

VITA

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BIOGRAPHICAL

Born: November 14, 1953, Yuba City, California
Married: Kitty Knecht; July 31, 1982

EDUCATION

College of the Sequoias, Visalia, California: 1971-1972
University of California, Berkeley, California: 1972-1975 (B.A., Psychology)
University of California, Berkeley, California: 1975-1980 (M.A. and Ph.D., Psychology)

RESEARCH EXPERIENCE

1975-1980: Pre-doctoral Research Assistant
Auditory Research Laboratory, University of California
1980-1988 Parmly Hearing Institute
Assistant Professor, Psychology
Loyola University of Chicago
1988- Associate Professor, Psychology
Adjunct Associate Professor, Parmly Hearing Institute
Loyola University of Chicago

RESEARCH INTERESTS

Human Auditory Perception
Binaural Processing
Neural Mechanisms of Auditory Processes
Decision Theory
Auditory Attention
Human Factors

TEACHING EXPERIENCE

Graduate Courses:
Sensation and Perception
Physiological Psychology
Sensory Processes: Hearing
Sensory Processes: Vision
Seminar in Auditory Processing of Complex Sounds
Seminar in Neurodevelopment
Seminar in Signal Detection Theory

Seminar in Mathematical Modeling of Neural Processes

Undergraduate Courses:

Brain and Behavior

Laboratory in Audition

Laboratory in Psychobiology

Statistics

Biology and Psychology of Perception

Laboratory in Human Information Processing

Laboratory in Experimental Psychology: Sensation and Perception

Cognitive Psychology

Laboratory in Experimental Psychology: Cognition

PROFESSIONAL SOCIETIES

Acoustical Society of America, Fellow.

Psychonomic Society, Member.

Reviewing: Journal of the Acoustical Society of America, Perception and Psychophysics, National Science Foundation

PUBLICATIONS

Haftner, E. R., Dye, R. H., Nuetzel, J. M., & Aronow, H. (1977). "Difference Thresholds for Interaural Intensity," Journal of the Acoustical Society of America 61, 829-834.

Haftner, E. R., Dye, R. H., & Gilkey, R. H. (1979). "Lateralization of Tonal Signals Which Have Neither Onsets Nor Offsets," Journal of the Acoustical Society of America 65, 471- 477.

Dye, R. H. & Haftner, E. R. (1980). "Just-noticeable Differences of Frequency for Masked Tones," Journal of the Acoustical Society of America 67, 1746-1753.

Haftner, E. R., Dye, R. H., & Nuetzel, J. M. (1980). "Lateralization of High-frequency Stimuli on the Basis of Time and Intensity," in Psychophysical, Physiological, and Behavioural Studies in Hearing (G. van den Brink & F.A. Bilsen, eds.), Delft University Press.

Haftner, E. R. & Dye, R. H. (1983). "Detection of Interaural Differences of Time in Trains of High-frequency Clicks as a Function of Interclick Interval and Number," Journal of the Acoustical Society of America 73, 644-651.

Haftner, E. R., Dye, R. H., and Wenzel, E. M. (1983). "Detection of Interaural Differences of Intensity in Trains of High-frequency Clicks as a Function of Interclick Interval and Number," Journal of the Acoustical Society of America 73, 1708- 1713.

Dye, R. H. and Haftner, E. R. (1984). "The Effects of Intensity on the Detection of Interaural Differences of Time in High-frequency Trains of Clicks," Journal of the Acoustical Society of America 75, 1593-1598.

Dye, R. H. and Yost, W. A. (1986). "Masking-level Differences for Trains of Clicks," Journal of the Acoustical Society of America 80, 112-117.

Yost, W. A. and Dye, R. H. (1988). "Discrimination of Interaural Differences of Level as a Function of Frequency," Journal of the Acoustical Society of America 83, 1846-1851.

Yost, W. A., Harder, P. J., and Dye, R. H. (1986). "Complex Spectral Patterns with Interaural Differences: Dichotic Pitch and the 'Central Spectrum,'" in Auditory Processing of Complex Sounds (W. A. Yost and C. S. Watson, eds), Lawrence Erlbaum Associates, Hillsdale, New Jersey.

Shofner, W. P. and Dye, R. H. (1989). "Statistical and ROC analysis of empirical spike count distributions: Quantifying the ability of cochlear nucleus units to signal intensity changes," Journal

of the Acoustical Society of America 86, 2172-2184.

