross-cultural expertise in the military. *Military Review, Mar-Apr*, 71-80.
- Grome, A., Crandall, B., Rasmussen, L., & Wolters, H. (2011). *Army design methodology: Commander's resource*. United States Army School of Advanced Military Studies, Ft. Leavenworth, KS.
- Sieck, W. R., Simpkins, B. G., Rasmussen, L. J. (2011). A cultural belief network simulator. In J. Salerno, S. J. Yang, D. Nau, & S.-K. Chai (Eds.), *Social Computing and Behavioral-Cultural Modeling*. University of Maryland, College Park, MD.
- Rasmussen, L. J., Sieck, W. R., & Osland, J. (2010). Using cultural models of decision making to assess and develop cultural sensemaking competence. In D. Schmorrow & D. Nicholson (Eds.), *Advances in Cross-Cultural Decision Making*, Boca Raton: CRC Press / Taylor & Francis, Ltd.
- Rasmussen, L. J. & Sieck, W. R. (2010). What happens after the 3rd cup of tea?: A cultural sensemaking guide to Afghanistan. Washington, DC: DoD.
- Karat, J., Sieck, W., Norman, T. J., Karat, C.-M., Brodie, C., Rasmussen, L., & Sycara, K. (2010).
 A model for culturally adaptive policy management in ad hoc collaborative contexts. In
 D. Verma (Ed.), Network Science for Military Coalition Operations: Information Exchange and Interaction (pp. 174-190). Hershey, PA: IGI Global.
- Sieck, W. R., Rasmussen, L. J., & Smart, P. (2010). Cultural network analysis: A cognitive approach to cultural modeling. In D. Verma (Ed.), *Network Science for Military Coalition Operations: Information Exchange and Interaction* (pp. 237-255). Hershey, PA: IGI Global.
- Sieck, W. R., & Rasmussen, L. J. (2010). Cultural network analysis: Mapping cultural theories of mind. In S Ohlsson & R. Catrambone (Eds.), *Proceedings of the 32nd Annual Conference of the Cognitive Science Society*. Portland, OR: Cognitive Science Society.
- Rasmussen, L. J., Sieck, W. R., & Smart, P. (2009). What is a good plan? Cultural variations in expert planners' concepts of plan quality. *Journal of Cognitive Engineering & Decision Making*, *3*, 228-249.

- Karat, J., Sieck, W. R., Norman, T., Karat, C.-M., Brodie, C., Rasmussen, L., & Sycara, K. (2009). A framework for culturally adaptive policy management in ad hoc collaborative contexts. *Proceedings of the International Workshop on Intercultural Collaboration* (pp. 257-260), February 2009, Palo Alto, CA.
- Rasmussen, L. J., Sieck, W. R., & Smart, P. R. (2008). US/UK Mental Models of Planning: The Relationship between Plan Detail and Plan Quality. In: *NATO RTO HFM-142 Symposium on Adaptability in Coalition Teamwork*, 21-23 April 2008, Copenhagen, Denmark.
- Karat, J., Sieck, W. R., Norman, T., Karat, C.-M., Brodie, C., Rasmussen, L., & Sycara, K. (2008). A comprehensive framework for culturally adaptive policy management for coalition mission planning. *Proceedings of the Second Annual Conference of the International Technology Alliance*, London, UK.
- Sieck, W. R. & Rasmussen, L. J. (2008). Cultural Network Analysis: Characterizing Target Audience Cognition. *Proceedings of the 2008 Phoenix Challenge Conference on Information Operations*, April 2008, Monterey CA.
- Sieck, W. R., Smith, J. L, & Rasmussen, L. J. (2008). Expertise in making sense of cultural surprises. *Proceedings of the Interservice/Industry Training, Simulation, and Education Conference (I/ITSEC)*, December 2008, Orlando, FL.
- Rasmussen, L. J., Smith, J., & Sieck, W. R. (2007). Effects of a cultural reconciliation procedure on multinational collaborative decision making. *Proceedings of the 2007 Group Negotiation and Decision Making Meeting.*
- Sieck, W. R., & Rasmussen, L. J. (2007, September). Cultural network analysis. *Proceedings of the First Annual Conference of the US/UK International Technology Alliance*, Baltimore, MD.

