

OBSERVATION & MEASUREMENT of BEHAVIOR & ENVIRONMENT

FALL 2017

Instructor:

Dr. April Becker

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Office Hours: Friday 11:00-

12:00 and by appointment

Time and Place:

Tuesday, 6:00 - 8:50

Wooten Hall Room 321

Course Description:

In this course you will learn to design observational systems to monitor behavior over time. You will learn about behavior as a scientific subject matter, the scientific significance of measurement, how to write behavioral definitions, how to use several recording systems, how to choose recording systems, how to assess the measurement system, and how to read and display data into tables and graphs.

Course Objectives:

1. Students will be able to distinguish behavioral from nonbehavioral measures of behavior.
2. Students will be able to distinguish topographical from functional and phenomenal definitions of behavior.
3. Students will be able to write behavior definitions amenable to measurement operations.
4. Students will be able to design data collection systems for measurement of a variety of behaviors and environmental conditions.
5. Students will be able to read, display and describe data on tables and graphs.
6. Students will be able to choose appropriate recording systems and graphs for given observation situations.
7. Students will be able to assess the accuracy and reliability of measurement systems.

Textbooks:

Johnston, J. M., & Pennypacker, H. S. (1993). Strategies and tactics of behavioral research. Third Edition. Hillsdale, NJ. Lawrence Erlbaum Associates, Publishers.

Celeration Finder ("Easy Charter" under chart tools: you can order from here for \$7

<http://www.behaviorresearchcompany.com/>

Reading packet- BEHV 5000: Observation and Measurement of Behavior and Environment. Available via copypro and blackboard.

Materials (some provided, some will need to be purchased):

Clipboard, stopwatch with alarm, wrist counter, calculator, ruler, SCC and graphing paper

Course Expectations:

Students are expected to complete all readings before each class period, to turn in their discussion questions during each class period, and to participate actively in class discussions and activities in order to maximize their learning experience. Students will be evaluated in part on preparedness and in-class activities.

Students are expected to regularly monitor their UNT e-mail. Students are expected to respond accordingly to messages and materials delivered either in class or via e-mail pertaining to schedule changes, clarifications, tasks or other course-relevant announcements and requests.

Topics and Readings

Week 1: Introduction

Week 2: Basic Issues of Measurement

Basic Issues in measurement (**pp. 126-151**). Simkins, L. D. (1969). *The basis of psychology as a behavioral science*. Englewood Cliffs, NJ: Prentice-Hall.

Week 3: Behavior as a Scientific Datum

Kantor, J. R. (1933). What the psychologist studies. A *survey of the science of psychology*. (**pp. 1-9**). Bloomington, Indiana: The Principia Press.

A system of behavior (**pp. 3-8**). Skinner, B. F. (1938). *The behavior of organisms: An experimental analysis*. Englewood Cliffs, NJ: Prentice-Hall.

Behavior as a scientific subject matter (**pp. 15-35**). Johnston, J. & Pennypacker, H. (1993). *Strategies and tactics of behavioral research*. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Levitis, D., Lidicker, W., & Freund, G. (2009). Behavioural biologists do not agree on what constitutes behaviour. *Animal Behaviour*, 78, 103-110.

Week 4: Definition and Measurement of Behavior

The generic nature of the concepts of stimulus and response (**pp. 347-366**). Skinner, B. F. (1961). *The cumulative record*. New York: Appleton-Century-Crofts.

The "response" in behavior theory (**pp. 129-149**). Schoenfeld, W. N. (1976). *Pavlovian Journal*, 11(3).

Defining response classes (**pp. 65-90**). Johnston, J. & Pennypacker, H. (1993).

Week 5: Behavioral Definitions

Topographic and Functional Classifications. Goldiamond, I. & Thompson, D. (1967/2004). *The Functional Analysis of Behavior*. Edited and revised by Paul Andronis. Boston, MA: Cambridge Center for Behavioral Studies.