Dye, R. H. (1990). "The Combination of Interaural Information across Frequencies: Lateralization on the Basis of Interaural Delay," Journal of the Acoustical Society of America 88, 2172-2184.

Yost, W. A. and Dye, R. H. (1991). "Properties of Sound Localization by Humans" in Neurobiology of Hearing: The Central Auditory System (R. A. Altschuler, R. P. Bobbin, and D. W. Hoffman, eds), Raven Press, New York.

Haftner, E. R., Dye, R. H., Wenzel, E. M., Knecht, K. (1990). "The Combination of Interaural Time and Intensity in the Lateralization of High-frequency Signals," Journal of the Acoustical Society of America 87, 1702-1708.

Stellmack, M. A. and Dye, R. H. (1993). "The Combination of Interaural Information across Frequencies: The effects of number and spacing of components, onset asynchrony, and harmonicity" Journal of the Acoustical Society of America 93, 2933-2947.

Dye, R. H., Niemiec, A. J., and Stellmack, M. A. (1994). "Lateralization on the Basis of Interaural Envelope Delays: The Effect of Randomizing Component Starting Phase," Journal of the Acoustical Society of America 95.

Dye, R. H., Yost, W. A., Stellmack, M. A., and Sheft, S. (1994). "Stimulus Classification Procedure for Assessing the Extent to Which Binaural Processing Is Spectrally Analytic or Synthetic," Journal of the Acoustical Society of America 96, 2720-2730.

Yost, W. A., Dye, R. H., and Sheft, S. (1995). "The Synthetic-Analytic Listening Task for Modulated Signals," Journal of the Acoustical Society of America 98, 652-655.

Yost, W. A., Dye, R. H., and Sheft, S. (1995). "Analytic and Synthetic Listening," Current Trends in Acoustics Research, 1, 203-217.

Dye, R. H., Stellmack, M. A., and Grange, A. N., and Yost, W. A. (1996). "The Effect of Distractor Frequency on Judgments of Target Laterality Based on Interaural Delays," Journal of the Acoustical Society of America 99, 1096-1107.

Dye, R. H. (1996). "The Relative Contributions of Targets and Distractors in Judgments of Laterality Based on Interaural Differences of Level," in Binaural and Spatial Hearing in Real and Virtual Environments (eds. R. H. Gilkey and T. R. Anderson), Lawrence Erlbaum, Associates.

Yost, W. A., Dye, R. H., and Sheft, S. (1996). "A Simulated 'Cocktail Party' with Up to Three Sound Sources," Perception and Psychophysics, 1026-1036.

Yost, William A., and Dye, Raymond H. Jr. (1997), Fundamentals of Directional Hearing, Seminars in Hearing: Binaural Processes: Implications for Assessment and Amplification, Thieme Medical Publishers, Inc.

Stellmack, M. A., Dye, R. H. Jr., and Guzman, S. J. (1999). "Observer Weighting of Interaural Delays in Source and Echo Clicks," Journal of the Acoustical Society of America, 105, 377-387.

Lew, G., Sutter, A., Woods, T., and Dye, R. (2000). "Effect of Stimulus Duration on Visual Search Processes," Perception, (under review).

PUBLISHED ABSTRACTS

Haftner, E. R., Aronow, H., Dye, R. H., & Nuetzel, J. M. (1975). "Binaural Intensity JNDs for Transients," J. Acoust. Soc. Am. 58, S55.

Haftner, E. R., Gilkey, R. H., & Dye, R. H. (1976). "Lateralization of Signals Without Onsets," J. Acoust. Soc. Am. 59, S22-23.

Hafter, E. R. & Dye, R. H. (1978). "Lateralization of Clicks Presented at a High Rate," J. Acoust. Soc. Am. 64, S35-36.

Dye, R. H. (1978). "Frequency Discrimination for Tones of Different Levels but Constant E/No," J. Acoust. Soc. Am. 63, S85.

Hafter, E. R., Dye, R. H., & Wenzel, E. M. (1979). "Lateralization of Clicks Presented at a Rapid Rate Based on Interaural Differences of Intensity," J. Acoust. Soc. Am. 65, S121.

Hafter, E. R., Bucher, N. M., & Dye, R. H. (1978). "Prediction of Need and the Allocation of Attention," Bull. Psychon. Soc. 10, 58.