Technical Reports

- Rasmussen, L. J., & Sieck, W. R. (2023). Adaptive Readiness for Culture (ARC) observation guide: Experimental validation pilot study for 1st SFC(A). Global Cognition.
- Sieck, W. R., & Rasmussen, L. J. (2022). Foreign language gains of soldiers in the ARSOF LREC program: Analysis of 1st SFC(A) Units. Global Cognition.
- Rasmussen, L. J., Duran, J. L., & Sieck, W. R. (2022). ARC Observation Guide Validation Study for 1st SFC(A). Newark, DE: Global Cognition.
- Duran, J. L., Rasmussen, L. J., & Martin, C. L. (2022). KSA Analysis of English Language Learners: Linguistic, Cognitive, and Cultural Competence Requirements for Three DLIELC Follow-On Training Courses. Alexandria, VA: American Council for the Teaching of Foreign Languages (ACTFL).
- Sieck, W. R., & Rasmussen, L. J. (2021). Foreign language gains of ARSOF soldiers in the LET/OLE program. Global Cognition.

- Rasmussen, L. J., Shah, C. S., Duran, J. L., & Sieck, W. R. (2021). *Development of Regional Expertise and Cultural KSAs at 1st SFC (A)*. Yellow Springs, OH: Global Cognition.
- Duran, J. L., Rasmussen, L. J., & Martin, C. L. (2021). KSA Analysis of English Language Learners: Linguistic, Cognitive, and Cultural Competence Requirements for U.S. Army Basic Combat Training. Alexandria, VA: American Council for the Teaching of Foreign Languages (ACTFL).
- Rasmussen, L. J., Duran, J. L., & Sieck, W. R. (2020). *1st Special Forces Command (A) Regional Expertise Assessment Methods Study*. Yellow Springs, OH: Global Cognition.
- Sieck, W. R., Rasmussen, L. J., & Duran, J. L. (2019). *Mastery levels to support the education and training of general cultural competence*. Yellow Springs, OH: Global Cognition.
- Duran, J. L., Rasmussen, L. J., Sieck, W. R. (2018). Review and analysis of the SWEG (A) LREC program of instruction. Yellow Springs, OH: Global Cognition.
- Rasmussen, L. J., Sieck, W. R., & Duran, J. L. (2017). Review of "Introduction to cultural conflict in unconventional and Irregular Warfare" Curriculum (Outline). Yellow Springs, OH: Global Cognition.
- Rasmussen, L. J. (2017). *Review of MARSOC's LREC Course 3C Clinics*. (Technical Report 16-Global Cognition-0074). Yellow Springs, OH: Global Cognition.
- Rasmussen, L. J., Sieck, W. R., & Duran, J. L. (2015). A model of culture-general competence for education and training: Validation across services and key specialties. Yellow Springs, OH: Global Cognition.
- Grome, A. P., Crandall, B. W., Rasmussen, L., & Wolters, H. M. (2012). *Incorporating Army Design Methodology into Army Operations: Barriers and Recommendations for Facilitating Integration*. (Technical Report Army Research Institute W5J9CQ-11-C-0022). Fairborn, OH: Klein Associates Division of ARA).
- Rasmussen, L. J., Sieck, W. R., Crandall, B., Simpkins, B., and Smith, J. (2011). *Data collection and analysis for a cross-cultural competence model*. (Technical Report DLO GS-10F-0298K). Fairborn, OH: Klein Associates Division of ARA).
- Sieck, W. R., Rasmussen, L. J., Smith, J. L., & Kakar, R. U. (2010). *Honor and integrity in Afghan decision making: Fundamental Afghan values within contexts*. (Technical Report W91CRB-09-C-0028c). Fairborn, OH: Klein Associates Division of ARA.
- Klein, G., Mueller, S., Rasmussen, L., & Hoffman, R. (2010). *Naturalistic models of causal reasoning: Developing and experiential user guide (EUG) to understand fusion algorithms and simulation models.* (Technical Report AFRL-RH-WP-TR-2011-0018). Fairborn, OH: Klein Associates Division of ARA.
- Rasmussen, L. J., Sieck, W. R., Grome, A. P., & Simpkins, B. (2009). Cultural Sensemaking: Competence assessment and learning objectives for new leaders in the Marine Corps.