The measurement of behavior. Greenspoon, J. & Rosales-Ruiz, J. (Third Draft). *Developing Behavior Intervention Programs*. Denton, TX: Our Press.

Observation and Measurement in Behavior Analysis (**pp. 127-150**). Miltonberger, Raymond and Weil, Timothy. (2013). *APA Handbook of Behavior Analysis: Vol. 1*.

Starting point and Behavior and Time (**pp. ii-8**). Graf, S., & Lindsley, O. (2002). *Standard celeration charting 2002*. Poland, OH. Graf Implements.

Week 6: Dimensional Quantities and Units of Measurement

Dimensional quantities and units of measurement (**pp. 91-108**). Johnston, J. & Pennypacker, H. (1993).

Gilbert, T. (1958). Fundamental dimensional properties of the operant. *Psychological Review*, 65, 272-282.

The cumulative record (**pp. 329-341**). Ferster, C., Culbertson, S., & Perrott-Boren, M. (1975). *Behavior Principles*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Handout: Data visualization (To be distributed)

Week 7: Observing and Recording

Observing and recording (**pp. 109-134**). Johnston, J. & Pennypacker, H. (1993).

The recording medium (**pp. 70-85**). Martin, P., & Bateson, P. (1986). *Measuring Behavior an introductory guide*. New York, NY: Cambridge University Press.

The use of the free operant in the analysis of behavior
(pp. 263-274). Ferster, C. (1953). *Psychological
 Bulletin*, 50(4).

Week 8: Frequency and Duration Recording

Frequency measures **(pp. 7-17)**. Ruggles, T., & Leblanc, J.
 (1979). *Observation methods in applied behavior analysis*.
 Kansas Research Institute for early childhood Education of
 the Handicapped (ECI Document no. 123). University of
 Kansas: Lawrence Kansas.

Frequency **(pp. 9-18)**. Graf, S., & Lindsley, O. (2002).

Duration measures **(pp. 18-23)**. Ruggles, T., & Leblanc, J.
 (1979). *Observation methods in applied behavior analysis*.
 Kansas Research Institute for early childhood Education of
 the Handicapped (ECI Document no. 123). University of
 Kansas: Lawrence Kansas.

Week 9: Frequency as a Fundamental Datum

Frequency of a performance as a fundamental datum **(pp. 321-
 327)**. Ferster, C., Culbertson, S., & Perrott-Boren, M.
 (1975).

Binder, C. (2001). Measurement: a few important ideas.
Performance Improvement, 40(3), 20-28.

Celeration **(pp. 19-30)**. Graf, S., & Lindsley, O. (2002).

Week 10: Interval Recording

Continuous interval methods **(pp. 23-33)**. Ruggles, T., &
 Leblanc, J. (1979). *Observation methods in applied behavior
 analysis*. Kansas Research Institute for early childhood
 Education of the Handicapped (ECI Document no. 123).
 University of Kansas: Lawrence Kansas.

Recording Methods (**pp. 48-69**). Martin, P., & Bateson, P. (1986). *Measuring Behavior an introductory guide*. New York, NY: Cambridge University Press.

Bounce (**pp. 31-40**). Graf, S., & Lindsley, O. (2002).

Week 11: Sampling procedures

Repp, A. C., Barton, L., & Brulle, A. (1987). An applied behavior analysis perspective on naturalistic observation and adjustment to new settings. In S. Landesman, P. M. Vietze, & M. J. Begab (Eds.), *Living environments and mental retardation* (**pp. 151-169**). Washington DC: American Association of Mental Retardation.

Thompson, C. Holmerg, M., & Baer, D. M. (1974). A brief report on a comparison of time-sampling procedures. *Journal of Applied Behavior Analysis*, 7, 623-626.

Powell, J. Martindale, A., & Kulp, S. (1975). An evaluation of time-sample measures of behavior. *Journal of Applied Behavior Analysis*, 8, 463-469.

