

October 28, 2005

JAMES T. TOWNSEND

VITA

BIOGRAPHICAL DATA

Name: James Tarlton Townsend
Office Address: Department of Psychology
Indiana University
Bloomington, Indiana 47405
(812) 855-9598

ACADEMIC HISTORY

1957-1961 Fresno State College
Fresno, California
A.B. in Psychology
1962-1966 Stanford University
Stanford, California
Ph.D. in Psychology, September 1966
Field: Cognitive/Mathematical Psychology

PROFESSIONAL OFFICES

1. Editor of Journal of Mathematical Psychology, 1985-1990.
2. Member of Executive Board of Society for Mathematical Psychology, 1984-1989, 2001-2006.
3. President; twice, Society for Mathematical Psychology.
4. Associate Editor: Journal of Mathematical Psychology, 1982-1984, 1990-present.
5. Consulting Editor, Psychological Bulletin, 1994-1996.
6. Consulting Editor: Psychonomic Bulletin & Review, 1993-1998.

7. Consulting Editor: Psychological Review, 1998-present.
CURRENT RESEARCH AND TEACHING PROGRAM

Research Interests:

- ✍ Development of general mathematical theory and methodologies for human perception and cognition: 1. Stochastic processes, probability theory, and mathematical statistics. 2. Differential geometry and topology.
- ✍ Cognitive psychology and psychophysics including: 1. Visual pattern perception and signal detection. 2. Face perception. 3. Configurality and gestalt perception vs. separable and independent dimensions and features. 4. Human decision and planning behavior. 5. Short-term memory search.
- ✍ Clinical science: Development and application of mathematical models to clinical research phenomena: 1. Schizophrenia: Dr. Richard J. Neufeld of University of Western Ontario, Psychology and Psychiatry). 2. Autism (in collaboration with Dr. Shannon Johnson and Dr. Julie Stout of IU Bloomington, Psychology). 3. General methodological approaches to clinical science (in collaboration with Dr. Richard McFall and Dr. Rick Viken, IU Bloomington, Psychology; Dr. Richard J. Neufeld of University of Western Ontario, Psychology and Psychiatry).

Student Training:

I. Courses and Seminars

I teach primarily at the graduate level:

- ✍ Mathematical psychology, especially: A. Signal detection theory including the statistical decision as well as the ideal observer accounts. B. Methodologies that identify mechanisms of cognitions and decision making based on response times including parallel vs. serial processing, counting models, diffusion models and probability mixtures, stopping rules, independence vs. dependence, and limited vs. limited vs. super capacity.
- ✍ Dynamic systems theory: A. Linear and nonlinear dynamic systems. B. Stability theory. C. Catastrophe theory. D. Chaos theory. E. Topological dynamics.
- ✍ Foundational measurement: A. Scale types. B. Representation theorems. C. Uniqueness Theorems. D. Conjoint measurement. E. Interfaces with psychometrics, psychophysics, statistics, and mathematical modeling. 4. Seminars on: A. Face and emotional expression perception. B. Configurality vs. non-configurality cognition. C. Advanced dynamics.

II. Graduate Laboratory Research Training and Mentoring

✍ I am the primary advisor for several graduate students in the area of Cognitive Psychology and Cognitive Science and on the faculty committees or serving as co-advisor for several students in Clinical Science. Clinical science graduate students and post-doctoral fellows regularly attend reading groups on quantitative modeling held in my Laboratory of Mathematical Psychology.

RECENT GRANT SUPPORT

National:

National Institutes of Health. **R01MH57717-03**. Title: Perceptual Processes, Evidence and Configurality. Amount of Support: \$968,030.00. Period: 04/01/03 - 03/31/06.

National Institutes of Mental Health. **T32 MH19879-10**. Title: Modeling in Cognition. Amount of Support: \$355,382. Period: 07/01/93 - 06/30/09.

National Institutes of Mental Health. **T32 MH17146-19**. Title: Research Training in Clinical Science. Amount of Support: \$297,305 (annually). Period: 7/01/99 - 6/30/09.

POSTDOCTORAL HONORS

Elected: Fellow of the American Psychological Association, 2004.

Senior Scientist Fellowship: Hanse Institute for Advanced Study for research at Oldenburg Institute for Psychophysical Research; January 2000-January 2001.

Elected: Fellow of the American Psychological Society, 1998

Distinguished Alumnus in Science; School of Natural Sciences, California State University, Fresno, 1995.

Elected: Society for Experimental Psychologists, 1993.

Awarded: James McKeen Cattell Sabbatical Award for 1992-1993.

Awarded: American Council of Learned Societies and DAAD German-American Collaborative Research Award, 1992-1993.

Winner: Society for Computers in Psychology/Erlbaum. Distinguished Presentation Award, San Francisco, 1991.

Appointed: Rudy Professor of Psychology, at Indiana University, 1989.

Recipient: Visiting Professorship Award at Stanford University, Winter and Spring, 1986.

Recipient: Visiting Scholar Award at University of California at Irvine, 1981-1982.

Recipient: Senior Scientist Fellowship at Braunschweig University, West Germany, awarded by Deutsche Forschungsgemeinschaft, 1976-1977.

POSTDOCTORAL HONORS, continued

Recipient: Visiting Associate Professor Award at the Mathematical Psychology Labs, Rockefeller University under General Medical Sciences Grant GM16735, 1972-1973.

Biographical Citations:

American Men and Women in Science
International Scholars Directory
Who's Who in Midwest
Who's Who in Science and Engineering
Who's Who in American Education
Who's Who in the World
Who's Who in Medicine and Health Care
Men of Achievement

EDITOR OF BOOK SERIES:

Scientific Psychology Series: Co-Editor with Stephen Link for Lawrence Erlbaum Associates, Inc.

EDITORIAL CONSULTANT AND REVIEWS

JOURNALS:

Vision Research

Psychological Review

Cognitive Psychology

Psychological Bulletin

Perception & Psychophysics

American Mathematical Society

Journal of Experimental Psychology: Human Learning and Memory

Journal of Experimental Psychology: Human Perception and Performance

Mathematics Reviews

Behavioral and Brain Sciences

RECENT GRANT PANELS

National Science Foundation: Methodology, Measurement and Statistics

GRANT REVIEWING:

National Science Foundation

National Institute of Mental Health

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Member of:

Society for Experimental Psychologists

Psychonomic Society

Society for Mathematical Psychology

Sigma Xi

Mathematical Association of America

Former Member of GUV (Gesellschaft für Unendliche Versuchung)

American Psychological Society

Society for Computers in Psychology

Society for Judgment and Decision Making

PUBLICATIONS

Books:

Authored:

1. Townsend, J. T., & Ashby, F. G. (1983). The Stochastic Modeling of Elementary Psychological Processes. Cambridge: Cambridge University Press.

Edited:

2. Geissler, H. G., Link, S., & Townsend, J. T. (1992). Cognition, Information Processing and Psychophysics: Basic Issues, Hillsdale, NJ: Lawrence Erlbaum Associates.
3. Wenger, M. J., & Townsend, J. T. (2001). Computational, Geometric, and Process Issues in Facial Cognition: Progress and Challenges. Mahwah, NJ: Erlbaum.

