

BIOGRAPHICAL SKETCH

NAME: Karim, A.K.M. Rezaul

eRA COMMONS USER NAME (credential, e.g., agency login): rkarim610

POSITION TITLE: Postdoctoral Research Fellow

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
University of Dhaka Dhaka, Bangladesh	B.Sc. with Honors	06/1996	Psychology
University of Dhaka Dhaka, Bangladesh	M.Sc.	06/1997	Psychology
Kanazawa University Kanazawa, Japan	Ph.D.	03/2010	Psychology (Visual Perception)
Envision Research Institute Wichita, KS, USA & The Smith-Kettlewell Eye Research Institute San Francisco, CA, USA	Postdoctoral	01/2017	Neuroscience & Blindness Rehabilitation

A. Personal Statement

I have broad-based knowledge of science and a wealth of expertise in multidisciplinary research. I have shown high commitment and independence since the early stages of my career. I have mastered leadership and project management skills during my previous study and mentorship at work (I mentored both undergraduate and graduate level research projects, including a PhD student). As a professional scientist, I have demonstrated excellent mobility and the ability to build successful international collaborations, making good academic network to gain experience, and demonstrate commitment to the current field of my interest.

The proposed research project on tactile object understanding and characterization is a novel and fascinating topic of scientific enquiry. My aspiration is to investigate tactile aesthetics in the blind and sighted people by employing the novel behavioral measures in combination with functional Magnetic Resonance Imaging (fMRI) techniques. I have the expertise, leadership, and motivation necessary to successfully carry out this project. As a postdoctoral fellow on ERI-funded grants, I have laid the groundwork for this research by manufacturing the necessary tactile stimuli, preparing the standard tactile rating scales, and by establishing strong ties with community providers that will make it possible to recruit and track participants over time. As per timeline, I have already successfully executed the behavioral part (four experiments) of this project, demonstrated some interesting findings about the perception of tactile beauty (unpublished work), and also produced and submitted a couple of review papers for publication in the relevant international journals. The fMRI part of the project builds logically on the findings of the behavioral experiments. During the first year of my training at ERI and SKERI I have cultivated the technical skills in how to work with blind populations using EEG and fMRI techniques, and still getting more training in order to cultivate skills in how to analyze fMRI data using different software such as MatLab and Stanford VISTA LAB. Furthermore, I have successfully completed MRI safety training at the Sandler Neurosciences Center, University of California, San Francisco, and am awaiting the offer of a user-training. Thus I am adequately equipped to carry out my fMRI research independently with utmost care of the laboratory safety, and also analyze and interpret the fMRI data.

Postdoctoral Scientist/Researcher: **Karim, A.K.M. Rezaul**

Karim, A.K.M.R., & Proulx, M.J. (Submitted). The neural basis for perceiving aesthetics through touch with and without visual experience.

Karim, A.K.M.R., Proulx, M.J., & Likova, L. (Under preparation). Directionality bias in visuospatial functioning: Anticlockwise or clockwise?

B. Positions and Honors

Permanent Positions

10/2000 – 04/2002	Lecturer in Educational Psychology, Institute of Education and Research (IER), University of Dhaka, Bangladesh
04/2002 – 02/2004	Lecturer, Department of Psychology, University of Dhaka, Bangladesh
02/2004 – 12/2010	Assistant Professor, Department of Psychology, University of Dhaka, Bangladesh
12/2010 – 10/2013	Associate Professor, Department of Psychology, University of Dhaka, Bangladesh
10/2013 – Date	Professor, Department of Psychology, University of Dhaka, Bangladesh
01/2015 – Date	Postdoctoral Research Fellow, Envision Research Institute, Wichita, KS, USA

Honorary Position

08/2001 – 02/2006	Invited Lecturer, Bangladesh Institute of Special Education, Dhaka, Bangladesh
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Professional Activities

2000 –	Member, Bangladesh Psychological Association (BPA)
2000 –	Member, South Asian Association of Psychologists (SAAP)
2007 –	Member, Japanese Universities Alumni Association in Bangladesh (JUAAB)
2007 – 2009	Member, Vision Society of Japan (VSJ)
12/2013 –	Member, Editorial and Advisory Board, International Journal of Interdisciplinary and Multidisciplinary Studies (IJIMS), India, http://www.ijims.com/board.php
07/2014 –	Member, Editorial Board, Universal Journal of Psychology, USA http://www.hrpub.org/journals/jour_editorialboard.php?id=94

