

Program Portfolio
Psychology
April 2008

Description of Program

Catalog Description: The degree program in psychology provides specialized study in psychology within the context of the broader goals of a liberal arts education. The Psychology program promotes an understanding of behavior, provides an understanding of the foundations of psychology as a scientific discipline, integrates the influence of psychology on contemporary thought, and promotes skills in scientific research. An undergraduate degree in psychology prepares students for entry into graduate and professional schools and prepares students for entry-level positions in the helping professions.



*Psychology capstone poster session 2008
photo by Laura Hancock*

Psychology provides a liberal arts program of study leading to Bachelor of Arts or Bachelor of Science degrees. Courses leading to either a minor or major in psychology are available both on campus and online. Many students utilize the minor as a component of a degree in Liberal Studies, or to go along with the pre-nursing curriculum. Psychology is a popular major both on campus and online. The degree requirements for the online major in psychology are the same as those for on-campus students, with the exception of the capstone courses in Experimental Psychology (PSY 440/441) which have been adapted from the campus capstone courses (PSY 460/461) and are specifically tailored for online delivery.

Recent Programmatic Changes

There have been several significant changes in the Psychology program since 2000:

- a. Several important curricular changes were made in the Psychology program: the capstone requirement was changed from a thesis course to an experimental course; an Honors Degree in psychology was created, requiring completion of an experimental Honors Thesis project; a required lower-division discipline-specific writing course was added as part of the University Writing Requirement; courses in Personality and Neuropsychology were created; the on-campus capstone course was extended to a two-course sequence; another capstone course sequence was created for online students majoring in psychology.
- b. Courses were developed for online delivery, making the psychology major available to students online.

- c. A fourth position (Dr. Timmermann) was added to the program in 2003 to help meet the increasing demand for online courses.
- d. Psychology relocated from Zabel Hall to the recently remodeled Badgley Science Center in 2003, enhancing its physical space. At the same time, psychology joined the Division of Science, Mathematics, and Technology (it had formerly been associated with the Division of Social Sciences and Modern Languages).
- e. Psychology received a National Science Foundation CCLI grant to conduct a three-year study of the effect of adding laboratory sections to the General Psychology sequence. Lab sections ran from 2004 through 2008. Following the grant period, and based on assessment of students on methodology, a separate laboratory course, PSY 223, Introduction to Laboratory Methods in Psychology, was implemented for psychology majors.
- f. Significant equipment purchases were made as part of the Badgley Science Center equipment grant, notably a 128-channel Geodesic net EEG system for recording electrical activity of the human brain.

How Program serves the Mission of the University and Needs of Region

The degree program in psychology supports the university mission by providing specialized study in psychology within the context of the broader goals of a liberal arts education. Psychology program graduates go on to a variety of graduate programs, including Ph.D. programs in various fields of experimental and clinical psychology, and Masters programs in a variety of specialties, such as school psychology or social work. Others go on to medical training such as physician assistant and nurse practitioner programs. Locally, graduates have obtained various positions in social services in La Grande and other towns, working, for example, with children and families, the elderly, substance abusers, and the developmentally disabled.

Programmatic Outcomes/Objectives

Students receiving a B.S. or B.A. in Psychology will have the following:

- The ability to read and discuss primary research in psychology.
- The ability to design and carry out a research project.
- The ability to write in a scientific style.
- The ability to understand and evaluate research models and statistics.

Key Programmatic Assessments

Students in psychology are offered a variety of ways to demonstrate their proficiencies. Faculty use assessments such as written exams, written papers, reports based on primary research articles, oral presentations, poster presentations, small group collaborations, completion of computerized statistical projects, participation in laboratory research, written laboratory reports, supervised field experience, and capstone research projects, all geared toward qualitative and quantitative assessment of specified learning outcomes by means of stated criteria. Two specific assessment projects will be described here. The first is the assessment implemented for the senior capstone projects, both on-campus and online. The second includes several assessments implemented for the laboratory sections of the General Psychology course under the NSF CCLI grant.