- (Technical Report CTTSO W91CRB-09-C-0028b). Fairborn, OH: Klein Associates Division of ARA.
- Rasmussen, L. J., Grome, A. P., Crandall, B. W., & Sieck, W. R. (2009). *The Puzzling Afghan: Making Sense of Afghan Interactions*. (Technical Report CTTSO W91CRB-09-C-0028a). Fairborn, OH: Klein Associates Division of ARA.
- Sieck, W. R., & Rasmussen, L. J. (2006). *Cultural Network Analysis*. (Technical Report 06TA4-P11-T1). Fairborn, OH: Klein Associates Division of ARA.
- Shalin, V. L, Lerner, L., Bricker, J. L., & Rasmussen, L. J. (2002). Roles for Technology in the Facilitation of Distributed Work in a Complex Dynamic Domain: An Analysis of Language Patterns in Shift Handovers. (Technical Report).
- Shalin, L. Lerner, J. L. Bricker, L. J. Rasmussen, & P. Dowling, *An Analysis of Language Patterns in Shift Handovers*. Final Summary of Research for NCC 2-1351, NASA Ames Research Center, Moffett Field, CA.

Invited Talks and Workshops

- DLIFLC Continuing Education, *Integrating Adaptive Readiness for Culture into Language Instruction Workshop*. Monterey, CA, August 19-21, 2023.
- DLNSEO Culture Coordination Committee Meeting, ARC Observation Guide Validation Study for 1st SFC(A). Washington, DC (virtual), June 29, 2022.
- SOCOM Regional Expertise and Culture (REC) Assessment Working Group, *ARC Observation Guide Validation Study for 1st SFC(A) Part II.* MacDill AFB, FL (virtual), June 16, 2022.
- Interagency Language Roundtable (ILR), "Assessing the Linguistic, Cognitive and Cultural Competence Needs for English Language Learners Attending U.S. Army Basic Combat Training and Beyond," Virtual, March 11, 2022.
- SOCOM Regional Expertise and Culture (REC) Assessment Working Group, ARC Observation Guide Validation Study for 1st SFC(A) Part I. MacDill AFB, FL (virtual), February 9, 2022.
- J3-International U.S. Special Operations Command, *Adaptive Readiness for Culture Special Operations Liaison Officer Workshop.* MacDill AFB, FL, June 24, 2021
- DLIFLC and USAF 517th Training Group, *Infusing Adaptive Readiness for Culture in Arabic Language Instruction Workshop*. Monterey, CA (virtual), April 12-13, 2021.
- Center for Anticipatory Intelligence at Utah State University, *Cultural Analysis for the Warfighter*. Logan, UT (virtual), March 18, 2021.
- DLNSEO Culture Coordination Committee Meeting, 1st SFC (A) Regional Expertise and Culture Assessment: Genesis, Methodology, and Application. Washington, DC (virtual), March 3, 2021.

- 1st Security Force Assistance Brigade (SFAB), Cultural Competence for SFABs: Professional Military Education seminar. Ft. Bragg, Fayetteville, NC (virtual), May 19, 2020.
- Interagency Language Roundtable (ILR), "General Cultural Competence: A Data Driven Approach to Defining Mastery Levels for Education and Training," National Foreign Language Center, Riverdale, MD, December 14, 2018
- DLNSEO Culture Coordination Committee Meeting, "General Cultural Competence: Mastery Levels to Support Education and Training," Washington, DC, December 6, 2018
- DLNSEO Culture Coordination Committee Meeting, "Infusing Cultural Competence Instruction into the Language Classroom," MacDill, AFB, Tampa, FL, June 26, 2018.
- 3rd Battalion, 1st SWTG (A), Recommendations for cultural competence instruction in SWEG's LREC program based on review of Sluss-Tiller. Ft. Bragg, Fayetteville, NC, December 11, 2017.
- DLNSEO Culture Coordination Committee Meeting, "DLNSEO Qualitative Scale: Determining Levels of Cultural Competence," Maxwell AFB, Montgomery, AL, March 31, 2017.
- DLNSEO Culture Coordination Committee Meeting, "Applying Culture-General Competence," Washington, DC, July 7, 2016.
- Culture & Regional Knowledge Expertise Group (CRKEG), "A Model of Culture-General Competence for Education and Training," PWC, McClean, VA, May 18, 2016.
- Air Force Culture & Language Center (AFCLC), "A Model of Culture-General Competence: Examples from the data," Maxwell AFB, Montgomery, AL, February 9, 2016.
- Air Force Culture & Language Center (AFCLC), "A Model of Culture-General Competence for Education and Training: Validation across Services and Key Specialties," Maxwell AFB, Montgomery, AL, January 11, 2016.
- Interagency Language Roundtable (ILR), "What can personnel do with culture?" Foreign Service Institute, Arlington, VA, November 6, 2016.
- SOCOM Component Language Manager's Advanced Competencies Course, "Culture and critical incidents," Naval Amphibious Base, Coronado, CA, August 19, 2015.
- Northcom and Southcom Regional Coordination Liaison Assessment and Training Teams (CLATT). Developing and practicing cross-cultural expertise in the military: Professional Military Education class. Little Creek, VA, January 23, 2014.