Honors and Awards

1997	Prof. M. U. Ahmed Trust Fund's Gold Medal, University of Dhaka, Bangladesh
2000	National Science and Technology (NST) Fellowship, Ministry of Science and Technology, Bangladesh
04/2006 – 03/2007	Monbukagakusho Scholarship (Research), Ministry of Education, Culture, Sports, Science, and Technology (MEXT), Japan
04/2007 – 03/2010	Monbukagakusho Scholarship (Doctoral), Ministry of Education, Culture, Sports, Science, and Technology (MEXT), Japan
01/2015 – 01/2017	Postdoctoral Fellowship, Envision Research Institute, Wichita, KS, USA

C. Contribution to Science

Full list of publications: <https://scholar.google.com/citations?user=w3DaCVYAAAAJ&hl=en>

1. Socio-cultural factors mediate personality and intellectual capacity

People of appealing personality and high intelligence are highly valued and appreciated in every society. I have investigated how these qualities are mediated by different socio-cultural factors, the factors which are oftentimes overlooked in non-western context. In a couple of studies I measured personality orientation of adult humans by using the Allport-Vernon-Lindzey Study of Values. The first study demonstrated that Madrasah (a place of Islamic education) students were more theoretical and religious whereas college (a place of general education where no religious training is given) students were more economic and aesthetic (**Karim & Rahman, 2001**). However, such a difference was not observed in political and social values. A second study showed that the nature of governance can shape human values (Hossain & **Karim, 2005**). Here, the public college teachers demonstrated higher economic and political values than the private college teachers and university teachers.

The private college teachers exhibited higher social and religious values than the public college teachers and university teachers. The university teachers, on the contrary, were more aesthetic than both the public and private college teachers. Thus far I have demonstrated that human values are mediated by the ideology the educational training is based on, and by the governance or autonomy being practiced within the system.

I also conducted another study to examine the impacts of socio-cultural factors on the intellectual capacity of school children. The study demonstrated that the intellectual capacity of children in the upper socioeconomic class was higher than those in the middle and lower socioeconomic classes (Sorcar, **Karim**, & Shahinuzzaman, 2006). The middle class children, on the contrary, did intellectually better than the lower class children up to the age of five, and at the age of six this trend became reversed which continued to the age of nine. Secondly, the rural children demonstrated lower intellectual capacity than did the urban children up to the age of six, and at the age of seven the trend was reversed which continued to the age of nine. The study further revealed that children's intellectual capacity increases with age and school grade, with the male children showing higher level of intelligence as compared to the female children. The results indicate that the development of intellectual capacity is influenced by the complex interaction of multiple socio-cultural factors.

Karim, A. K. M. R., & Rahman, H. (2001). Education system-linked differences in basic areas of value system. *The Dhaka University Journal of Psychology*, 25, 57-64.

https://www.researchgate.net/profile/AKM_Karim2/publications?sorting=newest&page=2

Hossain, M. A., & **Karim**, A. K. M. R. (2005). Human values and type of governance in education sector. *The Dhaka University Journal of Biological Sciences*, 14(1), 107-117.

https://www.researchgate.net/profile/AKM_Karim2/publications?sorting=newest&page=2

Sorcar, N. R., **Karim**, A. K. M. R., & Shahinuzzaman, M. (2006). Development of norms for the Seguin Form Board Test for Bangladeshi children. *The Dhaka University Journal of Psychology*, 30, 49-60.

https://www.researchgate.net/profile/AKM_Karim2/publications?sorting=newest&page=2

2. Culture determines the motives of addictive behavior

Although many of our behaviors and motives are biologically inherited they can further be shaped and modified by socio-cultural factors. Therefore cross-cultural psychology of human behavior has become an area of great interest. Most of the work in this area has focused on central themes, such as human affect, cognition, conceptions of the self etc. Though issues of psychopathology, anxiety, depression, and drug addiction, have also been of great attention, very little work has addressed the underlying motives of addictive behaviors, such as substance abuse. In a non-Muslim developed society, such as America, people are born and raised in an arena of increased drug and alcohol use whereas in a conservative Muslim society, such as Bangladesh, drinking behavior is strictly maintained and controlled by the social and religious values or laws. So, there are reasons to assume that the motives of substance abuse might vary across these cultures. One of my early collaborative studies directly addressed this issue which demonstrated, in support of the assumption, that there are significant cultural differences in the motives of substance abuse. As predicted, hedonism and intoxication motives were significantly stronger in American drug addicts whereas curiosity motive was stronger in Bangladeshi drug addicts (Dively, Gilbreath, Cosgrove, Rinker, Leininger, Vernon, Hossain, **Karim**, Huq, & Mahmud, 2004). Life stress appeared to be the most influential drive underlying drug addiction in Bangladesh while social and hedonism drives appeared to be the least influential ones. In American culture, intoxication appeared to be the most influential drive and curiosity the least influential one. These findings suggest the need for development of culture-specific motive-based management strategies for substance abuse and health problems, especially among the vulnerable young population.

