

Yung-Fong Hsu

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- EDUCATION

1998 Ph.D. in Psychology, University of California, Irvine

1988 B.S. in Psychology, National Chengchi University, Taipei, Taiwan

- ACADEMIC EMPLOYMENT

2017 – present Professor, National Taiwan University, Taipei, Taiwan

2010 – 2017 Associate Professor, National Taiwan University, Taipei, Taiwan

2005 – 2010 Assistant Professor, National Taiwan University, Taipei, Taiwan

- RESEARCH INTERESTS

- Emotion modulation in dual processing of decision making
- A threshold-theory account of psychometric functions with response confidence
- The representational measurement approach to psychophysics
- Feedback-based decision making and reward prediction errors
- A stochastic semiorder approach to paneled attitudinal thermometer data

- COURSES OFFERED

- Experimental Design, (Fechnerian) Psychophysics, Mathematical Methods in Psychology, Intermediate Statistics, General Psychology, Statistics in Psychology and Education

- JOURNAL ARTICLES (*: Corresponding author(s); †: Co-first authors)

Cheng, C.†, Huang, Y.-J.†, & **Hsu, Y.-F.*** (in press). Incorporating response confidence into adaptive methods for threshold estimation. *Chinese Journal of Psychology*. (in Chinese)

Liu, H.-H., Liu, C.-M., Hsieh, M. H., Chien, Y.-L., **Hsu, Y.-F.**, & Lai, W.-S.* (2022). Dysregulated affective arousal regulates reward-based decision making in patients with schizophrenia: An integrated study. *Schizophrenia*, 8:26. <https://doi.org/10.1038/s41537-022-00234-y>

Cheng, C., Lay, K.-L.*, **Hsu, Y.-F.***, & Tsai, Y.-M. (2021). Can Likert scales predict choices? Testing the congruence between using Likert scale and comparative judgment on measuring attribution. *Methods in Psychology*. <https://doi.org/10.1016/j.metip.2021.100081>

- Doble, C. W.*, & **Hsu, Y.-F.** (2020). On the functional forms in a psychophysical law of similarity under a subtractive representation. *Journal of Mathematical Psychology*, 98, 102421. <https://doi.org/10.1016/j.jmp.2020.102421>
- Regenwetter, M.*, **Hsu, Y.-F.**, & Kuklinski, J. H. (2019). Towards meaningful inferences from attitudinal thermometer ratings. *Decision*, 6, 381-399. (Equal authorship)
- Chiang, Y.-S.*, & **Hsu, Y.-F.** (2019). The asymmetry of altruistic giving when givers outnumber recipients and vice versa: A dictator game experiment and a behavioral economics model. *Journal of Economic Psychology*, 73, 152-160.
- Liu, H.-H.[†], Hwang, Y.-D.[†], Hsieh, M. H., **Hsu, Y.-F.***, & Lai, W.-S.* (2017). Misfortune may be a blessing in disguise: Fairness perception and emotion modulate decision making. *Psychophysiology*, 54, 1163-1179.
- Chiang, Y.-S.*, & **Hsu, Y.-F.** (2017). Direct election of group decision-makers can facilitate cooperation in the public goods game. *Group Decision and Negotiation*, 26, 197-213.
- Hsu, Y.-F.***, & Iverson, G. J. (2016). Conditions under which affine representations are also Fechnerian under the power law of similarity on the Weber sensitivities. *Journal of Mathematical Psychology*, 75, 150-156.
- Liu, H.-H., Hsieh, M. H., **Hsu, Y.-F.***, & Lai, W.-S.* (2015). Effects of affective arousal on choice behavior, reward prediction errors, and feedback-related negativities in human reward-based decision making. *Frontiers in Psychology*, 6:592. doi: 10.3389/fpsyg.2015.00592
- Hsu, Y.-F.***, & Doble, C. W. (2015). A threshold theory account of psychometric functions with response confidence under the balance condition. *British Journal of Mathematical and Statistical Psychology*, 68, 158-177.
- Li, C.-T., Lai, W.-S.*, & **Hsu, Y.-F.*** (2014). Using a reinforcement learning model and Bayes factors to study gender differences and personality correlations in reward prediction errors. *Chinese Journal of Psychology*, 56, 453-466. (in Chinese)
- Hsu, Y.-F.***, & Chin, C.-L. (2014). On the limitations of fixed-step-size adaptive methods with response confidence. *British Journal of Mathematical and Statistical Psychology*, 67, 266-283.
- Li, C.-T.[†], Lai, W.-S.[†], Liu, C.-M., & **Hsu, Y.-F.*** (2014). Inferring reward prediction errors in patients with schizophrenia: A dynamic reward task for reinforcement learning. *Frontiers in Psychology*, 5:1282. doi: 10.3389/fpsyg.2014.01282
- Hsu, Y.-F.***, & Tseng, L.-M. (2013). Assessing memory deficits using latent class (hierarchical) multinomial processing tree modeling: An illustration using data from clinical groups in Taiwan. *Chinese Journal of Psychology*, 55, 57-73. (in Chinese)