Presentations

Rasmussen, L. J., & Sieck, W. R. (2024). *Competency Modeling for Cultural Education and Development*. AETC Learning Professional's Consortium, San Antonio, TX, March 13-14, 2024.

- Sieck, W. R., Rasmussen, L. R., & Duran, J. L. (2024, February). *Use of cognitive interviews and a scoring rubric for measuring culture-general competence* [Poster Presentation]. 2024 Academy of Human Resource Development International Research Conference in the Americas, Arlington, VA.
- Rasmussen, L. J., Edgerly, I., Sieck, W. R., & Duran, J. L. (2023). *Becoming the Partner of Choice: Assessing and Developing Cultural Competence in Live ARSOF Exercises.* Interuniversity Seminar on Armed Forces and Society, Reston, VA, October 14, 2023.
- Rasmussen, L. R., Duran, J. L., Martin, C., Coon, D., Dees, C., & Leishman, C. (2022). *Designing LREC Instruction to Accelerate Professional Partnership Development in International Military Cooperation*. Language, Regional Expertise and Culture Symposium, Montgomery, AL, Oct 21, 2022.
- Edgerly, I., Rasmussen, L. R., Stranger, E., Jurgensen, L., & Koopman, M. (2022). *Regional Expertise and Culture in the Era of Strategic Competition*. Language, Regional Expertise and Culture Symposium, Montgomery, AL, Oct 20, 2022.
- Duran, J. L., Rasmussen, L. J., Martin, C., Coon, D., & Leishman, C. (2021). Assessing the Linguistic, Cognitive and Cultural Competence Needs for English Language Learners Attending U.S. Army Basic Combat Training and Beyond. Language, Regional Expertise and Culture Symposium, Montgomery, AL (virtual), Oct 14, 2021.
- Rasmussen, L. R. (2020). *Reflective intercultural learning in the classroom and life.* Language, Regional Expertise and Culture Symposium, Montgomery, AL (virtual), Oct 14-16, 2020.
- Rasmussen, L. R., & Ronan, D. (2019). *Analysis and Design of Cultural Competence Instruction for ARSOF*. Language, Regional Expertise and Culture Symposium, Montgomery, AL, March 27, 2019.
- Rasmussen, L. R., Sieck, W. R., & Duran, J. L. (2019). *General Cultural Competence: Mastery Levels for DoD Personnel*. Language, Regional Expertise and Culture Symposium, Montgomery, AL, March 27, 2019.
- Rasmussen, L. R. (2018). *Defining Culture-General Competence Mastery Levels for Military Personnel*. Inter University Seminar on Armed Forces and Society, Ottawa, Canada, October 20, 2018.
- Rasmussen, L. R. (2018). *How does foreign language proficiency affect culture-general competence?* Language, Regional Expertise and Culture Symposium, Montgomery, AL, March 31, 2018.
- Rasmussen, L. R. (2017). A Model of Military Cross-Cultural Competence for Education and Training. Inter University Seminar on Armed Forces and Society, Reston, VA, November 3, 2017.
- Sieck, W. R., Rasmussen, L. J., & Duran, J. L. (2014). Are there cross-cultural SMEs? It ain't me (or you) babe. *Cross-Cultural Management Summit*, Melbourne, FL, March 6-8, 2014.

