BIOGRAPHICAL SKETCH

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1996-2017	Professor of Audiology, Department of Communication Sciences and Disorders, University of Wisconsin–Madison
1996-2017	Professor of Psychology, Department of Psychology, University of Wisconsin–Madison
2006	Chair, Department of Communicative Disorders, University of Wisconsin–Madison
2017-present	Professor of Audiology, Department of Communication Sciences and Disorders, University of South Florida, Tampa

Other Professional Activities and Honors

- Ad hoc reviewer for the National Science Foundation
- Ad hoc reviewer for the National Institutes of Deafness and Communicative Disorders
- Ad hoc reviewer for Israel Science Foundation
- Ad hoc reviewer for National Energy Systems, Air Force Office of Scientific Research
- Ad hoc reviewer for United States Civilian Research and Development Foundation
- Consultant on various NSF and NIH Grants
- Editorial Consultant for the *Journal of the Acoustical Society of America*, *Journal of Experimental Psychology, Perception and Psychophysics*, and *IEEE Transactions on Audio, Speech and Language Processing*
- Fellow, Acoustical Society of America
- Former Member of Committee on Psychological and PhysP7 (ydy)3.7 (s)_0sP7 ()Tj 11 (o,)]TJ 0 Tc ( )T stical 3vie

c. Gilbertson, L., and Lutfi, R.A. (2015). Estimates of decision weights and internal noise for the masked discrimination of vowels by young and elderly adults. J. Acoust. Soc. Am., 137:EL403-407. PMCID: PMC4441709.
d. Gilbertson, L. and Lutfi, R.A. (2014). Correlations of decision weights and cognitive function for the masked discrimination of vowels by young and old adults. Hear. Research, 317:9-14. PMCID: PMC4253306

2. Research on hearing has long been challenged with understanding our exceptional ability to 'hear out' individual sounds in a mixture. Two general approaches to the problem have been taken using sequences of tones as stimuli. The first has focused on our tendency to hear sequences, sufficiently separated in frequency, split into separate cohesive streams (auditory streaming). The second has focused on our ability to detect a change in one sequence, ignoring all others (auditory masking). The two phenomena are clearly related, but that relation has never been evaluated analytically. We have used detection theory to develop a theoretical analytic relation between multitone streaming and masking that underscores the expected similarities and differences between these phenomena and the predicted outcome of experiments in each of toneso p (tr)63e, iuDK.4 (CI)L153 T/TT0 2 0f 1.721 0 Td (945j 0.001 Tc 0.279 0 Td [(to dev)3.8di)-1 (to)-1.7 (ke

4. We rely critically on our ability to identify simple objects and events from sound to function normally in the world. Yet, despite its importance, little is known regarding this ability. Perturbation analysis is a psychophysical method that has enjoyed success as a means of revealing decision processes underlying object identification in vision [Murray, R.F. 2011. J. of Vision 11**,** 1-25]. We have adapted this approach to the problem of sound source identification in audition. Three new findings have been made using this approach. They include (1) an unexpected constraint on identification imposed by limited auditory sensitivity, (2) an overriding influence of the highest level spectral prominences on identification, and (3) reliable individual differences in target enhancement and noise cancellation in the identification of targets in noise.

    a. Lutfi, R.A., Liu, C.J., and Stoelinga, C.N.J. (2013). A new approach to sound source identification. In *Basic Aspects of Hearing: Physiology and Perception*(vol. 787, pp. 203-213). Edited by B.C.J. Moore,, R.D. Patterson, I.M. Winter, R.P. Carlyon, and H.E. Gockel. (Springer: New York). ISBN: 978-1-4614-1589-3
    b. Lutfi, R.A., and Stoelinga, C.N. (2010). Sensory constraints on the auditory identification of the material and geometric properties of struck bars. J. Acoust. Soc. Am., 127(1):350-360. doi: 10.1121/1.3263606. PMCID: PMC2821150.
    c. Lutfi, R.A., Liu, C.J., and Stoelinga, C. (2008). Level dominance in sound source identification. J. Acoust. Soc. Am., 124(6):3784-3792. doi: 10.1121/1.2998767. PMCID: PMC2737249
    d. Lutfi, R.A. (2008). Human sound source identification. In *Springer Handbook of Auditory Research: Auditory Perception of Sound Sources* (pp. 13-42). Edited by W.A. Yost, A.N. Popper, and R.R. Fay (Springer-Verlag, New York). ISBN: 978-0-262-01341-3.

5. An unexpected finding of our previous work is that listeners show highly replicable, individualistic patterns of decision weights on frequencies in spectral discrimination tasks – what we refer to as *individual listening styles.* Importantly, these listening styles have been replicated over a period of months and are only manifest in the measurement of the decision weights as performance levels are found to be remarkably similar across listeners. We, like many researchers, have attributed these listening styles to peculiarities in how listeners attend to different frequencies, but our more recent work suggests they may also be influenced by how irregularities in cochlear micromechanics affect the relative level of frequencies transduced in individual cochleae (Lee et al., 2016).

    a. Lee, J., Heo, I., Chang, A-C., Bond, K., Stoelinga, C., Lutfi, R., and Long, G. (2016). Individual differences in behavioural decision weights related to irregularities in cochlear mechanics. Adv. Exp. Med. Biol., 894:457-65. doi: 10.1007/978-3-319-25474-6_48. PMCID: PMC5079619.
    b. Lutfi, R.A., and Liu, C.J. (2007). Individual differences in source identification from synthesized impact sounds. J. Acoust. Soc. Am., 122(2d37 (enc).9[(and Li)-1 (u, f110.32 2e-13 Td [(d375w (-)Tj 0.5Lted thes)3.8