

Exponent®
Engineering & Scientific Consulting

David Krauss, Ph.D.

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Professional Profile

Dr. Krauss has specialized knowledge in human perception and cognition, memory, reaction time, attention, distraction, fatigue, the effects of lighting conditions on vision, and how stress affects behavior. He uses this experience to investigate human factors in a wide array of scenarios such as automobile, motorcycle, bicycle, train/railroad, and trucking accidents; industrial and occupational accidents; injuries associated with consumer products; and trip-and-fall incidents.

Dr. Krauss has studied and investigated, within these areas, the behavioral effects of the use of mobile electronics, including cell phones and other in-vehicle or portable devices. In 2015 and 2025, Dr. Krauss published the fourth and fifth editions of Forensic Aspects of Driver Perception and Response, a comprehensive reference book on driver behavior.

Dr. Krauss' analysis methods include programming custom image-processing software to quantify visibility and conspicuity for many applications, including product development and recreating accident scenarios. He has also developed, published, and implemented a method to accurately capture and display digital photographs of low-visibility or nighttime accident scenes. Dr. Krauss performs quantitative injury and risk analyses using large-scale incident and injury data from various sources including the Consumer Product Safety Commission (CPSC) and manufacturer trade associations.

As part of his consulting practice, Dr. Krauss oversees human-subject testing to assess product usability and to gather user opinions for various products. He incorporates elements of anthropometry, visual assessments, psychophysics, questionnaires, and observational techniques to conduct comprehensive evaluations of a variety of consumer and industrial products.

Dr. Krauss' doctoral dissertation addressed human visual perception and reading. His familiarity with the cognitive-psychology literature has been applied to the development of warnings, instructions, and safety information for various products as well as to the assessment of the role of warnings in accidents.

Academic Credentials & Professional Honors

Ph.D., Psychology/Cognitive Neuroscience, University of California, Los Angeles (UCLA), 2003

M.A., Psychology, University of California, Los Angeles (UCLA), 2000

B.S., Biopsychology and Cognitive Science, University of Michigan, Ann Arbor, 1998

Pauley Graduate Fellowship, University of California, Los Angeles, 1998

Undergraduate honors, University of Michigan, 1994

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Academic Appointments

Lecturer, University of California, Los Angeles Department of Psychology

Instructor, University of California, Los Angeles Extension

Professional Affiliations

Human Factors and Ergonomics Society (member)

Society for Automotive Engineers (member)

Publications

King, D.R., Phillips, K.B. and Krauss, D.A. Headway Times on Urban, Multiple Lane Freeways. Proceedings, 66th Annual Meeting of the Human Factors and Ergonomics Society, 2022.

King, D.R., Phillips, K.B. and Krauss, D.A. Knowledge of State-Recommended Following-Distance Rules. Proceedings, 66th Annual Meeting of the Human Factors and Ergonomics Society, 2022.

Phillips, K.B., Byrne, K.N. Kolarik, B.S., Krake, A.K., Bui, Y.C. and Krauss, D.A. Impacts of Social Distancing on Pedestrian Behavior and Risk Perception. Proceedings, 65th Annual Meeting of the Human Factors and Ergonomics Society, 2021.

Tavassoli, A., King, D., Xiouris, C., and Krauss, D., Revealing Right-Turn Behavior of Human Drivers as a Model for Autonomous Vehicles, SAE Technical Paper 2021-01-0866, 2021.

Kolarik, B.S., Phillips, K.B., Zimmermann, J.F. and Krauss, D.A. Driver stopping behavior at stop-controlled intersections with sightline limitations. Proceedings, 64th Annual Meeting of the Human Factors and Ergonomics Society, 2020

Todd, J., Krauss, D., Zimmermann, J., and Dunning, A., Behavior of Electric Scooter Operators in Naturalistic Environments. SAE Technical Paper 2019-01-1007, 2019.

Tavassoli, A., Cymbalist, N., Dunning, A., and Krauss, D., Learning from Human Naturalistic Driving Behavior at Stop Signs for Autonomous Vehicles. SAE Technical Paper 2019-01-1021, 2019.