Book Chapters and Encyclopedia Entries:

1. Townsend, J. T. (1974). Issues and models concerning the processing of a finite number of inputs. In B. H. Kantowitz (Ed.), Human Information Processing: Tutorials in Performance and Cognition (pp. 133-168). Hillsdale, NJ: Erlbaum Press.
2. Townsend, J. T. (1975). The mind-body equation revisited. In Chung-Ying Cheng (Ed.), Psychological Problems in Philosophy (pp. 200-218). Honolulu: University of Hawaii Press.
3. Townsend, J. T., & Ashby, F. G. (1978). Methods of modeling capacity in simple processing systems. In J. Castellan and F. Restle (Eds.), Cognitive Theory Vol. III (pp. 200-239). Hillsdale, NJ: Erlbaum Associates.
4. Townsend, J. T., & Evans, R. (1983). A systems approach to parallel-serial testability and visual feature processing. In H. G. Geissler (Ed.), Modern Issues in Perception (pp. 166-189). Berlin: VEB Deutscher Verlag der Wissenschaften.
5. Townsend, J. T., & Schweickert, R. (1985). Interactive effects of factors prolonging processes in latent mental networks. In G. d'Ydewalle (Ed.), Cognition, Information Processing, and Motivation, Vol. 3 (pp. 255-276). XXIII International Congress of Psychology. Amsterdam: North Holland.
6. Townsend, J. T., Kadlec, H., & Kantowitz, B. H. (1987). POPEYE: A

production rule-based model of multitask supervisory control (POPCORN). In J. R. Comstock, Jr. (Ed.), Mental State Estimation 1987, proceedings of a workshop sponsored and published by NASA.

Book Chapters and Encyclopedia Entries, continued

7. Townsend, J. T., & Busemeyer, J. R. (1989). Approach-Avoidance: Return to dynamic decision behavior. In Chizuko Izawa (Ed.), Current Issues in Cognitive Processes: The Tulane Flowerree Symposium on Cognition. Hillsdale, NJ: Erlbaum Associates.
8. Townsend, J. T., & VanZandt, T. (1990). New theoretical results on testing self-terminating vs. exhaustive processing. In H. G. Geissler and H. Schroeder (Eds.), Proceedings of the International Fechner Symposium. Amsterdam: North Holland.
9. Townsend, J. T., & Kadlec, H. (1990). Mathematics and psychology. In R. E. Mickens (Ed.), Mathematics and Science. Singapore: World Scientific Publishing Co.
10. Townsend, J. T. (1990). Lefebvre's human reflexion and its scientific acceptance in psychology. In H. Wheeler (Ed.), The Structure of Human Reflexion. American University Studies, Series VIII, Vol. 17, New York: Peter Lang.
11. Townsend, J. T., & Van Zandt, T. (1990). New theoretical results on testing self-terminating vs. exhaustive processing in rapid search experiments. In H.-G. Geissler, M. H. Müller, and W. Prinz (Eds), Psychophysical Explorations of Mental Structures. Toronto, Lewiston, NY, Bern, Göttingen, Stuttgart: Hogrefe & Huber Publishers
12. Kadlec, H., & Townsend, J. T. (1992). Signal detection analysis of multidimensional interactions. In F. G. Ashby (Ed.), Probabilistic Multidimensional Models of Perception and Cognition. Hillsdale, NJ: Lawrence Erlbaum Associates.
13. Townsend, J. T. (1992). On the proper scale for reaction time. In H. Geissler, S. Link, and J. T. Townsend (Eds.), Cognition, Information Processing and Psychophysics: Basic Issues. Hillsdale, NJ: Lawrence Erlbaum Associates.
14. Townsend, J. T. (1992). Chaos theory: A brief tutorial and discussion. In A. F. Healy, S. M. Kosslyn & R. M. Shiffrin (eds.) From Learning Theory to Connectionist Theory: Essays in Honor of W. K. Estes, (Vol. 1). Hillsdale, NJ: Lawrence Erlbaum Associates.

15. Townsend, J. T. & Thomas, R. (1993). On the need for a general quantitative theory of pattern similarity. In S. C. Masin (Ed.), Foundations of Perceptual Theory. Amsterdam: Elsevier Publishers.
16. Townsend, J. T. & Busemeyer, J. (1995). Dynamic representation of decision making. In R. Port and T. Van Gelder (Eds.), Mind in Motion: Dynamics, Behavior and Cognition. MIT Press.

Book Chapters and Encyclopedia Entries, continued

17. Townsend, J. T. & Wenger, M. J. (1996) (Chapter included in proceedings). Patterns and features as manifolds: Faces in identification and categorization. 12th Annual Meeting International Society for Psychophysics, Padua, Italy.
18. Colonius, H. & Townsend, J. T. (1997). Activation-state representation of models for the redundant-signals-effect. In A. A. J. Marley (Ed.), Choice, Decision and Measurement, volume in honor of R. Duncan Luce, Mahwah, NJ: Erlbaum Associates.
19. Townsend, J. T., & Wenger, M. J. (1998). A dynamical systems theory of dimensional interactions and predictions for response times. Proceedings of Fechner Day 98 B International Society for Psychophysics, Quebec City, CA.
20. O'Toole, A. J., Wenger, M. J., & Townsend, J. T. (2001). Quantitative models of perceiving and remembering faces: Precedent and possibilities. Chapter in M. J. Wenger and J. T. Townsend (Eds.), Comutational, Geometric and Process Issues in Facial cognition: Progress and Challenges (pp. 50). Erlbaum Press.
21. Wenger, M. J., & Townsend (2001). Faces as gestalt stimuli: Process characteristics. Chapter in M. J. Wenger and J. T. Townsend (Eds.), Comutational, Geometric and Process Issues in Facial cognition: Progress and Challenges. Erlbaum Press.
22. Townsend, J. T., Solomon, B., Wenger, M. J., & Spencer-Smith, J. B. (2001). The perfect Gestalt: Infinite dimensional Riemannian face spaces and other aspects of face cognition. Chapter in M. J. Wenger and J. T. Townsend (Eds.), Comutational, Geometric and Process Issues in Facial cognition: Progress and Challenges. Erlbaum Press.
23. Busemeyer, J., Townsend, J. T., & Stout, J., (2002). Motivational underpinnings of utility in decision making. In S. Moore & M. Oaksford (Eds.), Emotional Cognition, Philadelphia: PN, John Benjamins

Publishing Co.

24. Townsend, J. T. (2003). Information processing architectures: Fundamental issues. In N. J. Smelzer, P. B. Bates, and A. A. J. Marley (Eds.) International Encyclopedia of the Social & Behavioral Sciences. Amsterdam: Pergamon Press.
25. Townsend, J. T., & Spencer-Smith, J. B. (2004). Two kinds of global perceptual separability and curvature. Chapter in C. Kaernbach, E. Schröger, and H. Müller (Eds.), Psychophysics beyond sensation: Laws and invariants of human cognition. Mahwah, NJ: Erlbaum.
26. Neufeld, R.W.J., Townsend, J. T., & Jetté, J. (in press). Quantitative response time technology for measuring cognitive-processing capacity in clinical studies. In: R.W.J. Neufeld (Ed.), Advances in clinical cognitive science: Formal modeling and assessment of processes and symptoms. Washington, D.C.: American Psychological Association.
27. Townsend, J.T., Fific, M., & Neufeld, R.W.J. (in press). Assessment of mental architecture in clinical/cognitive research. In T.A. Treat, R.R. Bootzin, T.B. Baker (Eds.), Psychological clinical science: Papers in Honor of Richard M. McFall. Mahwah, NJ: Lawrence Erlbaum Associates.
28. Townsend, J. T., Aisbett, J., Assadi, A., & Busemeyer, J. (in press). General recognition theory and methodology for dimensional independence on simple cognitive manifolds. In H. Colonius & E. N. Dzhafarov (Eds.), Measurement and Representation of Sensations: Recent Progress in Psychophysical Theory. Mahwah, NJ: Lawrence Erlbaum Associates.

