

Cognition and Learning Section

Benton Pierce Comps Reading Guide

- Baddeley, A. (1998). *Human memory: Theory and practice*. Boston, MA: Allyn and Bacon.
- Johnson, M. K., Hashtroudi, S., & Lindsay, D. S. (1993). Source monitoring. *Psychological Bulletin*, *114*, 3-28.
- Koriat, A. & Goldsmith, M. (1994). Memory in naturalistic and laboratory contexts: Distinguishing the accuracy-oriented and quantity-oriented approaches to memory assessment. *Journal of Experimental Psychology: General*, *123*, 297-315.
- Malott, R. W., Whaley, D. L., & Malott, M. E. (1996). *Elementary principles of behavior (3rd edition)*. Englewood Cliffs, NJ: Prentice Hall.
- Metcalf, J. & Shimamura, A. P. (eds.) (1994). *Metacognition: Knowing about knowing*. Cambridge, MA: MIT Press.
- Terry, W. Scott. (2006). *Learning and memory (3rd edition)*. Boston, MA: Allyn and Bacon.

Shulan Lu Comps Reading Guide

Go over the course materials (PSY 620).

It is also a good idea that you go over a recent undergrad cognitive psychology textbook if you are not familiar with the materials in this area.

Curt Carlson Comps Reading Guide

In addition to Benton's and Shulan's guides:

- Clark, S. E., & Gronlund, S. D. (1996). Global matching models of recognition memory: How the models match the data. *Psychonomic Bulletin & Review*, *3*, 37-60.
- Koriat, A., Goldsmith, M., & Pansky, A. (2000). Toward a psychology of memory accuracy. *Annual Review of Psychology*, *51*, 481-537.
- Nairne, J. S. (2002). The myth of the encoding-retrieval match. *Memory*, *10*, 389-395.
- Nairne, J. S., Pandeirada, J. N. S., & Thompson, S. R. (2008). Adaptive memory: The comparative value of survival processing. *Psychological Science*, *19*, 176-180.
- Schacter, D. L. (1999). The seven sins of memory. *American Psychologist*, *54*, 182-203.

Strayer, D. L., & Drews, F. A. (2007). Cell-phone induced driver distraction. *Current Directions in Psychological Science, 16*, 128-131.

Tulving, E. (2002). Episodic memory: From mind to brain. *Annual Review of Psychology, 53*, 1-25.

Wixted, J. T. (2005). A theory about why we forget what we once knew. *Current Directions in Psychological Science, 14*, 6-9.

Cognition and Instruction Section

Tracy Henley Comps Reading Guide

Go over the course materials (PSY 625).

Shulan Lu Comps Reading Guide

Go over the course materials (PSY 626).

History, Ethics, and Educational Psychology Section

Tracy Henley Comps Reading Guide

Review a fairly scholarly, fairly comprehensive, textbook on the History of Psychology. Hilgard would be best, but the Hergenhahn or the Thorne & Henley books would suffice. Also, review a “high level” Intro text. It need not even be new. Suggested authors would be Gleitman or Baron.

Be sure and know the contributions of the obvious “big names” in American Psychology that are relevant to either Cognition or Learning or “Education.” This would include (minimally) James, Dewey, Watson, Skinner, Hull, and Tolman, as well as the “founders” of cognitive science -- George Miller, Roger Brown, Ulric Neisser, Noam Chomsky, Jerome Bruner, etc.

Understand the differences (in both theory and method) between the various “schools” of psychology: Structuralism, Functionalism, Behaviorism, and Gestalt Psychology, as well as modern Cognitive Science.

You should have some understanding of the classic scholarship in the philosophy of science and the history of sciences (e.g., Kuhn, Feyerabend, Lakatos, Laudan) as it relates to psychology.

You should have a good understanding of the various grand debates in the philosophy of psychology: mind-body, nature-nurture, molar-molecular, etc. You should be able to associate names and specifics with these (e.g., Descartes, Galton).

You should have at least a little knowledge of the relatively recent philosophers that have been interested in psychology and/or social science (Pepper, Popper, Wittgenstein, Ryle, Heidegger, Dennett, Searle, etc).

You should know (by heart) all the parts of the APA’s ethical guidelines that address research.

You should be familiar with CFR 45-46 which outlines the laws that address Human Subjects Research.

You should be able to generate several examples of ethically “problematic” research from the history of psychology (or related disciplines) and understand what makes them “problematic.” For example, “Kallikak” and “Tuskegee” should be meaningful to you in this context.