Todd J, Bui YC, Tavassoli A, Krauss D. Quantitative method for estimating driver eye height. Proceedings, 61st Annual Meeting of the Human Factors and Ergonomics Society, Austin, TX, 2017.

Tavassoli A, Perlmutter S, Bui D, Todd J, Milan L, Krauss D. Development of a robust database for measuring human gaze behavior and performance during naturalistic driving. SAE Technical Paper 2017-01-1369, 2017.

Todd JJ, Tavassoli A, Krauss DA. The moon's contribution to nighttime illuminance in different environments. Proceedings, 59th Annual Meeting of the Human Factors and Ergonomics Society, Los Angeles, CA, 2015.

Khan FS, Krauss DA, Alper SJ, Droll J, Arndt SR, Lakhiani SD, Cades DM. Do people heed warnings at gas stations? Proceedings, 2nd Annual World Conference of the Society for Industrial and Systems Engineering, pp. 114-117, Las Vegas, NV, November 5-7, 2013. ISBN: 97819384960-1-1.

Krauss DA, Todd JJ, Heckman GM. The "critical window," looming and implications for accident avoidance. ITE Journal 2012; 82(7).

Todd J, Sala J, Heckman G, Krauss D. Validation of high dynamic range photography as a tool to accurately represent low-illumination scenes. SAE Technical Paper 2012-01-0078, Society for Automotive Engineers, Inc., 2012.

Krauss DA, Todd JJ, Kim R, Scher I. A risk analysis of fall-related injuries using the NEISS database. Proceedings, 55th Annual Meeting of the Human Factors and Ergonomics Society, Las Vegas, NV, 2011.

Khan F, Arndt S, Krauss D. Understanding the relationship between safety climate and warning compliance in occupational settings. Proceedings, 14th Annual International Conference on Industrial Engineering: Theory, Applications and Practice, Anaheim, CA, 2009.

Polk TA, Lacey HP, Nelson JK, Demiralp E, Newman LI, Krauss D, Raheja A, Farah MJ. The development of abstract letter representations for reading: Evidence for the role of context. Cognitive Neuropsychology 2009; 26(1):70-90.

Kubose T, Krauss D. Methodological considerations for using the English XL tribometer for post-hoc slip-and-fall evaluations. Proceedings, 52nd Annual Meeting of the Human Factors and Ergonomics Society, Santa Monica, CA, 2008.

Krauss D, Arndt S, Lakhiani S, Khan F. Additional considerations when applying the "Safety Engineering Hierarchy" in industrial work settings. Proceedings, 13th Annual International Conference on Industrial Engineering: Theory, Applications and Practice, Las Vegas, NV, 2008.

Arndt S, Krauss D, Weaver B. A previously unidentified failure mode for ladder-climbing fall-protection systems. Proceedings, American Society of Safety Engineers Professional Development Conference and Exposition, Las Vegas, NV, 2008.

Krauss D, Lieberman D, Grossman H, Ray R, Scher I. An evaluation of perceptual experience of skiers using quantitative image processing. Journal of ASTM International 2008; 5(4).

Kuzel M, Krauss D, Moralde M, Kubose T. Comparison of subjective ratings of slipperiness to the measured slip resistance of real-world walking surfaces. International Conference on Slips, Trips and Falls, From Research to Practice, 2007.

Krauss DA, Kuzel MJ, Cassidy P, Goodman J. A review of technologies for studying visual perception under low-illumination conditions. Proceedings, 50th Annual Meeting of the Human Factors and Ergonomics Society, Santa Monica, CA, 2006.

Arndt SR, Wood CT, Delahunt PB, Wall CT, Krauss DA. Who's in the back seat? A study of driver inattention. Proceedings, 50th Annual Meeting of the Human Factors and Ergonomics Society, Santa Monica, CA, 2006.

Krauss DA, Kuzel MJ, Arndt SR, Delahunt PB. Validation of digital image representations of low-illumination scenes. SAE Paper 2006-01-1288, Society for Automotive Engineers, Inc., 2006.