Dively, J., Gilbreath, D., Cosgrove, P., Rinker, A., Leininger, J., Vernon, A., Hossain, M. S., **Karim**, A. K. M. R., Huq, M., & Mahmud, S. H. (2004). Substance abuse across cultures: Bangladesh and America. *Indian Journal of Psychological Issues*, 12(1 & 2), 4-19.

https://www.researchgate.net/profile/AKM_Karim2/publications?sorting=newest&page=2

3. It is family, not ethnicity, that determines how to regulate emotion

Emotions are part of our everyday life. But, sometimes we experience intense emotions that need to be managed in order to function well in the family, workplace, and society. Managing or regulating emotions means understanding and filtering emotional experience, developing and using healthy strategies to control

uncomfortable emotions and engaging in appropriate behaviors when distressed. Because humans are born and raised primarily in a family, and come into interaction with the broader community, they might learn and develop these skills and strategies from the family and ethnic community. I tested this assumption in a few studies. One of these studies demonstrated that emotion regulation does not vary between genders and between ethnic groups (Matsumoto, Hossain, **Karim**, & Mahmud, 2007). A second study showed that children's emotion regulation is significantly associated with parents' marital adjustment and affect (Ansary & **Karim**, 2011). A third study revealed that children's cognitive emotion regulation varies with parenting style, but not with family type and gender (**Karim**, Sharafat, & Mahmud, 2013). Amongst the three types of parenting, authoritative parenting was the strongest predictor of the overall adaptive emotion regulation and authoritarian parenting was the strongest predictor of the overall less adaptive emotion regulation; however, permissive parenting was unable to predict any kind of emotion regulation. These findings have important implications for parents, caregivers and child psychologists and other professionals working with children or adolescents.

Matsumoto, D., Hossain, M. S., Uddin, M. K., **Karim**, A. K. M. R., & Mahmud, S. H. (2007). Ethnic and gender equalities in emotion regulation. *Bangladesh Psychological Studies*, 17, 27-36.

https://www.researchgate.net/profile/AKM_Karim2/publications?sorting=newest&page=2

Ansary, T. M. & **Karim**, A. K. M. R. (2011). Cognitive emotion regulation in children as predicted by parents' marital adjustment and their nature of affect. *Bangladesh Psychological Studies*, 21, 1-16.

Karim, A. K. M. R., Sharafat, T., & Mahmud, A. Y. (2013). Cognitive emotion regulation in children is attributable to parenting style, not to family type and child's gender. *International Journal of Social Science and Engineering*, 7 (2), 112-119. <http://waset.org/Publications/cognitive-emotion-regulation-in-children-is-attributable-to-parenting-style-not-to-family-type-and-child-s-gender/9996937>

4. The clockwise bias in visuospatial perception: A novel demonstration about visual functioning

Perceptual asymmetry has been widely known and extensively studied in the last few decades. An in-depth review of the literature in visual psychophysics and visual neuroscience has demonstrated asymmetries in a wide range of perceptual phenomena that I categorized as the 'what' of perceptual asymmetries (**Karim** & Kojima, 2010c). I proposed that these asymmetries have inborn neural/physiological origins, the *primary why*, but can be also susceptible to visual experience, the *critical why*, which can promote or block the asymmetries by altering neural functions. This great review has been highly cited in cognitive and neuroscience works since its publication in 2010. I also conducted a couple of empirical studies which demonstrated some novel kind of perceptual asymmetry, in addition to the evidence of the visual field effect and orientation effect. That is, I showed that human visuospatial performance can vary even within a specific orientation depending on spatial organization or layout of the stimuli. In one study, for example, I have found that for a pair of horizontal light bars arranged side-by-side with a large gap between them observers were, on average, better at discriminating a vertical offset if the right-hand bar was below the left-hand bar than vice versa (**Karim** & Kojima, 2010a). Similarly, for a pair of vertically oriented light bars, one above the other, the horizontal offset detection was better if the lower bar was on the left of the upper bar rather than on its right. In another study, I have shown that this effect can be generalized to the oblique orientation (**Karim** & Kojima, 2010b). However, the effect decreased more or less with training in the first study but not in the second one, indicating that perhaps there is also orientation effect on sensitivity to training. Based on these findings I theorized that human visuospatial functioning can mostly be biased to the clockwise orientation as most of the people are right-handed.