Refereed Articles:

1. Bliss, J. C., Crane, H. D., Link, S. W., & Townsend, J. T. (1966). Tactile perception of sequentially presented spatial patterns. Perception & Psychophysics, 1, 125-130.
2. Bliss, J. C., Crane, H. D., Mansfield, P. K., & Townsend, J. T. (1966). Information available in brief tactile presentations. Perception & Psychophysics, 1, 273-283.
3. Kinchla, R. A., Townsend, J. T., Yellott, J. I., Jr., & Atkinson, R. C. (1966). Influence of correlated visual cues on auditory signal detection. Perception & Psychophysics, 1, 67-73.
4. Townsend, J. T. (1968). Binocular information summation and the serial processing model. Perception & Psychophysics, 4, 125-128.

5. Townsend, J. T. (1971a). Theoretical analysis of an alphabetic confusion matrix. Perception & Psychophysics, 9, 40-50.
6. Townsend, J. T. (1971b). A note on the identifiability of parallel and serial processes. Perception & Psychophysics, 10, 161-163.
7. Townsend, J. T. (1971c). Alphabetic confusion: A test of models for individuals. Perception & Psychophysics, 10, 449-454.
8. Townsend, J. T., Taylor, S. G., & Brown, D. R. (1971d). Lateral masking for letters with unlimited viewing time. Perception & Psychophysics, 10, 375-378.
9. Townsend, J. T. (1972). Some results concerning the identifiability of parallel and serial processes. British Journal of Mathematical and Statistical Psychology, 25, 168-199.
10. Townsend, J. T., & Roos, R. N. (1973). Search reaction time for single targets in multiletter stimuli with brief visual displays. Memory & Cognition, 1, 319-332.
11. Townsend, J. T. (1976a). A stochastic theory of matching processes. Journal of Mathematical Psychology, 14, 1-52.
12. Townsend, J. T. (1976b). Serial and within-stage independent parallel model equivalence on the minimum completion time. Journal of Mathematical Psychology, 14, 219-238.
13. Townsend, J. T., & Snodgrass, J. G. (1977). Masking effects of similar and dissimilar letters: A test of the interactive channels model. Perceptual and Motor Skills, 44, 1212-1228.
14. Townsend, J. T. (1978). A clarification of some current multiplicative confusion models. Journal of Mathematical Psychology, 18, 25-38.

Refereed Articles Continued:

15. Ashby, F. G., & Townsend, J. T. (1980). Decomposing the reaction time distribution: Pure insertion and selective influence revisited. Journal of Mathematical Psychology, 21, 93-123.
16. Snodgrass, J. G., & Townsend, J. T. (1980). Comparing parallel and serial models: Theory and implementation. Journal of Experimental Psychology: Human Perception and Performance, 6, 330-354.

17. Townsend, J. T., Hu, G. G., & Ashby, F. G. (1980). A test of visual feature sampling independence with orthogonal straight lines. Bulletin of Psychonomic Society, 15, 163-166.
18. Townsend, J. T. (1981). Some characteristics of visual whole report behavior. Acta Psychologica, 47, 149-173.
19. Townsend, J. T., Hu, G. G., & Ashby, F. G. (1981). Perceptual sampling of orthogonal straight line features. Psychological Research, 43, 259-275.
20. Townsend, J. T., & Ashby, F. G. (1982). An experimental test of contemporary mathematical models of visual letter recognition. Journal of Experimental Psychology: Human Perception and Performance, 8, 834-864.
21. Townsend, J. T., & Landon, D. E. (1982). An experimental and theoretical investigation of the constant ratio rule and other models of visual letter recognition. Journal of Mathematical Psychology, 25, 119-163.
22. Townsend, J. T., & Landon, D. E. (1983). Mathematical models of recognition and confusion in psychology. International Journal of Mathematical Social Sciences, 4, 25-71.
23. Townsend, J. T., Hu, G. G., & Evans, R. (1984). Modeling feature perception in brief displays with evidence for positive interdependencies. Perception & Psychophysics, 36, 35-49.
24. Townsend, J. T., & Ashby, F. G. (1984). Measurement scales and statistics: The misconception misconceived. Psychological Bulletin, 96, 394-401.
25. Townsend, J. T. (1984). Uncovering mental processes with factorial experiments. Journal of Mathematical Psychology, 28, 363-400.
26. Ashby, F. G., & Townsend, J. T. (1986). Varieties of perceptual independence. Psychological Review, 93, 154-179.
27. Townsend, J. T., Hu, G. G., & Kadlec, H. (1988). Feature sensitivity, bias and interdependencies as a function of intensity and payoffs. Perception & Psychophysics, 43, 575-591.

Refereed Articles Continued:

28. Townsend, J. T., & Schweickert, R. (1989). Toward the trichotomy method: Laying the foundation of stochastic mental networks. Journal of

Mathematical Psychology, 33, 309-327.

29. Schweickert, R., & Townsend, J. T. (1989). A trichotomy method: Interactions of factors prolonging sequential and concurrent mental processes in stochastic PERT networks. Journal of Mathematical Psychology, 33, 328-347.
30. Townsend, J. T. (1990). Serial vs. parallel processing: Sometimes they look like tweedledum and tweedledee but they can (and should) be distinguished. Psychological Science, 1, 46-54.
31. Townsend, J. T. (1990). The truth and consequences of ordinal differences in statistical distributions: Toward a theory of hierarchical inference. Psychological Bulletin, 108, 551-567.
32. Townsend, J. T. (1992). Don't be fazed by PHASER: Beginning exploration of a cyclical motivational system. Behavior Research Methods, Instruments and Computers, 24 219-227.
33. Busemeyer, J. R. & Townsend, J. T. (1992). Fundamental derivations from decision field theory. Mathematical Social Sciences, 23, No. 3.
34. Kadlec, H., & Townsend, J. T. (1992). Implications of marginal and conditional detection parameters for the separabilities and independence of perceptual dimensions. Journal of Mathematical Psychology, 36, 325-374.
35. Van Zandt, T., & Townsend, J. T. (1993). Self-terminating vs exhaustive processes in rapid visual, and memory search: An evaluative review. Perception & Psychophysics, 53(5), 563-580.
36. Busemeyer, J., & Townsend, J. T. (1993). Decision field theory: A dynamic-cognitive approach to decision making. Psychological Review, 100(3), 432-459.
37. Townsend, J. T., & Thomas, R. (1994). Stochastic dependencies in parallel and serial models: Effects on systems factorial interactions. Journal of Mathematical Psychology, 38, 1-34.
38. Townsend, J. T. & Nozawa, G. (1995). On the spatio-temporal properties of elementary perception: An investigation of parallel, serial and coactive theories. Journal of Mathematical Psychology, 39, 321-360.
39. Fikes, T. G. & Townsend (1995). Moving models of motion forward: Explication and a new concept. Behavioral and Brain Sciences, 18, 751-753.