Hafter, E. R., Dye, R. H., Wenzel, E. M., Knecht, K. (1979). "Additivity of the Binaural Cues: Interaural Differences of Time and Interaural Differences of Intensity," Bull. Psychon. Soc. 242.

Dye, R. H. (1980). "The Effect of Intensity upon the Ability of the Binaural Auditory System to Process Information Presented at Rapid Rates," J. Acoust. Soc. Am. 67, S101.

Wenzel, E. M. & Dye, R. H. (1980). "Lateralization of Click Trains Having Opposing Interaural Differences of Time for the Initial and Succeeding Clicks," J. Acoust. Soc. Am. 68, S59.

Yost, W. A. & Dye, R. H. (1981). "Psychophysical Tuning Curves Obtained in Forward, Backward, and Combined Forward- Backward Masking," ARO Paper #85.

Dye, R. H. & Yost, W. A. (1981). "A Comparison of Psychophysical Tuning Curves Obtained in Forward, Backward, and Combined Forward-Backward Masking," J. Acoust. Soc. Am. 70, S87.

Yost, W. A. & Dye, R. H. (1982). "Interaural Intensity Discrimination," J. Acoust. Soc. Am. 71, S46.

Dye, R. H. & Yost, W. A. (1983). "Masking-level Differences for Trains of Clicks," J. Acoust. Soc. Am. 73, S43.

Dye, R. H. (1983). "Detection of Interaural Differences of Intensity in Trains of Filtered Clicks," J. Acoust. Soc. Am. 73, S43.

Yost, W. A. & Dye, R. H. (1984). "Duration and Rise-decay Time in the Masking-level Difference Obtained in Pulsed Masker Conditions," J. Acoust. Soc. Am. 75, S57.

Dye, R. H. & Baumann, J. N. (1984). "The Combination of Interaural Information Across Frequencies: Lateralization on the Basis of Interaural Differences of Time," J. Acoust. Soc. Am. 75, S88.

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Dye, R. H. (1986). "Discrimination of Tonal Complexes on the Basis of Which Component Is Interaurally Delayed," J. Acoust. Soc. Am. 80, S107.

Dye, R. H. and Niemiec, A. J. (1987). "Lateralization on the Basis of Interaural Envelope Delays: The Effect of Additional Frequency Components," J. Acoust. Soc. Am. 82.

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Dye, R. H., Niemiec, A. J., and Stellmack, M. A. (1989). "The Effect of Envelope Power on the Ability to Lateralize Three-tone Complexes on the Basis of Interaural Envelope Delays," J. Acoust. Soc. Am. 85, S83.

Stellmack, M. A., Dye, R. H., and Jakubczak, S. V. (1989). "The Effect of Number of

Components and Component Spacing on the Ability to Detect a Delayed Component Embedded in a Diotic Complex," J. Acoust. Soc. Am. 85, S83.

Fay, R. R., Shofner, W. P., and Dye, R. H. (1989). "Effects of Duration on Intensity Discrimination: Psychophysical Data and Predictions from Single-cell Response," J. Acoust. Soc. Am. 85, S13.

Stellmack, M. A. and Dye, R. H. (1989). "The Effect of Onset Asynchronies between Components on the Ability to Detect a Delayed Component Embedded in a Diotic Complex," J. Acoust. Soc. Am. 86, S11.

Dye, R. H. and Stellmack, M. A. (1990). "Detection of Interaural Differences of Level in Multitone Complexes," J. Acoust. Soc. Am. 88, S97.

Dye, R. H. and Stellmack, M. A. (1992). "A Technique for Assessing Spectrally Analytic and Synthetic Binaural Processing," J. Acoust. Soc. Am. 91, S.

Dye, R. H. "The Relative Contributions of Targets and Distractors in Laterality Judgments," J. Acoust. Soc. Am. 93, 2349.

Yost, W. A., Sheft, S., and Dye, R. (1994). "Divided Auditory Attention with Up to Three Sound Sources: A Cocktail Party," J. Acoust. Soc. Am. 95, 2916.

Grange, A. N. and Dye, R. H. (1994). "Effects of Interaural Configuration of Wideband Forward and Backward Fringes on Detection of an Interaural Phase Shift of a Narrow Portion of Wideband Noise," J. Acoust. Soc. Am. 95, 2916-2917.

Dye, R. H. (1994). "The Relative Contribution of Target IDTs and distractor IDLs in Judgments of Laterality," J. Acoust. Soc. Am. 95, 2895.