Young D, Huntley-Fenner G, Trachtman D, Krauss D. Human performance issues in auditory collision-avoidance systems. Proceedings, 10th Annual International Conference on Industrial Engineering—Theory, Applications and Practice, pp. 64-68, Clearwater, FL, 2005.

Al-Tarawneh IS, Cohen WJ, Trachtman D, Bishu RR, Krauss DA. The effect of hands-free cellular telephone conversation complexity on choice response time in a detection task. Proceedings, 48th Annual Meeting of the Human Factors and Ergonomics Society, Santa Monica, CA, 2004.

Krauss DA. Mechanisms of letter perception. Doctoral Dissertation, Department of Psychology, University of California, Los Angeles, June 2003.

Books

Krauss D. Forensic aspects of driver perception and response. 5th Edition. Tucson, AZ: Lawyers and Judges Publishing Company, Inc., 2026.

Krauss D. Forensic aspects of driver perception and response. 4th Edition. Tucson, AZ: Lawyers and Judges Publishing Company, Inc., 2015.

Non-Peer Reviewed Articles

Zimmermann J, Krauss D. Driver behavior from a Human Factors perspective: What is visible vs what is seen. American Bar Association, Tort Trial and Insurance Practice Section, Winter 2020 Newsletter. Americanbar.org/tips.

Cades DM, Arndt, SR, Sala, JB, Krauss, DA. What you need to know about the distracted driver. Feature Article in The Illinois Association of Defense Trial Counsel Quarterly 2013; 23(4).

Krauss DA, Todd JJ. Comprehensive human factors evaluations of nighttime auto accidents. Transportation Lawyers Association, Annual Meeting Proceedings, May 2013.

Khan FS, Cades DM, Krauss DA. Cyclist and pedestrians vs. cars: Cars win! A human factors perspective. Feature Article in the Illinois Association of Defense Trial Counsel Quarterly 2012; 22(3):30-33.

Kahn F, Krauss D, Alper S, Droll J, Arndt S, Lakhiani S, Cades D. Do people heed warnings at gas stations? Michigan Defense Trial Counsel, May 2012.

Arndt S, Young D, Krauss D. Human factors issues in trucking—What does a qualified expert need to know? Trucking Law Seminar, Phoenix, AZ, April 17, 2008.

Presentations and Posters

Krauss D, Hall D, Bamberger SK, Bennett S. No deadheading here: The power and weight of human factors expert testimony. American Trucking Association Forum for Motor Carrier General Counsel, Bellevue, WA, 2016.

Clausner TC, Fox JR, Krauss DA. Comprehension and production of graphs that metaphorically express linguistic semantic event structure. 8th International Cognitive Linguistics Conference, La Rioja, Spain, 2003.

Krauss DA, Engel SA. Effects of stimulus crowding in human extrastriate cortex. Meeting of the Society for Neuroscience, San Diego, CA, 2001.

Krauss DA, Engel SA. Differential effects of crowding on feature detection and letter recognition. Meeting of the Cognitive Neuroscience Society, New York, NY, 2001.

Krauss DA, Engel SA. Perceptual learning in color classification. Meeting of the Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL, 2000.

Polk TA, Krauss D, Nelson J, Pond H, Raheja A, Farah MJ. The development of abstract letter identities: Evidence for a contextual hypothesis. Annual Meeting of the Psychonomics Society, 1998.

Project Experience

Evaluated the visibility of pedestrians, tractor-trailer combinations, motorcycles and other vehicles on roadways under various reduced-lighting conditions

Analyzed the performance capabilities, including looking behavior and perception-response time, for drivers, riders and pedestrians under a variety of lighting and traffic conditions.

Created representative low-light photographs to use as demonstrative exhibits using uniquely developed and validated software and photography techniques.

Assisted companies with development and revision of product warnings and instructions for a wide range of products including those used in home, occupational, recreational, and agricultural settings.

Peer Reviews

Human Factors and Ergonomics Society

SAE International (Society of Automotive Engineers)

Worth Publishers

Accident Analysis and Prevention

Sustainability

Behavioral Science