Refereed Articles Continued:

40. Townsend, J. T. & Diederich, A. (1996). The relationship of variance to interaction contrast in parallel systems. British Journal of Mathematical and Statistical Psychology, 49, 211-223.
41. Townsend, J. T. & Nozawa, G. (1997). Serial exhaustive models can violate the race inequality: Implications for architecture and capacity. Psychological Review, 104, 595-602.
42. Townsend, J. T. & Colonius, H. (1997). Parallel processing response times and experimental determination of the stopping rule. Journal of Mathematical Psychology, 41, 392-397.
43. Hughes, H. C., & Townsend, J. T. (1998). Evidence for independent ON and OFF channels in human vision. Psychological Science, 9, 53-60.
44. McFall, R., & Townsend, J. T. (1998). Foundations of psychological assessment: Implications for cognitive assessment in clinical science. Psychological Assessment, 10, 316-330.
45. Wenger, M., & Townsend, J. T. (2000). Spatial frequencies in short-term memory for faces: A test of three frequency-dependent hypotheses. Memory & Cognition, 28, 125-142.
46. Townsend, J. T., Silva, K. M., Spencer-Smith, J., & Wenger, M. J. (2000). Exploring the relations among categorization and decisions with regard to realistic face stimuli. Invited article in special issue of Pragmatics & Cognition: Facial Information Processing: A Multidisciplinary Perspective, 8, 83-105.
47. Wenger, M. J., & Townsend, J. T. (2000). H(t) and C(t): Basic tools for attention and general processing capacity in perception and cognition. Invited article in special issue of Journal of General Psychology: Visual Attention, 127, 67-99.
48. Busey, T. A. & Townsend, J. T. (2001). Independent sampling vs. inter-item dependencies in whole report processing: Contributions of processing architecture and variable attention. Journal of Mathematical Psychology, 45, 283-323.
49. Nozawa, G., Hughes, H. C., & Townsend, J. T. (Under revision). Complementary relationships between response times, response

accuracy, and task requirements in a parallel processing system. Psychological Bulletin & Review.

50. Roe, R. M., Busemeyer, J., & Townsend, J. T. (2001). Multi-alternative decision field theory: A dynamic artificial neural network model of decision making. Psychological Review, 108, 370-392.
51. Townsend, J. T. (2001). A clarification of self-terminating vs. exhaustive variances in serial and parallel processing. Perception & Psychophysics, 63, 1101-1106.

Refereed Articles Continued:

52. Spencer-Smith, J., Wild, H., Innes-Ker, A., Townsend, J. T., Duffy, C., Edwards, C., Ervin, K., Merritt, N., Won Paik, J. (2001). Making faces: Creating three-dimensional parameterized models of facial expression. Behavior Research Methods, Instruments & Computers, 33, 115-123.
53. Townsend, J. T., & Fific, M (2004). Parallel & serial processing and individual differences in high-speed search in human memory. Perception & Psychophysics, 66, 953-962.
54. Townsend, J. T., & Wenger, M. J. (2004). The serial parallel dilemma: A case study in a linkage of theory and method. Psychological Bulletin & Review 11, 391-418.
55. Townsend, J. T., & Wenger, M. J. (2004). A theory of interactive parallel processing: new capacity measures and predictions for a response time inequality series. Psychological Review 111, 1003-1035.
56. Townsend, J. T., & Colonius, H. (in press; due Jan.2006). Variability of the MAX and MIN statistic: A theory of the quantile spread as a function of sample size. Psychometrika.

Book Reviews and Commentaries:

1. Townsend, J. T. (1983). Review of Algebra of Conscience by Vladimir A.

Lefebvre. Boston: Reidel; in Journal of Mathematical Psychology, 27, No. 4, December 1983.

2. Townsend, J. T. (1984). Psychology: Toward the mathematical inner man. Commentary on Target article by B. F. Skinner: Methods and theories in the experimental analysis of behavior. Behavioral and Brain Sciences, 7, 539-540.
3. Townsend, J. T. (1987). Learning is critical, not implementation vs algorithm. Commentary on Target article by J. R. Anderson: Methodologies for studying human knowledge. Behavioral and Brain Sciences, 10, 497.
4. Townsend, J. T. (1989). Winning A20 Questions@ with mathematical models. Multiple book reviews on ASpeech Perception by Ear and Eye: A Paradigm for Psychological Inquiry@ by D. W. Massaro. Behavioral and Brain Sciences, 12, 775-776.
5. Townsend, J. T. (1991). Phasing into PHASER. Behavior Research Methods, Instruments and Computers, 23, 77-78.
6. Townsend, J. T. (1991). Modeling change in biology and psychology. Commentary on Target Article by C. W. Clark: Modeling behavioral adaptation. Behavioral and Brain Sciences, 14, 108.

Book Reviews and Commentaries, continued

7. Modeling change in biology and psychology. Behavioral & Brain Science, 14:1.
8. Townsend, J.T. (1992). Work on Unified Theory? Yes! Work on Metatheory of Model Identification? Yes, again! A Multiple book reviews of Unified Theories of Cognition@ by Allen Newell, Behavioral and Brain Sciences, 15, 458-459.
9. Townsend, J. T. (1994). A visual approach to nonlinear dynamics: Just cartoons or a serious-pedagogical device? Review of AA visual introduction to dynamical systems theory for psychology@ by F. D. Abraham with R. H. Abraham & C. D. Shaw. Science Frontier Series. Santa Cruz, CA: Aerial Press, 1991.
10. Fikes, T. G. & Townsend, J. T. (1995). Moving models of motion forward: Explication and a new concept. Behavioral and Brain Sciences, 18, 751-753.
11. McFall, R., Townsend, J. T., & Viken, R. (1995). Diathesis-stress model or Ajust-so@ story. Commentary on Mealey=s AThe sociobiology of

sociopathy: @ Behavioral and Brain Sciences, 18(3), 565-566.

12. Townsend, J. T. (1995). Methodology and statistics in the behavioral sciences: The old and the new. Feature review in Psychological Science, 5, 321-325.
13. Townsend, J. T. & Spencer-Smith, J. (1999). A tome on tests and extensions of FLMP. A review of APerceiving talking faces: From speech perception to a behavioral principle. @ By D. W. Massaro. Cambridge, MA: MIT Press. Journal of Psychology, 112, 449-465.

Papers, Invited Addresses, and Symposia:

1. Townsend, J. T. (1968, March). Recognition models and metric assumptions in the identification of uppercase English letters. Paper presented at Western Psychological Association, San Diego, CA.
2. Townsend, J. T. (1968, March). The mind-body equation revisited. paper presented at International Conference on Psychological Problems in Philosophy, Honolulu, HI.
3. Townsend, J. T., & Fial, R. (1968, August). Spatio-temporal characteristics of multisymbol perception. Paper presented at Mathematical Psychology Meetings, Stanford University.
4. Townsend, J. T. (1969, April). Stochastic representations of serial and parallel processes. Paper presented at Midwest Mathematical Psychology Meetings, Indiana University.
5. Townsend, J. T., Richards, M., & Johnson, D. (1969, August). Receiver operating characteristics of single visual elements. Paper presented at National Mathematical Psychology Meetings, University of Michigan.