Jumps and Turns and Outliers (**pp. 41-56**). Graf, S., & Lindsley, O. (2002).

Week 12: Scatterplots and PLA-Check

Touchette, P., MacDonald, R., & Langer, S. (1985). A scatter plot for identifying stimulus control of problem behavior. *Journal of Applied Behavior Analysis*, 18, 343-351.

Risley, T., & Cataldo, M. (1975). Planned activity check: Materials for training observers. Unpublished manuscript. University of Kansas.

Standard and fill the frame charts and percent correct charts and dangers (**pp. 57-76**). Graf, S., & Lindsley, O. (2002).

Week 13: Assessing Measurement

Assessing measurement (**pp. 135-163**). Johnston, J. & Pennypacker, H. (1993).

The reliability and validity of measures (pp. 86-97).

Martin, P., & Bateson, P. (1986).

Kelly, M. B. (1977). A review of the observational data-collection and reliability procedures reported in the *Journal of Applied Behavior Analysis*. *Journal of Applied Behavior Analysis*, 10, 97-101.

Varieties of standard celeration charts and charts from generated data sets (pp. 77-95). Graf, S., & Lindsley, O. (2002).

Student Activities

Discussion Questions

Students will write discussion questions about a particular issue addressed in each of the readings. Your questions may challenge or praise the usefulness of the facts, concepts, and analyses presented in the readings; they may also relate the reading to other issues and topics relevant to this course.

Assignments and in-class exercises

Students will define behaviors, record behavior with five different observational systems (frequency, interval, time-sampling, checklists, and scatterplots), calculate the reliability of their observations, make and read scatterplots of behavior, cumulative records, standard celeration and linear graphs.

Analysis of Behavioral Definition and Recording Procedures

Students will select a behavior from JABA and describe the ways it has been defined and measured.

Design of an Observational System

Students will design a complete behavioral observation system.

Self-Observational Project

Students will design and carry out a complete observational system to measure a behavior of their own. They will write

a report including a definition of the behavior, data sheets, observational and reliability procedures, a table of the data, a graph of the data, and a description of the data.

Charting Project

Students will select a data set from a publicly available source. This data should span the course of at least one decade. Students will graph, analyze and describe this data set.

Vocabulary and Terms Exam

Students will track their own performance throughout the semester on a SAFMEDs learning project using the key definitions and procedures learned during the course. A test at the end of the semester will consist of a final performance, submission of the chart used to monitor performance, and a description of what the chart shows.

Grades

| Evaluation Criteria | % of Grade |
|--|------------|
| 1. Discussion questions | 15% |
| 2. Assignments and in-class exercises | 15% |
| 3. Analysis of Behavioral Definition and Recording | 10% |
| 4. Design of an Observational System | 15% |
| 5. Self-Observational Project | 15% |
| 6. Charting Project | 10% |
| 7. Vocabulary and Terms Exam (SAFMEDS) | 20% |

Scholarly Expectations

Students are expected to use correct spelling, grammar and clarity in any written material submitted for class credit. If you need assistance in fulfilling this expectation, please refer to the writing lab (listed below), where you will find teachers ready to help you acquire these skills.

In keeping with the norms of higher education, students are expected to uphold standards of academic integrity, and failure to do so may result in serious consequences. Refer to your student handbook for complete provisions of the policies and procedures set forth by UNT.

ADA Statement:

The Department of Behavior Analysis, in cooperation with The Office of Disability Accommodation, complies with the Americans with Disabilities Act. Please notify me of your accommodation request before the 4th class meeting.

Religious Holidays

Please let me know within the first 15 days of the semester if you require provision for religious holidays.

Student Resources

Office of Disability Accommodation - <http://disability.unt.edu/>

Learning Center - <http://learningcenter.unt.edu/>

UNT Writing Lab - <http://writinglab.unt.edu/>