Statistics and Research Method Section

Steve Ball Comps Reading Guide

The student should be mindful that statistics and research methodology are not entirely equivalent. Research methodology entails a way of thinking about answering empirical questions and is as much logical as more traditionally mathematical. Thinking about how to avoid errors that are methodological and not statistical is crucial. Confounding, for example, which can be thought of as the situation that obtains when an independent or predictor variable is correlated with some extraneous variable, is often best resolved by adjusting the organization of planned events and measures in a study more than through indirect statistical procedures, e.g., analysis of covariance.

2. The student should be able to design more than one experiment or research study that answers the same empirical question. For example, one might determine the relationship between moral development and ethical behavior using either an experimental or correlational design, the latter of which may entail multiple regression.
3. Likewise many empirical questions can best be answered with designs that are blends, such as are available in the general linear model, which permits combining classical experimental designs with regression.
4. The student should be aware of the relationships that might obtain across multiple studies pertaining to the same or similar variables. One can imagine, for example, that replicating a study, with or without modifications or extensions, might serve a useful purpose in some instances and not in others. In a general sense, as well, the student should understand the cumulative nature of research, i.e., the way in which one study builds on the findings of another to produce a progressively more complete picture of a particular set of events.
5. In light of these and other considerations, “statistics” in the narrower sense can be seen as one of a number of tools that the researcher uses to answer the questions s/he confronts as an empirical scientist. Types I and II errors, and power estimates, are not simply memorized definitions but very real ways of describing the nature and limits of what one has observed and measured. Likewise, the underlying theoretical distribution of, say, F , t , or Chi square, is seen as an essential benchmark against which to check empirical measures derived from real participants.
6. The student should see that the nature of one’s measures impacts the way in which one can answer the questions. Here the matter of the statistical probity of various parametric and nonparametric procedures is obviously key in deciding what to use, first as an adequate procedure whose assumptions the data meet, and then, within a general grouping, which procedure best fits the logical organization

of the design. In a simple case, for example, the Pearson r works when one is trying to see the relationship between two continuous variables with strong measurement characteristics, but not for two variables that represent simple ordinal rankings. Likewise, even with interval or ratio level data, the Pearson procedure might not be appropriate because of the organization of the study. Random assignment to groups (a controlled categorical grouping) might suggest the appropriateness of a t -test, analysis of variance, or similar more “experimental” statistic.

7. A relative newcomer to the researcher’s tool kit is the notion of effect size. The student should be mindful that, whatever form it occurs in – a function of the statistical distribution that it is used with, effect size is an index of the “heftiness” of the proportion of the variability in the study that the statistically significant effect explains. It answers the “So what?” question. The student should have this sense, as well as a feeling for several different effect size measures (I hesitate to say “statistics”) for correlational procedures, and statistics that are more directly appropriate with experimental and quasi-experimental designs.

Ray Green Comps Reading Guide

Overall, this should be one of the “easier” sections to prepare for as the realm of information is relatively finite and well delineated. I suggest using any research methodology and published statistics textbook to provide an outline for review. With that said, here are some specific concepts to consider. Please realize that this is not an exhaustive list of topics or questions. Rather this is a guide for the level of knowledge that you are expected to demonstrate on this portion of your comprehensive exam.

Research Methodology

Different types of research methods (i.e., case studies to laboratory experiments). (1) What are the strengths and weaknesses of each approach; (2) What are the potential biases that may appear in different methods (e.g., central tendency effect in surveys; demand characteristics in an experiment).

Although they have their own sections please review ethical issues and the concepts of reliability and validity. Although you are not likely to have a question directly about these topics in this section, nonetheless demonstration of your understanding of these topics may be useful in answering a question.

What are the differences between randomized and non-randomized research designs? Why would you sometimes choose a non-randomized design?

The basis of research in our field is the Scientific Method. Be able to discuss this concept and how it impacts our approach to the search for knowledge.

Statistics

What does statistical significance really mean? What is the difference between statistical and practical significance?

What is the relationship between random sampling and inferential statistics?

What is the difference between parametric and non-parametric designs? Why might you choose one over the other?

Although you are not responsible for formulas, you should know the assumptions that go along with the more common statistical analyses.

Why is variance in your data essential when looking for statistical difference between groups when using the ANOVA model?

What are Type I and Type II errors? What is power? How are these concepts related?

What is effect size? What does it tell us? What role does effect size play in a meta-analysis?

What is the Central Limit Theorem? How is the concept of the sampling distribution related to the CLT? What role do these concepts play in the inferential process?