Papers, Invited Addresses, and Symposia Continued:

6. Townsend, J. T. (1970, February). Research in human character recognition and visual span of apprehension. Invited presentation of Mathematical Psychology Laboratory, Rockefeller University.
7. Townsend, J. T. (1970, April). A result concerning the testability of parallel and serial models. Paper presented at Mathematical Psychologists' Conference, Indiana University.
8. Townsend, J. T. (1970, August). Spatio-temporal decision processes. Invited presentation at Workshops on Processing Models in Perception and Psychophysics, Miami Beach, FL.

9. Townsend, J. T., Roos, R., & Richards, M. (1970, September). Multiletter display and multiletter memory processing times as functions of the number of letters. Paper presented at national Mathematical Psychology Meetings, Miami Beach, FL.
10. Townsend, J. T. (1970, November). Structure issues in pattern recognition and their relation to template matching and feature testing models. Paper presented at Psychonomic Society Meetings, San Antonio, TX.
11. Townsend, J. T. (1972, April). A stochastic differential equation for testing parallel-serial identifiability and a case of hybrid mimicking. Mathematical and Theoretical Psychology Conference, Indiana University.
12. Townsend, J. T. (1972, June). Serial and parallel models. Invited talk at Universität Bochum, West Germany.
13. Townsend, J. T. (1972, August). Identifiable parallel and serial models for same-different experiments and a paradigm for testability at the level of mean processing times. Fifth Annual Mathematical Psychology Meeting, San Diego, CA.
14. Townsend, J. T. (1973, February). Mathematical aspects of finite processing systems. Talk given at Mathematical Psychology Seminar, New York University.
15. Townsend, J. T. (1973, April). Mathematical model for visual information processing. Talk given at Visual Perception Seminar, Princeton University.
16. Townsend, J. T. (1973, May). Testing serial vs. parallel RT models. Invited presentations at Universität Marburg, West Germany.
17. Townsend, J. T. (1973, August). (Chairman and Contributor), Symposium on Models of Search in Short-term Memory. Sixth Annual Mathematical Psychology Meetings, with W. K. Estes and George Sperling (Discussants), R. A. Kinchla, J. Anderson, P. Cavanaugh (Contributors), Montreal, CANADA.

Papers, Invited Addresses, and Symposia Continued:

18. Townsend, J. T. (1973). (Chairman and Discussant), Symposium on Structure and Function in Models for Short- and Long-term Memory Search. American Psychological Association, with J. G. Snodgrass, M. Razel, C. Razel, and D. Vorberg (Contributors), Montreal, CANADA.

19. Townsend, J. T. (1974, May). Model structure in display and memory search. Invited talk at McMaster University, Hamilton, Ontario, CANADA.
20. Townsend, J. T. (1974, June). Characteristics of reaction time distributions. Invited presentation at the Formal Theories of Information Processing Conference, Stanford University.
21. Townsend, J. T. (1974, August). Independent parallel models and analyses of reaction time distributions. Paper presented at Seventh Annual Mathematical Psychology Meetings, Ann Arbor, MI.
22. Townsend, J. T., & Snodgrass, J. G. (1974, November). A serial vs. parallel testing paradigm when Asame@ and Adifferent@ comparison rates differ. Paper presented to Psychonomic Society, Boston, MA.
23. Townsend, J. T. (1975, August). A clarification of some current multiplicative confusion models. Paper presented at the Eighth Annual Mathematical Psychology Meetings, Purdue University.
24. Townsend, J. T., & Ashby, F. G. (1976, April). Pattern matching and methods of modeling capacity in simple processing systems. Invited presentation at the Ninth Annual Conference on Mathematical and Cognitive Psychology, Bloomington, IN.
25. Townsend, J. T., & Ashby, F. G. (1976, May). Toward a theory of letter recognition: Testing contemporary mathematical models. Midwestern Psychological Association, Chicago, IL.
26. Townsend, J. T. (1976). A generalization of PST (Parallel-Serial Testing Paradigm). Paper presented at Ninth Annual Mathematical Psychology Meeting, New York, NY.
27. Townsend, J. T. (1976, October). A study on whole report memory. Paper presented at Annual Meeting of German Society of Researchers in Memory and Cognition, Rauschholzhausen, West Germany.
28. Townsend, J. T. (1976, November). A stochastic theory of matching processes. Invited talks at Universitat Regensburg, West Germany.
29. Townsend, J. T. (1977, March). A stochastic theory of matching processes. Invited talks at Universitat Konstanz, West Germany.

Papers, Invited Addresses, and Symposia Continued:

30. Townsend, J. T. (1977, March). Toward a theory of letter recognition. Invited Address as Annual Conference of German Mathematical Psychology Society, Konstanz, West Germany.
31. Townsend, J. T. (1977, August). A stochastic power model of capacity for elementary reaction tasks. Paper presented at Tenth Annual Meeting of Mathematical Psychology Society, UCLA.
32. Townsend, J. T. (1978). (Organizer and Discussant), on Mathematical Models of Visual Character Recognition. Eleventh Annual Mathematical Psychology Meeting, McMaster University, Hamilton, Ontario, CANADA.
33. Townsend, J. T., Hu, G. G., & Ashby, F. G. (1978, November). A test of visual feature sampling independence with orthogonal straight lines. Paper presented at Psychonomic Society Meetings, San Antonio, TX.
34. Townsend, J. T., & Evans, R. (1979, May). Testing three models of confusion with simple line segments. Paper presented at Midwestern Psychological Association, Chicago, IL.
35. Townsend, J. T., & Hu, G. G. (1980, August). Testing the independence of visual feature perception. paper presented at Thirteenth Annual Mathematical Psychology Meetings, University of Wisconsin, Madison.
36. Landon, D. E., & Townsend, J. T. (1980, August). A direct test of the constant ratio rule in alphabetic confusion. Paper presented at Thirteenth Annual Mathematical Psychology Meetings, University of Wisconsin, Madison.
37. Townsend, J. T. (1981). Toward a psychological system theory. Invited presentation at Ohio State University.
38. Townsend, J. T. (1981). Models and experimentation in span of apprehension. Invited presentation at the University of Wisconsin.
39. Townsend, J. T. (1981). Feature theories of letter recognition. Invited presentation at Indiana University.
40. Townsend, J. T., & Piotrowski, S. M. (1981, November). Parallel systems and factorial additivity of mean reaction time. Paper presented at Psychonomic Society Meeting, Philadelphia, PA.
41. Townsend, J. T. (1982). Systems theory and psychology. Invited presentation at University of California, Irvine.