Karim, A.K.M.R., & Kojima, H. (2010a). Configurational asymmetry in vernier offset detection. *Advances in Cognitive Psychology*, 6, 66-78. PMID: 20930953 PMCID: PMC2950944

Karim, A.K.M.R., & Kojima, H. (2010b). Perceptual asymmetry in vernier offset discrimination: A similar trend between the cardinal and oblique orientations. *The Japanese Journal of Psychonomic Science*, 29(1), 1-16. https://www.researchgate.net/profile/AKM_Karim2/publications?sorting=newest&page=2

Karim, A.K.M.R., & Kojima, H. (2010c). The what and why of perceptual asymmetries in the visual domain. *Advances in Cognitive Psychology*, 6, 103-115. PMID: 21228922 PMCID: PMC3019986

5. Psychometric contribution: Breaking down the barriers to research in nonwestern cultures

Psychometrics offers psychological tools and techniques to objectively measure and quantify human cognition and behaviors. To date scientists have developed many tools and techniques in different areas of

psychological and behavioral sciences. But, most of them are not culture-free as they are based on and standardized for the populations of developed countries. This has led to the poor or limited understanding of the science of behavior. Examining factor structure or dimensionality of such tools in new cultures is important for accurate specifications of theories and theory driven research. With this motivation I have developed or validated a number of psychometric tools in Bangladeshi culture that has broken down the barriers to research in the country at least to some degree. Specifically, my first contribution appeared by the publication of a Likert type scale for measuring study habits of the secondary school students (**Karim & Banu, 2000**). For this piece of work I was awarded National Science and Technology (NST) Fellowship' 2000 by the Ministry of Science and Technology, Bangladesh. My second contribution is the construction of another rating scale for measuring attitude towards satellite television (Sorcar, Uddin, & **Karim, 2003**). I have validated the Internet Addiction Test in Bangladeshi culture that has both research and clinical significance for managing and guiding the youngsters who are addicted or vulnerable to internet addiction (**Karim & Nigar, 2014**). This scholarly work has been cited in a number of studies in Internet addiction and other related areas over the world. I have validated the Miller Social Intimacy Scale (Nigar, **Karim, & Sagar, 2014**), the Organizational Police Stress Questionnaire (Sagar, **Karim, & Nigar, 2014**), the Operational Police Stress Questionnaire (Sagar, **Karim, & Nigar, 2014**), and the Satisfaction with Life Scale for police population (Sagar & **Karim, 2014**) in Bangladesh. Very recently, I have validated the 'How I Think' questionnaire to assess cognitive distortions in Bangladeshi adolescents (**Karim & Begum, 2016**). The development of these measures has created opportunities of research in the country for the advancement of psychological and behavioral sciences.

Karim, A. K. M. R., & Banu, S. (2000). A scale for measuring study habits of the secondary school students. *The Dhaka University Journal of Psychology, 24*, 15-25.

https://www.researchgate.net/profile/AKM_Karim2/publications?sorting=newest&page=2

Karim, A.K.M.R., & Nigar, N. (2014). The Internet Addiction Test: Assessing its psychometric properties in Bangladeshi culture. *Asian Journal of Psychiatry, 10*, 75-83. PMID: 25042957

Nigar, N., **Karim, A. K. M. R., & Sagar, M. M. H. (2014).** The Bangla version of the Miller Social Intimacy Scale: An exploratory study. *Universal Journal of Psychology, 2*(8), 241-247. doi: 10.13189/ujp.2014.020801

Sagar, M. M. H., **Karim, A. K. M. R., & Nigar, N. (2014).** Factor structure for organizational police stress questionnaire (PSQ-Org) in Bangladeshi culture. *Universal Journal of Psychology, 2*(9), 265-272. doi: 10.13189/ujp.2014.020901

Karim, A. K. M. R., & Begum, T. (2016). The How I Think questionnaire: Assessing its psychometric properties in Bangladeshi culture. *Asian Journal of Psychiatry, 21*, 9-16. doi: <http://dx.doi.org/10.1016/j.ajp.2016.02.004>

D. Research Support

Ongoing Research Support

ERI-F02-ARK1

Karim (PI) 01/26/15 – 01/25/17

“Tactile Object Understanding and Characterization”

The goal of this project is to investigate how people perceive objects through the sense of touch, how they characterize them, and whether this can be affected by early visual experience through the study of congenitally blind, late-onset blind and blindfolded (sighted) participants, by employing the novel behavioral measures in combination with functional Magnetic Resonance Imaging (fMRI) techniques.

Role: PI

Completed Research Support

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Karim (PD)

09/01/13 – 08/31/14

11(516)UGC/SSR/2013/4654 (Eng)

UGC/Bangladesh

“Loneliness and Self-disclosure in Young Adults as Related to Gender, Gender-based Relationships in Family and Marital Status”

The goal of this project was to examine how loneliness and self-disclosure in young adults are associated with their gender, gender-based relationship in the family and marital status in Bangladesh.

Role: PD