Dye, R. H. (1995). "The Segregation of SAM 4-kHz Targets from SAM 2-kHz Distractors on the Basis of Interaural Envelope Delay," J. Acoust. Soc. Am. 97, 3412.

Dye, R. H. (1995). "The Relationship Between Binaural Fusion and Binaural Interference," J. Acoust. Soc. Am. 98, 2906-2907.

Dye, R. H. (1996). "Target Weights for high-frequency SAM Targets and Distractors Lateralized on the Basis of Envelope Delay," J. Acoust. Soc. Am. 99, 2517.

Stellmack, M. A. and Dye, R. H. (1996). "Observer Weighting of Interaural Differences of Time in Different Regions of Intracranial Space," J. Acoust. Soc. Am. 99, 2515.

Chronopoulos, M., Fay, R., Dye, R., Sheft, S., and Shofner, W. (1996). "Perception of Amplitude Fluctuation in the Goldfish," J. Acoust. Soc. Am. 99, 2583-2884.

Dye, R. H., Stellmack, M. A., and Yost, W. A. (1996). "Assessing the Relative Contribution of Frequency Components to Perceived Laterality," Abstracts of the Psychonomic Society (37th Annual Meeting), 25.

Stellmack, M. A., Dye, R. H., Jr., and Guzman, S. J. (1997). "Observer weighting of binaural information in source and echo clicks," J. Acoust. Soc. Am. 101, 3083.

Dye, R. H., Jr. (1999). "The Influence of Later Arriving Sounds on the Ability of Listeners to Judge the Lateral Position of a Source," J. Acoust. Soc. Am. 106, 2237.

Whitmer, W. M. and Dye, R. H., Jr. (1999). "The Effect of Frequency Modulation on the Ability to Judge Dynamic Changes in Interaural Level Differences," J. Acoust. Soc. Am. 106, 2237-2238.

Dye, R. H., Gallegos, J., Brown, C. A., and Stellmack, M. A. (2001). "A Comparison of the Precedence Effect to Backward Interference of Localization for Signals of Unequal Level," J. Acoust. Soc. Am.

Brown, C. A., Sheft, S., Yost, W. A., and Dye, R. H. (2001). "Localization of Noise Bursts

in Echoic Space,” paper presented to ARO.

Whitmer, William M., Yost, William A., & Dye, Raymond H., Jr (2001). “Parameter Considerations for the Presence and Breakdown of the Franssen Effect,” paper presented to ARO.

Whitmer, William M., Yost, William A., Raymond H., Jr. (2002). “Reverberation and the Franssen effect,” J. Acoust. Soc. Am. 111, 2441.

Whitmer, William M., Brown, Christopher A., Dye, Raymond H., Jr. and Jurcin, Noah F. (2002). “Cocktails for Franssen: Asynchronous transient bias and other attentional factors in auditory localization,” J. Acoust. Soc. Am. 113.

GRANTS AND AWARDS

National Science Foundation, BNS-8305683: "The Combination of Binaural Information from Different Bands of Frequency," September 1, 1983-February 28, 1986.

Air Force Office of Scientific Research, (AFOSR84-0332): "Binaural Processing of Complex Stimuli," September 1, 1984- August 31, 1987 (Co-PI with W. A. Yost).

Air Force Office of Scientific Research, "Auditory Processing of Complex Sounds Across Frequency Channels," February 1, 1989-January 31, 1992 (co-PI with Shofner and Yost).

Air Force Office of Scientific Research, F49620-92-J-0489, 1992-1995, \$398,586, Co-PI with (Yost and Sheft)

National Science Foundation, "Undergraduate Laboratory in Experimental Psychology," January 15, 1989-January 14, 1990 (PI).

National Institutes of Health Program Project Grant (NIH1P01NS219170), "Information processing by the auditory system", William Yost, P.I., Sheryl Coombs, Raymond Dye, Dick Fay, and William Shofner, Investigators. 1988 - 1993.

National Institutes of Health Program Project Grant (NIDCD), “Information Processing by the Auditory System,” Investigator, W. Yost, P.I. A five-year Center Grant from National Institutes of Health (1993-1998).

Air Force Office of Scientific Research, “Sound Processing in a Reverberant World,” November 1, 1995-October 31, 1998 (co-PI with Yost and Sheft).