42. Townsend, J. T. (1982). Mathematical models of memory search. Invited presentation at University of North Carolina.

Papers, Invited Addresses, and Symposia Continued:

43. Townsend, J. T., & Evans, R. (1982). A sieve method for testing parallel vs. serial processing in identification-accuracy experiments. paper presented at Psychonomic Society Meeting, Minneapolis, MN.
44. Townsend, J. T. (1983). Perceptual dimensions and reaction time. interdisciplinary Conference, Steamboat Springs.
45. Evans, R., Townsend, J. T., & Hu, G. (1983). A study of feature dependencies in visual confusion. Presentation at Sixteenth Annual Meeting of Society for Mathematical Psychology, Boulder, CO.
46. Townsend, J. T., & Schweickert, R. (1984, August). Additive effects of factors selectively influencing partially ordered mental processes. Paper presented at Symposium on Mathematical Models of Reaction Time, Seventeenth Annual Mathematical Psychology Meeting, Chicago, IL.
47. Townsend, J. T. (1984, August). (Chair), Session on Information Processing and Performance. Paper presented at Seventeenth Annual Mathematical Psychology Meeting, Chicago, IL.
48. Townsend, J. T. (1984, September). (Chair and Organizer), Symposium on Dynamic Mathematical Models of Human Information Processing, 23rd International Congress of Psychology, Acapulco, MX.
49. Townsend, J. T., & Schweickert, R. (1984, September). Interactive effects of factors prolonging processes in latent mental networks. Paper presented at 23rd International Congress of Psychology, Acapulco, MX.
50. Ashby, F. G., & Townsend, J. T. (1984, November). Varieties of perceptual independence. Paper presented at Psychonomic Society Meeting, San Antonio, TX.
51. Townsend, J. T., & Schweickert, R. (1984, November). Cognitive process interactions in complex networks. Paper presented at Psychonomic Society Meeting, San Antonio, TX.
52. Townsend, J. T. (1985, May). Invited address at Annual Midwestern Psychological Association Meeting. On the Architecture of Mental Processes: The Continuing Evolution of Reaction Time Methodology.

53. Busemeyer, J., & Townsend, J. T. (1985, August). Toward an adaptive theory of decision making. Paper presented at 18th Annual Mathematical Psychology Meetings, La Jolla, CA.
54. Invited talks while on leave at Stanford University (1986, Spring). Topic: Using reaction time to assess mental architecture.

55. University of California, Santa Barbara, CA.

Papers, Invited Addresses, and Symposia Continued:

56. University of California, Berkeley, CA.
57. University of California, Santa-Cruz, CA.
58. NASA-Ames Research Center, Sunnyvale, CA.
59. Townsend, J. T. (1986, August). Relationships of nonparametric aspects of probability distributions. 19th Annual Mathematical Psychology Meetings, Boston, MA.
60. Townsend, J. T., & Wooten, T. (1986, November). Deja vu: The recurring spectre of parallel-serial mimicry. Paper presented at Psychonomic Society Meetings, New Orleans, LA.
61. Townsend, J. T. (1987, April). A Dynamic Mathematical Theory of Approach-Avoidance Decision Making. Invited presentation to Department of Psychology, University of Illinois.
62. Townsend, J. T., Kadlec, H., & Kantowitz, B. H. (1987, June). Invited Presentation. POPEYE: A production rule-based model of multitask supervisory control (POPCORN). Paper presented at the Mental State Estimation Workshop, Williamsburg, VA.
63. Townsend, J. T., & Busemeyer, J. R. (1987, August). Risk Behavior: Initial Inferences from a Dynamic Theory of Decision Making. Paper presented at 20th Annual Mathematical Psychology Meetings, Berkeley, CA.
64. Schweickert, R., Townsend, J. T., & Fisher, D. (1987, November). Initial Applications of the Trichotomy Method of Latent Mental Network Theory to Experimental Findings. Paper presented at Annual Psychonomics Society Meeting, Seattle, WA.
65. Busemeyer, J. R., You, G. M., & Townsend, J. T. (1988, July). A stochastic version of the approach-avoidance model. Paper presented at Twenty-

First Annual Mathematical Psychology Meeting, Evanston, IL.

66. Kadlec, H., & Townsend, J. T. (1988, July). New theoretical results for perceptual dependence from signal detection. Paper presented at Twenty-First Annual Psychology Meeting, Evanston, IL.
67. Wooten, T., & Townsend, J. T. (1988, July). New theoretical results on testing self-terminating vs. exhaustive processing in rapid search experiments. Paper presented at Twenty-First Annual Meeting of Society for Mathematical Psychology, Evanston, IL.

Papers, Invited Addresses, and Symposia Continued:

68. Townsend, J. T. (1988, August). Invited Presentation. A neuroconnectionistic formulation of dynamic decision field theory. In a Symposium on Decision and Control Mechanisms in Perception and Memory, Douglas Vickers presiding. XXIC International Congress of Psychology, Sydney, AUSTRALIA.
69. Townsend, J. T., & Nozawa, G. (1988, November). Strong evidence for parallel processing with simple dot stimuli. Paper presented at Twenty-Ninth Annual Meeting of Psychonomic Society, Chicago, IL.
70. Busemeyer, J. & Townsend, J. T. (1989, November). Applications of decision field theory to decision making under risk and uncertainty. Paper presented at 30th Annual Meeting of the Psychonomic Society, Chicago, IL.
71. Townsend, J. T. (1990). A potpourri of ingredients for Horse (Race) Soup. Technical Report #32. Cognitive Science Program, Indiana University, Bloomington, IN.
72. Kadlec, H., & Townsend, J. T. (1990, August). Testing separabilities and independence with signal detection analyses. Paper presented at Twenty-third Annual Meeting of Society for Mathematical Psychology, Toronto, Montreal.
73. Thomas, R., & Townsend, J. T. (1990, August). Stochastic dependencies in parallel and serial models: Effects on systems factorial interactions. Paper presented at Twenty-Third Annual Meeting of Society for Mathematical Psychology, Toronto, Montreal.
74. Townsend, J. T. (1991). Chair, Invited Address by Jerome R. Busemeyer of

Purdue University: A decision Field Theory Account of Some
AParadoxical@ Findings from Decision Research.

75. Nozawa & Townsend, J. T. (August, 1991). Analyses of reaction times obtained in the redundant target paradigm: Evidence for parallel processing. Twenty-fourth Annual Meeting of Society for Mathematical Psychology, Bloomington, IN.
76. Townsend, J. T., Invited Presentation at IU Institute for the Study of Human Capabilities, Conference on Human Error: A New Theory of Ordinal Decision Making in Statistical Inference. March 22, 1991; Bloomington, IN.
77. Townsend, J. T. & Nozawa, G., Distributional tests of serial, parallel, and coactivation models using the double factorial paradigm. Paper presented at the Thirty-third Annual Meeting of the Psychonomic Society. November, 1992; St. Louis, MO.
78. Townsend, J. T. Evidence that binocular detection is a parallel coactive system. Paper presented at the Twenty-fifth International Congress of Psychology. 1992; Brussels, Belgium.

Papers, Invited Addresses, and Symposia Continued:

79. Townsend, J. T. Invited Address by F. G. Ashby of University of California - Santa Barbara: Decision bounds and identification and categorization. Twenty-sixth Annual Mathematical Psychology Meeting. August, 1993; Norman, OK.
80. Townsend, J. T. Chair. Categorization I. Thirty-fourth Annual Meeting of the Psychonomic Society. August, 1993; Washington, D.C.
81. Thomas, R. D., & Townsend, J. T. Learning distributional information in a categorization task. Thirty-fourth Annual Meeting of the Psychonomic Society. August, 1993; Washington, D.C.
82. (1993). Presentations Concerning Townsend Laboratory Research at Sterling University, Scotland and Comportaminento U.N.E.D Ciudad Universitaria, Madrid.
83. (1993). Presentations Concerning Townsend Laboratory Research at University of California San Diego.
84. (1993). Presentations Concerning Townsend Laboratory Research at University of California Santa Barbara.