1. Senior capstone assessment

For the capstone project, a grading rubric was designed to link assessment to program outcomes. See example of rubric in Appendix 1. The rubric is used to examine students' content knowledge and ability to read and discuss primary research in psychology (programmatic outcome 1). The rubric also evaluates their ability to design and carry out a research project (programmatic outcome 2) and their ability to understand and evaluate research models and statistics (programmatic outcome 4). The rubric includes evaluation of students' skills in scientific writing (programmatic outcome 3) and students' ability to prepare a professional presentation of research.

The Psychology program has utilized the grading rubric form, developed for capstone project assessment, to evaluate the PSY 460 Experimental Psychology capstone projects completed since December 2005. During Final Exam Week, the faculty member who teaches the capstone course schedules a public viewing session of approximately two hours in length, during which all students in the capstone course present their research projects in poster format. As the other Psychology faculty tour the poster session, each student describes his/her project's purpose, procedures, data analysis, and conclusions. Each faculty member completes a grading rubric form for each poster, and these forms are then given to the faculty member responsible for the course for use in scoring each project. In that manner, all senior capstone projects are viewed and assessed by all program faculty.



Psychology capstone poster session 2008 (photo by Laura Hancock)

This process worked well and effectively allowed review and assessment of the capstone course's Program Learning Objectives by multiple faculty members. In one instance, a student's final course grade was revised after the course instructor re-examined the grading rubric forms for her specific project. See examples of the text of two recent capstone posters in Appendix 2. As a result of this capstone assessment procedure, along with other faculty discussion of the Psychology capstone, the program faculty concluded that the capstone objectives could be better met if students received additional training in research design, and were able to extend data collection and analysis beyond the few short weeks allowed within a single course. Consequently, the Psychology program revised its capstone process to include a pre-requisite course in research design. This allows students to spend one quarter reviewing professional

literature and designing a research project, and a second quarter collecting and analyzing data and preparing the project's results for presentation. These changes were implemented in 2007-08. Another change to the procedure, implemented in 2007-08, had students complete hand-outs for their posters several days in advance of the poster session. These hand-outs were distributed to the faculty so that they could read the text of the poster prior to attending the poster session. In this way, more time at the poster session could be spent in questioning students and discussing projects.

Another change that was made in 2006-07 and 2007-08 was the inclusion of Psychology alumni evaluators of the capstone projects and the creation of an Alumni Award of Merit, given to one or more student projects selected by the alumni judges. The alumni have included Psychology graduates who work on campus or in the community. They come to the poster session and discuss the students' projects, providing the students a different audience from the Psychology faculty. The rubric that the faculty use to assess the projects is shared with the alumni, but alumni evaluations are used to determine merit; their evaluations are not part of the actual grading for the student projects.

Thus far, the discussion has described the campus senior capstone projects. A similar procedure is used in evaluation of the online senior capstone projects (see Appendix 3 for example). Instead of a poster session with printed posters, however, the Psychology faculty evaluate an online version of the poster, submitted as a large Powerpoint slide. The same rubric is used, with the exception of item #9, student's verbal defense of poster.

For 2007-08 campus students, the averaged assessments resulted in the following distribution:

Outcome	Rubric numbers	Exemplary	Very Good	OK	Insufficient	Missing
Read and discuss primary research	3, 6		67%	33%		
Design and carry out a research project	1,4,9,10		56%	44%		
Write in scientific style	2,7	11%	67%	22%		
Understand/evaluate research models and statistics	5,8		44%	44%	11%	

Each year, the Psychology faculty will review the procedure for assessing the capstone projects for on campus and online courses.

2. Laboratory methods assessment and Introductory course assessment

As part of the NSF CCLI grant, the Psychology faculty developed problem-based assessments on experimental methods. One problem set was used for the PSY 201 course and a different one for the PSY 202 course. See examples of these assessments and their corresponding grading rubrics in Appendix 4.