- Chen, Y.-C., Chen, Y.-W., **Hsu, Y.-F.**, Chang, W.-T., Hsiao, C. K., Min, M.-Y., & Lai, W.-S.* (2012). Akt1 deficiency modulates reward learning and reward prediction error in mice. *Genes, Brain and Behavior*, 11, 157-169.
- Yang, C.-T.*, **Hsu, Y.-F.**, Huang, H.-Y., & Yeh, Y.-Y. (2011). Relative salience affects the process of detecting changes in orientation and luminance. *Acta Psychologica*, 138, 377-389.
- Hsu, Y.-F.***, Iverson, G. J., & Doble, C. W. (2010). Affine representations in psychophysics and the near-miss to Weber's law. *Journal of Mathematical Psychology*, 54, 256-265.
- Chen, Y.-H., & **Hsu, Y.-F.*** (2010). Convergence of non-parametric adaptive threshold estimation in the yes-no task. *Chinese Journal of Psychology*, 52, 95-112.
- Hsu, Y.-F.***, & Chen, Y.-H. (2009). Applications of non-parametric adaptive methods for simple reaction time experiments. *Attention, Perception, & Psychophysics*, 71, 1664-1675.
- Falmagne, J.-C.*, **Hsu, Y.-F.**, Leite, F., & Regenwetter, M. (2008). Stochastic applications of media theory: random walks on weak orders or partial orders. *Discrete Applied Mathematics*, 156, 1183-1196.
- Hsu, Y.-F.***, & Regenwetter, M. (2007). Applications of stochastic media theory to 1992, 1996, and 2000 national election study panel data. *Chinese Journal of Psychology*, 49, 225-244.
- Hsu, Y.-F.*** (2005). A generalization of Piéron's law to include background intensity and latency distribution. *Journal of Mathematical Psychology*, 49, 450-463.
- Hsu, Y.-F.**, Regenwetter, M.*, & Falmagne, J.-C. (2005). The tune in-and-out model: A random walk and its application to a presidential election survey. *Journal of Mathematical Psychology*, 49, 276-289.
- Hsu, Y.-F.*** (2005). On measuring the minimum detection time: A simple reaction time study in the time estimation paradigm. *British Journal of Mathematical and Statistical Psychology*, 58, 259-284.

- BOOK CHAPTERS

- Regenwetter, M., & **Hsu, Y.-F.** (2019). Stochastic process models of preference change. In R. Congleton, B. Grofman and S. Voigt (Eds.), *The Oxford Handbook of Public Choice* (Volume 1, pp. 665-682). Oxford University Press.

- MANUSCRIPTS

- Regenwetter, M., Hsu, Y.-F., & Kuklinski, J. H. *A stochastic semiorde approach to paneled attitudinal thermometer data*. In preparation.

Lin, T.-Y., & Hsu, Y.-F. *Incorporating threshold theory into the cultural consensus theory for ordinal categorical data: A simulation study*. In preparation.

Yang, H.-H., & Hsu, Y.-F. *The generalized Robbins-Monro process and its application to psychophysical experiments for threshold estimation*. In preparation.

- GRANTS

2020 – 2022 “Neural correlates of emotion as an arbitrator to reconcile the conflicts within dual processing in the context of decision making under risk” MOST 109-2410-H-002-088-MY2

2019 – 2020 “A threshold-theory extension of the cultural consensus theory for modeling ordinal categorical data” MOST 108-2410-H-002-107

2017 – 2018 “The characterization of the parameters in the psychophysical law of similarity under the Fechnerian framework” MOST 106-2410-H-002-080

2016 – 2017 “Response confidence embedded up-down methods for threshold estimation” MOST 105-2410-H-002-056

2015 – 2018 “Theories and measurement of intelligence and personality: From mathematical modeling to neural mechanism and genetics” Funding for (NTU) library book purchase in the Humanities and Social Sciences, awarded by MOST 104-2420-H-002-020-2E3

2015 – 2016 “On the interplay of psychophysical laws of similarity and affine representations” MOST 104-2410-H-002-051

2012 – 2014 “The role of prediction error in reward and penalty in feedback-based decision tasks: Empirical study and model exploration” NSC 101-2410-H-002-087-MY2

2010 – 2012 “Affine representations in psychophysics and unforced-choice adaptive methods for threshold estimation” NSC 99-2410-H-002-079-MY2