- Rasmussen, L. J. (2013). Culture & Cognition for the DoD. *International Association for Cross-Cultural Psychology Regional Conference*, IACCP, Los Angeles, CA, June 20-22, 2013.
- Rasmussen, L. J., & Sieck, W. R. (2013). Do Cultural Sensemaking Strategies Promote Sophisticated Moral Reasoning in Intercultural Contexts? *International Association for Cross-Cultural Psychology Regional Conference*, IACCP, Los Angeles, CA, June 20-22, 2013.
- Rasmussen, L. J., & Sieck, W. R. (2012). Metacognitive underpinnings of 3C development. 2nd International Conference on Cross-Cultural Decision Making, AHFE, San Francisco, CA, July 21-25, 2012.
- Rasmussen, L. J. (2012, March). Strategies for developing and practicing cross-cultural expertise in the military. *Society for Applied Anthropology*, 2012 Conference, Baltimore, MD.
- Rasmussen, L. J. (2011, February). *An empirical model of cross-cultural competence in the military*. The Human Social Culture Behavior Modeling Program Focus 2011 Conference, Chantilly, VA.
- Rasmussen, L. J., Sieck, W. R., & Osland, J. (2010). Using cultural models of decision making to develop and assess cultural sensemaking competence. *Ist International Conference on Cross-Cultural Decision Making*, AHFE, Miami, FL, July 17-21, 2010.
- Sieck, W. R., & Rasmussen, L. J. (2010). Cultural Network Analysis: Mapping Cultural Theories of Mind. *Proceedings of the 32nd Annual Conference of the Cognitive Science Society*. August, 2010, Portland, OR.
- Mueller, S. T., Simpkins. B., & Rasmussen, L. J. (2010). Incorporating representation when modeling cultural dynamics: Analysis of the bounded influence conjecture. *Proceedings of the 32nd Annual Conference of the Cognitive Science Society*. August, 2010, Portland, OR.
- Rasmussen, L. J. (2009, August). *The puzzling Afghan: Making sense of Afghan interactions*. Talk presented at the Human Social Culture Behavior Modeling Program Focus 2009 Conference, Chantilly, VA.
- Karat, J., Sieck, W., Norman, T., Karat, C-M., Brodie, C., Rasmussen, L., Sycara, K. (2008). A comprehensive framework for culturally adaptive policy management for coalition mission planning. *Proceedings of the Second Annual Conference of the International Technology Alliance*, London, UK.
- Sieck, W. R., Smith, J. L, & Rasmussen, L. J. (2008). Expertise in making sense of cultural surprises. *Interservice/Industry Training, Simulation, and Education Conference (I/ITSEC)*, December 2008, Orlando, FL.
- Larsson, A., & Rasmussen, L. J. (2008) *Cultural sensemaking in multinational groups: a common ground approach.* 13th ICCRTS, Bellevue, WA, June 17-19.

- Sieck, W. R. & Rasmussen, L. J. (2008). Cultural Network Analysis: Characterizing Target Audience Cognition. *Proceedings of the 2008 Phoenix Challenge Conference on Information Operations*, April 2008, Monterey CA.
- Rasmussen, L. J., & Shalin, V. L. (2007). Is conversation an example of analogical reasoning? Workshop on Analogical Reasoning at the 29th Annual Conference of the Cognitive Science Society.
- Rasmussen, L. J., Smith, J., & Sieck, W. R. (2007, May). *Cultural Diversity in Collaborative Decision Making*. Poster presented at the 19th Annual Convention of the American Psychological Society, Washington, DC.
- Sieck, W. R., Rasmussen, L. J., Smith, J. L., & McHugh, A. P. (2007, February). *Cultural Consensus Analysis for Investigating Multicultural Collaboration*. Poster presented at the Advanced Decision Architectures Collaborative Technology Alliance Meeting, Westminster, CO.
- Rasmussen, L. J., & Shalin, V. L. (2003). Temporal Reasoning with Numeric and Graphical Representations. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 2003.