The initial purpose of these assessments was to compare students' knowledge of key aspects of methodology and experimental design before and after the laboratory sections were implemented in the introductory courses. In the year prior to introducing the laboratories, students in PSY 201 and 202 completed these assessments. In the two years during the laboratories, students completed the same assessments. These problem sets were completed during the lecture part of the course.

Another pair of evaluative assessments was given to students at the beginning and end of each course during those 4 years (see Appendix 5). Students were asked questions about their background and interest in psychology and, in the end-of-term assessment, were asked to rate their knowledge related to experimental methods.

We had hypothesized that the content and practice involved in the laboratory sections would lead to improved scores on the problem-based assessments; that is, students who took the courses with labs in years 2-3 would do better than students who took the courses without labs in year 1. We have not found evidence for that difference based on the problem sets. Because of the number of students and the length of time involved in this assessment, we had student teaching assistants trained to use grading rubrics to score the problem sets. Although their scores were reliable after training, different students participated in scoring across different years. We are currently re-examining the scoring process. Nonetheless, we do not have any evidence that the implementation of the labs led to improved performance on the problem sets.

It is interesting to note that what did change was the students' self reports about their understanding of research methods. Those students who had labs with the course reported that they understood more about methodology, on the end-of-term assessment, than did students who did not have labs with the course. We also found that students evaluated the labs more positively in the PSY 202 courses than in the PSY 201 courses. The PSY 201 course was offered in fall and winter terms, had high enrollments, and was often taken by students for general education purposes. The PSY 202 course was offered in spring term, was smaller, and the majority of students in the class were psychology majors and minors.

Based on the lack of change in the problem-based assessment, the students' evaluation of the lab portion of the course, and the amount of time devoted to covering 4 or 5 lab sections within a term, the psychology faculty decided to make a change in the curriculum. The introductory courses are now taught without a lab component, and are 4 credits instead of 5. For psychology majors, we introduced a new course, PSY 223, Introduction to Laboratory Methods, for 2 credits. In this new course, we continue to use the problem sets used in the assessments – portions are given as homework assignments and portions are used as part of the final exam. In this way, we can continue to monitor students' knowledge of key methodological issues.

When the lab sections were part of the General Psychology courses, they took class time and included written assignments, so DeAnna Timmermann, who taught those courses, omitted another type of writing assignment she had used prior to the lab implementation. Those assignments had been to summarize research articles, based on media reports. After the lab sections were discontinued, Prof. Timmermann was able to include the research summaries in the courses again. Examples from one student's assignments early and late in the term are included in Appendix 6. The practice of summarizing and discussing research articles is built upon in 300-level courses that require evaluations or summaries of primary research.

Student Accomplishments

Students served by the psychology program include both traditional and nontraditional students, taking courses both on-campus and online.

Students have gone on to graduate programs in a variety of fields, including Ph.D. programs in clinical psychology, Ph.D. programs in experimental psychology and in neuroscience, Masters programs in counseling and school psychology, and Psy.D. programs in clinical psychology.

Student bibliography (selected examples)

Publications

Balaban, M. T. & Oldham, A. (2005) Categorization. In N. J. Salkind (Ed.) *Encyclopedia of Human Development*. Thousand Oaks, CA: Sage Publications.

Balaban, M. T. & Reisenaur, C. (2005). Sensory development. In N. J. Salkind (Ed.) *Encyclopedia of Human Development*. Thousand Oaks, CA: Sage Publications.

Mann-Jones, J, and Ettinger, R.H. (2004) Dextromethorphan modulation of context-dependent morphine tolerance. *Experimental and Clinical Psychopharmacology*. 12, 417-421.