2008 – 2010 “Assessing memory deficits in clinical groups in Taiwan using multinomial processing tree modeling” NSC 97-2410-H-002-162-MY2

2006 – 2008 “Gain control representation and parameter estimates of the generalized Piéron’s law in the reaction time study” NSC 95-2413-H-002-029-MY2

2005 – 2006 “A stochastic application of the semiorder model to the U.S. presidential election panel data” NSC 94-2413-H-002-033

- COLLABORATIVE PROJECTS

08/2021 – 07/2024 Co-PI (with Dr. Churn-Jung Liao in the Institute of Information Science, Academia Sinica, Taiwan) of the project “An exploring study on building affective artificial intelligence by neural-symbolic computing” awarded by MOST (of Taiwan) 110-2221-E-001-022-MY3

- 01/2019 – 12/2021 Co-PI (with Dr. Tai-Li Chou and others in various departments at National Taiwan University and Hospital) of the project “Cross-disciplinary and translational research in aging and neurodegenerative disorders: from basic science to NMDA drug development and clinical study” awarded by the Research Proposal for NTU Core Consortia
- 06/2019 – 12/2020 Co-PI (with Dr. Ming-Kai Pan in the Department of Medical Research, National Taiwan University Hospital) of the project “Explore reward-based decision making and motor coordination by cerebellar EEG technology” awarded by MOST (of Taiwan) 108-2321-B-002-059-MY2
- 04/2013 – 12/2013 Co-PI (with Dr. Yen-Sheng Chiang in the Institute of Sociology at Academia Sinica) of the project “Group decision making in social networks” awarded by the Drunken Moon Lake Integrated Scientific Research Platform, College of Science, National Taiwan University
- 01/2013 – 12/2014 Co-PI (with Dr. Wen-Sung Lai in the Department of Psychology, National Taiwan University) of the project “Investigation of the impact of genders and emotional facial stimuli on the reward prediction errors and neural activities in the brain using brain imaging techniques and reinforcement learning modeling” awarded by NSC (of Taiwan) 102-2420-H-002-008-MY2
- 2008 – 2011 Member of Sub-project 3 of the project “A Study on Pathogenesis of Schizophrenia (SOPAS): Genetic, neurobiological and cognitive science approaches” awarded by the Excellent Research Projects at National Taiwan University

- REVIEWING

- British Journal of Mathematical and Statistical Psychology, Journal of Mathematical Psychology, Psychological Review, Behavior Research Methods, Chinese Journal of Psychology, Frontiers in Psychology, The Spanish Journal of Psychology, Psychiatry Research, Biological Psychology
- Ministry of Science and Technology (formerly National Science Council) Grants applications
- Chiang Ching-Kuo Foundation for International Scholarly Exchange Grants applications
- Economic and Social Research Council (ESRC, in UK) grant applications
- Departmental Review and Benchmarking, Department of Psychology, The Education University of Hong Kong

- CONFERENCE PRESENTATIONS

- 2021 Annual meeting, Taiwanese Psychological Association (online), Taiwan

- 2019 The 5th NTU-Kyoto University International Symposium for Cognitive Neuroscience, National Taiwan University, Taiwan
- 2019 Annual meeting, The European Mathematical Psychology Group, Heidelberg, Germany
- 2018 The 4th NTU-Kyoto University International Symposium for Cognitive Neuroscience, Kyoto University, Japan
- 2018 Annual meeting, The European Mathematical Psychology Group, Genova, Italy
- 2016 Annual meeting, The Psychonomic Society, Boston, MA
- 2016 Annual meeting, The European Mathematical Psychology Group, Copenhagen, Denmark
- 2015 Annual meeting, The Psychonomic Society, Chicago, IL
- 2014 Conference on Theory and Methodology in Configural Perception, National Cheng Kung University, Taiwan
- 2012 Annual meeting, Society for Judgment and Decision Making, Minneapolis, MN
- 2011 Annual meeting, The Psychonomic Society, Seattle, WA
- 2010 Annual meeting, Society for Neuroscience, San Diego, CA
- 2010 Annual meeting, Society for Mathematical Psychology, Portland, OR
- 2009 Annual meeting, The Psychonomic Society, Boston, MA
- 2009 Annual meeting, Taiwanese Psychological Association, National Taiwan University, Taiwan
- 2009 Conference on Survey Research Methodology, Center for Survey Research, Academia Sinica, Taiwan
- 2008 Annual meeting, Taiwanese Psychological Association, National Taiwan Normal University, Taiwan
- 2008 Annual meeting, Society for Mathematical Psychology, Washington D.C.
- 2007 Annual meeting, Society for Mathematical Psychology, Irvine, CA
- WORKSHOPS
 - 2011 The Chinese corpus and R workshop, Research Center for Psychological and Educational Testing, National Taiwan Normal University, Taiwan