BIOGRAPHICAL SKETCH

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NAME: Arsal, Güler

eRA COMMONS USER NAME (credential, e.g., agency login):

POSITION TITLE: Postdoctoral Research Fellow

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
Middle East Technical University, Ankara, Turkey	B.S.	07/2001	Physical Ed. & Sports
Middle East Technical University, Ankara, Turkey	M.S.	08/2004	Psychomotor Learning
Florida State University, Tallahassee, FL, USA	Ph.D.	05/2013	Sport Psychology
University of Huddersfield, Huddersfield, UK	Postdoctoral	01/2017	Applied Cognition

A. Personal Statement

My main research interests lie in the area of skilled performance, and on improving human performance through training and technological design. I study human performance in both laboratory and real-world settings using cognitive task analysis techniques (e.g., goal-directed task analyses and critical decision method interviews) and cognitive process-tracing methods (e.g., think-aloud reports and verbal protocol analysis). For example, as part of the Applied Cognition and Cognitive Engineering research group at the University of Huddersfield, I assessed the impact of high-tech sensors on military helicopter pilots' ability to operate safely in degraded visual environments (i.e., darkness, fog, and mist). For my dissertation research, I examined the real-time cognitive activities of golfers by eliciting concurrent verbal reports from skilled and less-skilled golfers while they completed golf-putting tasks that varied in difficulty. At present, I am an IB Milwaukee Research Fellow with the Envision Research Institute, working under the mentorship of Dr. Paul Ward, a Professor of Applied Cognitive Science at the University of Northern Colorado and Dr. Alex Chaparro, a Professor of Human Factors at Embry-Riddle Aeronautical University. My current research investigates the cognitive processes underlying effective and efficient wayfinding in the blind and visually impaired (BVI). Specifically, I am investigating and documenting the critical cognitive skills and strategies used by BVI passengers for safe and efficient travel on public transportation.

B. Positions and Honors

Positions and Employment

2002 – 2007 Research Assistant, Department of Physical Education & Sports, Middle East Technical University, Ankara, Turkey
2007 – 2011 Graduate Research Assistant, Learning Systems Institute, Florida State University, Tallahassee, Florida, USA
2011 – 2013 Teaching Assistant, Department of Educational Psychology & Learning Systems, Florida State University, Tallahassee, FL
2011 – 2013 Graduate Research Assistant, Department of Psychology, Florida State University, Tallahassee, Florida, USA
2016 – 2017 Postdoctoral Research Fellow, School of Human & Health Sciences, University of Huddersfield, Huddersfield, UK
2018 – Postdoctoral Research Fellow, Envision Research Institute, Wichita, KS

Other Experience and Professional Memberships

2010	Certification in Measurement and Statistics, Department of Educational Psychology and Learning Systems, College of Education, Florida State University
2014 –	Ad-hoc reviewer for the following journals: Psychology of Sport and Exercise; International Journal of Sport and Exercise Psychology; Sport, Exercise, and Performance Psychology
2015	Invited lecture given to undergraduate students at Middle East Technical University, Turkey (in the College of Education)
2015 – 2016	Cyber Defense Exercises, Norwegian Defence Cyber Academy (Forsvaret Ingeniørhøgskole) Camp Jørstadmoen, Lillehammer, Norway
2016	Adaptive Expertise Workshops at Defense Science and Technology Laboratory, UK

C. Contributions to Science

1. **Psychological skill use in athletes:** My dissertation research focused on psychological skill use during golf putting. I compared golfers' real-time cognitions during putting—as assessed using concurrent, think-aloud verbal reports—with self-report measures of their general (i.e., historical) use of psychological skills during competition. Additionally, I assessed skill-related differences in psychological skill use, and manipulated task difficulty and competitive anxiety. Results indicated a moderate, positive correlation between the concurrent verbal-report and self-report measures of psychological skill use. However, although previous studies that employed self-report measures found that skill level affected psychological skill use, this difference was not observed in the concurrent verbal report data I elicited. My study represents a step toward better understanding and measurement of psychological skill use in athletes.

    - Arsal, G. (2013). Investigating skilled and less-skilled golfers' psychological preparation strategies: The use of a think-aloud cognitive process-tracing measure (Doctoral dissertation). Florida State University: Tallahassee, FL.

2. **Skilled performance and skill acquisition:** Skilled performers attend, perceive, encode and retrieve information differently from their less-skilled counterparts, particularly in their domain of expertise. Two of my publications focused on skilled performance and skill acquisition. The first one concerned the cognitive and behavioral strategies employed by expert orienteers to circumvent natural limitations on attention. In the second one, two competing accounts of skilled performance, the "automaticity" account and "cognitive control" account, were explored. The evidence supporting the automaticity account in relation to the performance of motor tasks was critically reviewed. By examining thoughts of less-skilled and more-skilled golfers, several predictions of these accounts were tested. The results supported the cognitive control account of skilled performance. This finding suggested that the path to skilled performance involves the acquisition of more refined, and higher level, cognitive representations.

    - Eccles, D. W., & Arsal, G. (2015). How do they make it look so easy? The expert athlete's cognitive advantage. Journal of Sports Sciences, 33, 609–615.
    - Arsal, G., Eccles, D. W., & Ericsson, K. A. (2016). Cognitive mediation of putting: Use of a think-aloud measure and implications for studies of golf-putting in the laboratory. Psychology of Sport and Exercise, 27, 18–27.

3. **Think-aloud method:** The think-aloud method, an introspective method for eliciting thoughts during task performance, addresses shortcomings of traditional interview-based methods of understanding participants' thinking. However, qualitative researchers have given little consideration to this method as an option for understanding thought. In one of my publications, we provided general guidance about applying the method and ideas for how the method might be integrated with more traditional qualitative research methods.

    - Eccles, D. W., & Arsal, G. (2017). The think aloud method: What is it and how do I use it? Qualitative Research in Sport, Exercise and Health, 9, 514–531.

Complete List of Published Work in Google Scholar:
https://scholar.google.com/citations?user=aTAL9G8AAAAJ&hl=en&oi=ao

D. Additional Information: Research Support and/or Scholastic Performance

Ongoing Research Support

Envision Research Fellowship, IB Milwaukee and Envision Research Institute (2/1/2018 – 1/31/2019)
Project Title: Improving Public Transportation Accessibility
Aim: To investigate and document critical cognitive skills and strategies used by BVI passengers for safe and efficient travel on public transportation. To determine the relevant navigation cues and information used by BVI, this research will take a mixed-methods approach by using a range of observational, cognitive task analysis (CTA), and cognitive process-tracing (CPT) techniques.
Role: Principle Investigator

Completed Research Support

Defense Science and Technology Laboratory, Ministry of Defense, UK (1/2016 – 1/2017)
Project Title: Future Integrated Vision Enablers Research
Role: Postdoctoral researcher, School of Human & Health Sciences, University of Huddersfield, UK