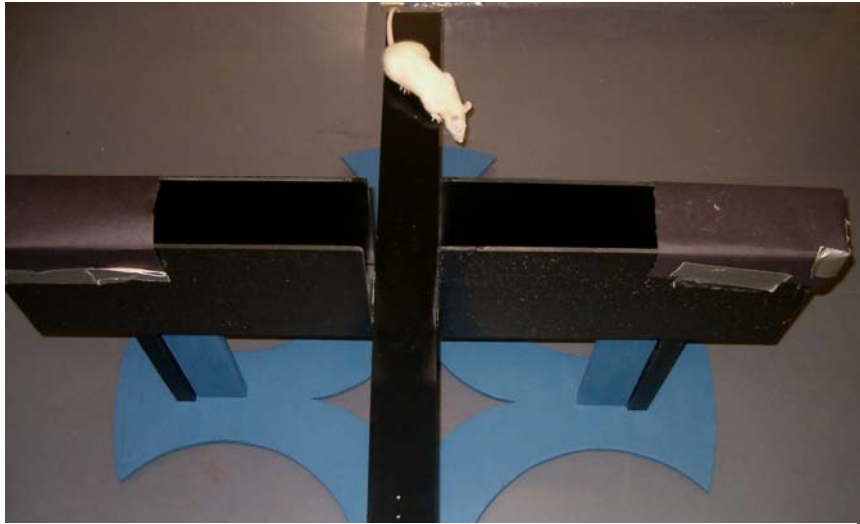
Presentations

Lyons, C. A. & Kiklevich, A. M. (2004, May). *Induction by prior jackpots and habituation to present jackpots in public gaming*. Paper/poster presented at the Association for Behavior Analysis International convention, Boston, MA.

Booth, E., Headings, K. & Ettinger, R. H. (2007, May). *The influence of a novel context on tolerance to cocaine*. Poster presented at Eastern Oregon University's Spring Symposium, La Grande, OR.

Fecht, S. (2007, May). *Theory of mind and memory in preschool-aged children*. Poster presented at Eastern Oregon University's Spring Symposium, La Grande, OR.

Petersen, S. (2007, May). *EEG: Correlates of false memory*. Poster presented at Eastern Oregon University's Spring Symposium, La Grande, OR.



Rat on elevated plus maze, Senior capstone project 2008

Programmatic Assessment: Synthesis and Recommendations

Psychology has been tracking demand for its on-campus and online courses each year. The data from 1998-2003 show an increasing demand for online psychology courses, and a stable on-campus demand. Based on the growth in enrollment in its online courses, the Psychology program developed a version of its degree that could be completed solely through online courses. Dr. Timmermann consequently joined our faculty in 2003, and the online degree was established in 2003.

Since 2003, the demand for online psychology courses has continued to increase. As courses were added to the online program to accommodate majors off-campus, the number of students enrolling in senior-level and capstone courses grew. Psychology now finds itself stretched to meet the overload required to keep both on-campus and online degrees available. As a result, in October 2006 we proposed the creation of an additional FTE position, to be housed with the Psychology program and largely dedicated to serving the online degree, both as an instructor and as a student advisor. We still advocate for this position.

Other useful program assessment information comes from the evaluation of the laboratory components of the General Psychology course, initiated as part of the CCLI NSF grant that the Psychology faculty secured in 2003. Those components were instituted in Fall 2004, and were assessed through various measures, including student satisfaction and comparison in knowledge scores with non-lab sections. Based on the analysis of these data, the laboratory component in General Psychology was rated more highly, and appeared to be more valuable in learning, for students who had identified psychology as their major. As a result, the psychology program changed the general psychology sequence from two 5-credit courses with labs to two 4-credit courses without a lab, followed by a third 2-credit lab-based research course (PSY 223) required only of psychology majors.