85. Fikes, T. G., & Townsend, J. T. A model taxonomy with application to perception-action systems. Paper presented at the Twenty-seventh Annual Mathematical Psychology Meeting. August, 1994, Seattle.
86. Townsend, J. T., & Fikes, T. G. Multiple-process models for perception-action systems. Paper presented at the Thirty-fifth Annual Meeting of the Psychonomic Society. November, 1994, St. Louis.
87. Two invited addresses at California State University at Fresno:
Identification of Mental architecture using behavioral data. June, 1995, Fresno, CA.
88. Townsend, J. T. Mental capacity, Gestalt perception and response times. Invited address at a Special symposium Honoring R. Duncan Luce; August 3, 1995, Irvine, CA.
89. Townsend J. T. American Psychological Association Invited Address: On the assessment of psychological dimensional and classical interaction. 1995, APA Convention, New York, NY.
90. Townsend, J. T. Implications of dynamic decision field theory for perception and intention. Invited address at a symposium on perceptual and intentional dynamics, University of Amsterdam, October 1995.
91. Hughes, H. C., & Townsend, J. T. Binocular summation of luminance increments and decrements: Evidence for AOn@ and AOff@ channels. Paper presented at 36th Annual Meeting of Psychonomic society, Los Angeles, November 1995.

Papers, Invited Addresses, and Symposia Continued:

92. Townsend, J. T. & Wenger, M. J. Searching for faces and words: General cognitive stochastic processing issues. 37th Annual Meeting of the Psychonomic Society, Chicago, November 1996.
93. Townsend, J. T. & Wenger, M. J. Infinite dimensional general recognition theory (IDGRT) and its implications for object perception and memory. 4th annual workshop on Object Perception and memory, Chicago, November, 1996.
94. Wenger, M. T. & Townsend, J. T. Facial gestalts and configularity as aspects of form and capacity. 29th Annual Meeting of Society for Mathematical Psychology, Chapel Hill, 1996.
95. Townsend, J. T. & Wenger, M. J. Evidence Monitoring Theory: A dynamic

extension of general recognition theory and cognitive processing theory. 29th Annual Meeting of Society for Mathematical Psychology, Chapel Hill, 1996.

96. Townsend, J. T. Continuous flows theories of human information processing. Paper presented at joint IU-Purdue Symposium on Response Times.
97. Townsend, J. T. & Wenger, M. J. The relation of response times to multidimensional scaling from a dynamic systems theory viewpoint. Symposium on multidimensional scaling in reaction time research. 1996 International Congress of Psychology, Montreal, Canada.
98. Invited but unable to attend: Townsend, J. T. & Wenger, M. J. Patterns and features as manifolds: Faces in identification and categorization. 12th Annual Meeting International Society for Psychophysics, Padua, Italy, 1996.
- 99-101. Invited presentations of my research at University of California, Berkeley; University of California, Riverside; University of Washington, Seattle, 1996.
102. Wenger, M. J., & Townsend, J. T. (1997). Dynamic relations for response latency and probability: Outline and initial tests. Psychonomics society, Philadelphia, 1997.
103. Townsend, J. T., & Wenger, M. J. Stochastically dependent parallel systems and implications for perceptual and cognitive configurality. Society for Mathematical Psychology, Bloomington, IN, 1997.
104. Townsend, J. T. & Wenger, M. J. (1997). On the costs and benefits of faces and words. Society for Mathematical Psychology, Indiana University, Bloomington, IN.
105. Townsend, J. T. & Wenger, M. J. (1997). The double-factorial paradigm applied to facial features. Society for Experimental Psychologists, Indiana University, Bloomington, IN.

Papers, Invited Addresses, and Symposia Continued:

106. Townsend, J. T. & Wenger, M. J. (1997). Spatial frequencies and short-term memory for faces. Society for Experimental Psychologists, Brown University, Providence, RI.
107. Townsend, J. T. (1997). From basics to contemporary paradigms: CHAOS,

Society for Quantitative Analysis of Behavior, Chicago, IL.

108. Townsend, J. T., & Wenger, M. J. (1998). When channels interact: correlated linear systems and target redundancy. 31st Annual Meeting of the Society for Mathematical Psychology, Vanderbilt University, Nashville, TN.
109. Townsend, J. T., Solomon, B., & Wenger, M. J. (1998). Geodesics in infinite dimensional spaces. 31st Annual Meeting of the Society for Mathematical Psychology, Vanderbilt University, Nashville, TN.
110. Roe, R. M., Busemeyer, J. R., & Townsend, J. T. (1998). Extension of decision field theory to multiple choice tasks. 31st Annual Meeting of the Society for Mathematical Psychology, Vanderbilt University, Nashville, TN.
111. Wenger, M. J., & Townsend, J. T. (1998). Organizer of Symposium on Facial Perception and Memory. AIC, Jackson Hole, WY.
112. Townsend, J. T., & Wenger, M. J. (1998). Correlated dynamic linear accumulations with gaussian noise: Initial predictions for target redundancy. Proceedings of the 14th Annual Meeting of the International Society for Psychophysics (Fechner Day >98). Université Laval, Québec, Canada.
113. Wenger, M. J., & Townsend, J. T. (1998). Information processing and facial processing. AIC, Jackson Hole, WY.
114. Townsend, J. T., & Wenger, M. J. (1999). Visual search in organized vs. scrambled facial features and letters. AIC, Jackson Hole, WY.
115. Townsend, J. T., & Wenger, M. J. (1999). Hazard functions for cumulative distribution functions: Definition, properties, and a capacity function for exhaustive (AND) RT experiments. Society for Mathematical Psychology, Santa Cruz, CA..
116. Townsend, J. T., & Spencer-Smith, J. B. (1999). Two kinds of global perceptual separability and curvature. 15th annual meeting of the International Society for Psychophysics. Fechner Day >99. Tempe, AZ.
117. University of Tel Aviv: Two presentations on History and applications of General Recognition Theory; March, 2000.
118. University of Bielefeld: On the Relationship of Decision Making to Categorization; April, 2000.

Papers, Invited Addresses, and Symposia Continued:

119. University of Muenster: Parallel vs. Serial Processing of Facial Features; June, 2000.
120. European Mathematical Psychology Meetings in Graz, Austria: Infinite Dimensional Riemannian Spaces for Face Perception; July, 2000.
121. University of Leipzig: Perceptual Separability on Riemannian Manifolds; August, 2000.
122. Technical University of Braunschweig: Capacity and Architecture in the Perception of Facial Information; September, 2000.
123. University of Paris: Using General Recognition Theory to Study the Dependence of Facial Features; October, 2000.
124. University of Bremen: Why Mathematical Modeling is Necessary for Programs in Cognitive Science; November, 2000.
125. University of Padua: Architecture and Capacity of Facial Information Processing; December, 2000.
126. (Teaching) Fellow taught an informal ongoing seminar for graduate students and faculty on Afoundational aspects of geometry and applications to cognitive science@ at University of Oldenburg, January 2000 - November 2000.
127. University of California, Irvine, May 10, 2001, Infinite dimensional spaces for face perception.
128. University of California, San Diego, May 11, 2001, Synthesizing geometry and process models in face perception.
129. University of Victoria, May 16, 2001, The double factorial paradigm applied to facial feature processing.
130. European Mathematical Psychology Meetings in Lisbon, September 26-29, 2001, Faces vs. features: Process and representation.
131. International Society for Psychophysics in Leipzig, October, 19-23, Toward a global theory of face perception: Synthesis of psychological representation and process.
132. University of Western Ontario, December 7, 2001, Evidence for parallel

processing of facial features.