Assessment of the capstone options in psychology was modified using new scoring rubrics in December 2005. Psychology faculty complete capstone assessments using these rubrics for on-

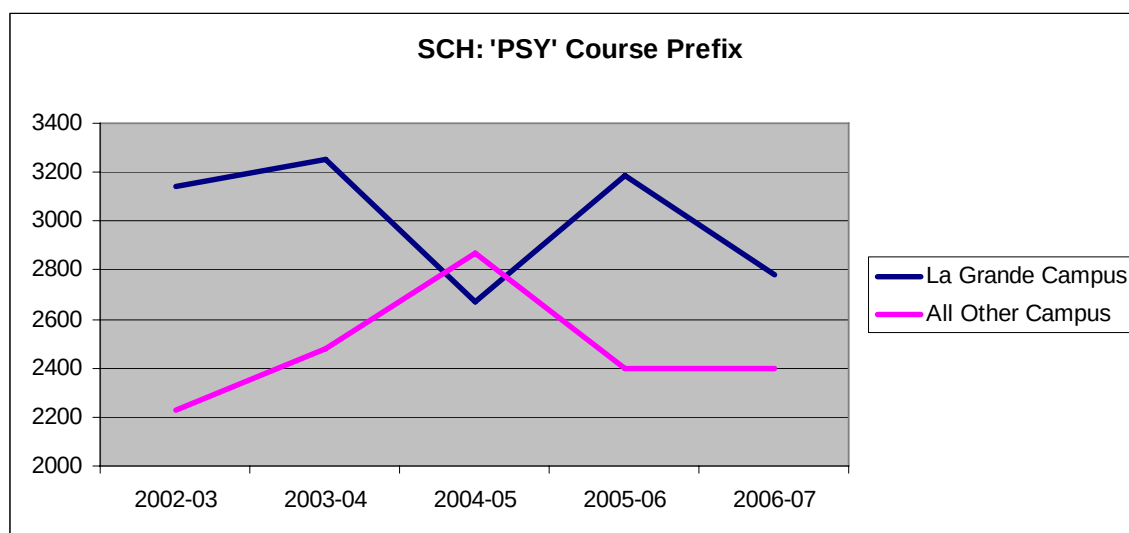
campus and online projects. These assessments indicate that the psychology program is meeting its goals and objectives in providing a strong grounding in the science of psychology, and its majors compete effectively for entry into graduate schools.

Enrollment and Program Performance

Note that the Psychology faculty also teach the Statistics and Experimental Design under the STAT prefix. Students can choose to enroll in either PSY 327 or STAT 327. The PSY/STAT 327 courses are offered more than once each year and are offered both on campus and online. Thus, the following enrollment data underestimate the actual enrollments in our courses.

Eastern Oregon University

5 Year Student Credit Hours Generated by 'PSY' Course Prefix

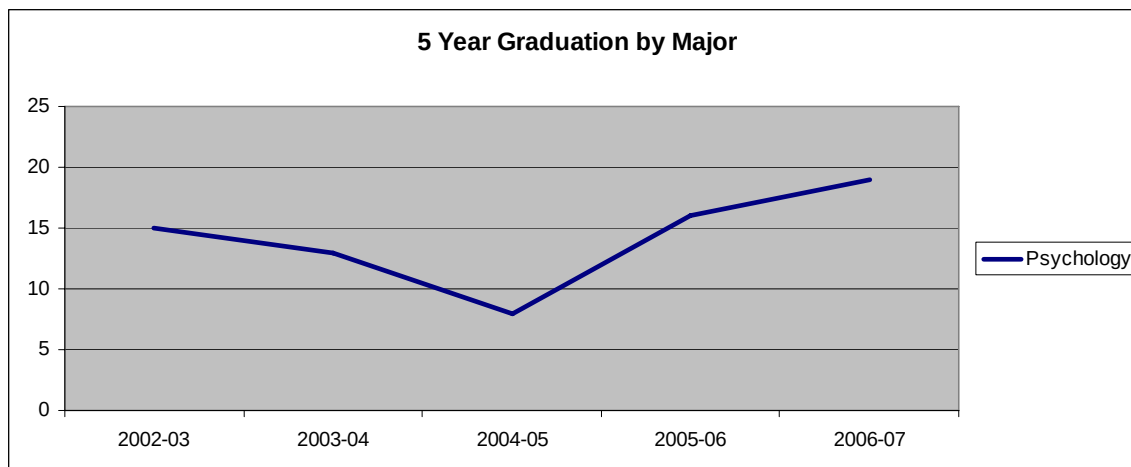


	2002-03	2003-04	2004-05	2005-06	2006-07
La Grande Campus	3144	3250	2672	3184	2782
All Other Campus	2232	2480	2872	2401	2401
Total	5376	5730	5544	5585	5183

- Data include all terms, effective end-of-term

Eastern Oregon University

5 Year Graduation by Psychology Major



	2002-03	2003-04	2004-05	2005-06	2006-07
Psychology	15	13	8	16	19

Commentary on Enrollment and Graduate Trends

- Enrollment data are strong and relatively steady for on-campus and online courses.
- These data for graduates in Psychology may not be accurate because for the first few years of the online major, students had declared themselves initially as Liberal Studies majors and, even though they graduated with a Psychology B.S., that designation was not corrected.
- The number of graduates seems to be increasing in recent years. In 2007-08, combining on-campus and online students, we have 21 students completing senior capstone projects. For the 2008-09 year, we have over 30 students who report that they are planning to do a Psychology capstone.

Program and Course Scheduling Requirements

In the Psychology curriculum, students select from a variety of 300- and 400-level courses. Each 400-level course has a specific prerequisite course; therefore, it would be difficult to change those 300-level prerequisite courses into alternate-year courses. Currently, there is an alteration between PSY 335 (Cognition) and PSY 330 (Emotion) both for on-campus and online courses. Some variety at the 300 and 400 level is necessary in order to ensure breadth in students' training and in order to support students' future interests in particular fields of graduate study. For these reasons, we have included a reasonable number of options for students in the following plan.

General Education and Service Course Schedule: On-campus courses

Note: PSY 311, 330, 335, and 357 (on 2nd list for minors/majors) also are Gen Ed courses

FALL YEAR 1

FALL YEAR 2

	Load	Mean
Course	Hours	Enroll
201	4	80
327	5	40

	Load	Mean
Course	Hours	Enroll
201	4	80
327	5	40

WINTER YEAR 1

	Load	Mean
Course	Hours	Enroll
201	4	80
202	4	50
211	3	40
231	3	40
327	5	40

WINTER YEAR 2

	Load	Mean
Course	Hours	Enroll
201	4	80
202	4	50
211	3	40
231	3	40
327	5	40

SPRING YEAR 1

	Load	Mean
Course	Hours	Enroll
202	4	50
211	3	40
327	5	40

SPRING YEAR 2

	Load	Mean
Course	Hours	Enroll
202	4	50
211	3	40
327	5	40

TOTAL 500

TOTAL 500

Minor/Major Course Requirements Schedule

Note: PSY 311, 330, 335, and 357 also are Gen Ed courses

FALL YEAR 1

	Load	Mean
Course	Hours	Enroll
222	3	20
223	2	12
343	6	18
345	5	22
350	5	24
424	6	8
460	5	14

FALL YEAR 2

	Load	Mean
Course	Hours	Enroll
222	3	20
223	2	12
343	6	18
345	5	22
350	5	24
424	6	8
460	5	14

WINTER YEAR1

	Load	Mean
Course	Hours	Enroll
311	5	24
342	5	14
451	5	13
470	5	7
461	5	14
403	var	var

WINTER YEAR 2

	Load	Mean
Course	Hours	Enroll
311	5	24
342	5	16
451	5	14
461	5	14
403	var	var

SPRING YEAR 1			SPRING YEAR 2		
Course	Load Hours	Mean Enroll	Course	Load Hours	Mean Enroll
222	3	20	222	3	20
223	2	12	223	2	12
330	5	18	335	5	12
357	5	18	357	5	18
370	5	26	370	5	26
433	5	7	433	5	8
453	5	12	453	5	10
403	var	var	403	var	var
TOTAL		303			292