133. Townsend, J. T. (November, 2002). Invited Address: Is perception of facial features configural? Miami University of Ohio, Oxford, OH.

Papers, Invited Addresses, and Symposia Continued:

134. Townsend, J. T., & Spencer-Smith, J. (October, 2002). Infinite dimensional Riemannian spaces for face perception. American Mathematical Society. Workshop on neural and machine computation and learning.
135. Townsend, J. T., & Fific, M. (July, 2002). Parallel vs. serial processing and individual differences in high-speed scanning in human memory. Society of Mathematical Psychology, Miami University of Ohio, Oxford, OH.
136. Innes-Ker, A., & Townsend, J. T. (July, 2002). Emotional expressions as Gestalts. Poster presentation at Society of Mathematical Psychology, Miami University of Ohio, Oxford, OH.
137. Spencer-Smith, J., & Townsend, J. T. (July, 2002). Tests for curvature in psychological spaces. Society of Mathematical Psychology, Miami University of Ohio, Oxford, OH.
138. Townsend, J. T. (April, 2002). Short-term memory search: Parallel or serial with individual differences. Society for Experimental Psychologists, University of California, Berkeley, CA.
139. Fechner Day 2002, International Society for Psychophysics (October 2002). October 22-26, 2002, Rio de Janeiro.
140. Townsend, J. T. (March, 2003). Society for Experimental Psychologists, How fleet is a winning smile? Washington University in St. Louis.
141. Townsend, J. T. (June, 2003). Special International Workshop on Auditory Localization, methodology for determining the perceptual architecture in auditory localization. Utrecht, Netherlands.
142. Townsend, J. T. (July, 2003). Society for Mathematical Psychology. Parallel vs. service processing in visual search. Weber State College, Ogden, Utah.
143. Townsend, J. T. (August, 2003). European Society for Mathematical Psychology: Cloudy Function Theory. Madrid.

- 144. International Society for Psychophysics Organizer and Chair: Symposium on Perceptual Separability. Madrid, August, 2003.
- 145. Townsend, J. T. (October, 2003). International Society for Psychophysics. General recognition theory and probabilistic perceptual separability on single cognitive surfaces. Cyprus.
- 146. Townsend, J. T. (November, 2003). Psychonomics Society Gestalt Perception of Emotional Expressions: Vancouver.

Papers, Invited Addresses, and Symposia Continued:

- 147. Townsend, J. T. (December, 2003). Advanced symposium on mathematical models. Riemannian curvature in finite and infinite dimensional spaces. West Lafayette, IN.
- 148. *Workshop on Model Testing*. Using qualitative methods to test process models, Ohio State University, May, 2004.
- 149. *International Society for Psychophysics*, Plenary Address, Theories of Configurality, Coimbre, Portugal, October, 2004.
- 150. *Annual Benjamin Winer Memorial Lectures on Mathematical Theorizing and Measurement*, A New Kind of Hazard Function, Purdue University, November, 2004.
- 151. *Society for Mathematical Psychology*, Two papers with Leslie Blaha and Mario Fific, Ann Arbor, MI, July, 2004.
- 153. *Psychonomics Society*, Three presentations with Leslie Blaha, Mario Fific, Dr. Shannon Johnson, Dr. Julie Stout, & Kan Torii, Minneapolis, MN, November 2004.

PROFESSIONAL EXPERIENCE

- 1962 Research Technician; Review of effects of ionizing radiation on behavior; National Aeronautics and Space Administration, Sunnyvale, CA.
- 1962-1965 NDEA Fellowship in Mathematical Psychology
- 1963 Research Associate; research on human signal detection; Ames Research Center, National Aeronautics and Space Administration, Sunnyvale, CA.

- 1964 Research Assistant to Professor William K. Estes; research on mathematical learning models, Stanford University.
- 1965 Teaching Assistant to Professor L. Cooper; statistical methods; Stanford University.
- 1965-1966 Experimental Psychologist; research on perception, Stanford Research Institute, Menlo Park, CA.
- 1965-1966 Research Assistant to Professor Richard C. Atkinson; learning effects in human information processing, Stanford University.
- 1966-1968 Assistant Professor: Department of Psychology, University of Hawaii.
- 1968-1971 Assistant Professor; Department of Psychological Sciences, Purdue University.
- 1971-1976 Associate Professor; Department of Psychological Sciences, Purdue University.
- 1972-1973 Visiting Associate Professor; W. K. Estes; Mathematical Psychology Laboratory, Rockefeller University.
- 1976-1977 Visiting Scholar; Institut für Psychologie; Technische Universität Braunschweig.
- 1977-1989 Full Professor; Department of Psychological Sciences, Purdue University.
- 1982 Visiting Scholar; School of Social Sciences, University of California at Irvine.
- 1986 Visiting Professor; Department of Psychology, Stanford University
- 1989-Present A. Rudy Professor; Department of Psychology, Indiana University.
 B. Cognitive Science Steering Committee, Emeritus
 C. Co-Director of Cognitive Modeling Training Program (1992).
 Assumed Directorship – 1998-Present.

COURSES TAUGHT

Undergraduate Level:

1. Introduction to Psychology
2. Learning Theory
3. Sensory Processes
4. Perception and Psychophysics
5. Physiological Psychology

Combined Undergraduate and Graduate:

1. Introduction to Mathematical Psychology

2. Introduction to the Psychology of Consciousness
3. Statistics

Graduate Level Courses and Seminars:

1. Theory and Philosophy of Science in Psychology
2. Perception and Sensory Processes
3. Mathematical Models of Detection and Recognition
4. Measurement and Scaling
5. Stochastic Processing Models of Reaction Time
6. Models of Memory and Cognition
7. Theories of Human Problem Solving
8. Mathematical Models of Decision Making
9. Topological Characteristics of Visual Pattern Perception
10. Introduction to Connectionism and Dynamic Systems
11. Introduction to Nonlinear Dynamics, Catastrophe Theory and Chaos Theory.
12. Introduction to Differential Geometry for Cognitive Scientists

MAJOR UNIVERSITY SERVICE

1. Indiana University Faculty and Tenure Promotions Committee; Beginning, Fall, 1989-1994.
2. Steering committee for Cognitive Science Program, 1990-present
3. Co-Director Cognitive Modeling Training Program, 1992-present
4. Steering Committee for Alliance of Distinguished Rank Professors, 1993-present
5. Member, Task Force for Partnership with Public and Private Sectors, Strategic Directions Initiative, 1995.
6. Tenure and Promotion Committee, College of Arts and Sciences, 1997-present.
7. University Panel to Review the Vice Chancellor, 1998-1999.

REFERENCES

1. Dr. Richard C. Atkinson, President Emeritus
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2. Dr. William K. Estes
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1101 E. 10th St.
Bloomington, IN 47405-7007
3. Dr. William Uttal
Department of IUSE
Arizona State University
Tempe, AZ 85287-8634
4. Dr. A.A.J. Marley, Professor
Department of Psychology

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