Total SCH Required per academic year (General Education and service courses and major courses) about 4400

Total-----load hours

Staffing

Presently there are four full-time faculty in Psychology at Eastern Oregon University: Marie T. Balaban, Ph.D., Professor of Psychology; R.H. Ettinger, Ph.D., Professor of Psychology; Charles A. Lyons, Ph.D., Professor of Psychology; DeAnna L. Timmermann, Ph.D., Assistant Professor of Psychology.

Faculty Accomplishments

Marie T. Balaban

Grants

(9/03 -8/06) Inquiry-Based Laboratories with a Biobehavioral Emphasis for Introductory Psychology Supported by the National Science Foundation (NSF Course, Curriculum, and Laboratory Improvement (CCLI) grant); co-Principal Investigator with C. Lyons & R.H. Ettinger

Publications: Book chapters

Balaban, M. T. & Berg, W. K. (2007). Measuring the electromyographic startle response: Developmental issues and findings In L. Schmidt & S. Segalowitz (Eds.), *Developmental Psychophysiology: Theory, Systems, and Methods*. Cambridge: Cambridge University Press.

Balaban, M. T. (2007). Implementing inquiry- or problem-based learning in the undergraduate science curriculum: Ideals, examples, and concerns. In K. Karukstis & T. Elgren (Eds.), *How to Design, Implement, and Sustain a Research-Supportive Undergraduate Curriculum: A*

compendium of successful curricular practices from faculty and institutions engaged in undergraduate research.

Publications: Book reviews

Balaban, M. T. (2005, July 21). How children contemplate cats, dogs, and other fuzzy categories [Review of the book *Building object categories in developmental time*]. *PsycCRITIQUES Contemporary Psychology: APA Review of Books*, 50 (No. 29), Article 6. Retrieved July 21, 2005 from the PsycCRITIQUES database.

Balaban, M. T. (2006, July 26). Painting the human infant precocious [Review of the book *Infants' Sense of People: Precursors to a Theory of Mind*]. *PsycCRITIQUES Contemporary Psychology: APA Review of Books*, 51 (No. 30). Retrieved September 21, 2006 from the PsycCRITIQUES database.

Balaban, M. T. (2007, July 18). Should the little scientist please sit down? Spotlight on the socially-constructed, embodied, pragmatic child [Review of the book *Young Minds in Social Worlds: Experience, Meaning, and Memory*]. *PsycCRITIQUES Contemporary Psychology: APA Review of Books*, Retrieved September 8, 2007, 52 (No. 29). Retrieved September 8, 2007 from the PsycCRITIQUES database.

Publications: Encyclopedia entries

Balaban, M. T. (2005). Dependent Variable. In N. J. Salkind (Ed.) *Encyclopedia of Human Development*. Thousand Oaks, CA: Sage Publications.

Balaban, M. T. (2005). Experiment. In N. J. Salkind (Ed.) *Encyclopedia of Human Development*. Thousand Oaks, CA: Sage Publications.

Balaban, M. T. (2005). Sampling. In N. J. Salkind (Ed.) *Encyclopedia of Human Development*. Thousand Oaks, CA: Sage Publications.

Balaban, M. T. (2005). Statistical Significance. In N. J. Salkind (Ed.) *Encyclopedia of Human Development*. Thousand Oaks, CA: Sage Publications.

Balaban, M. T. & Oldham, A. (2005) Categorization. In N. J. Salkind (Ed.) *Encyclopedia of Human Development*. Thousand Oaks, CA: Sage Publications.

Balaban, M. T. & Reisenaur, C. (2005). Sensory Development. In N. J. Salkind (Ed.) *Encyclopedia of Human Development*. Thousand Oaks, CA: Sage Publications.

Meeting presentations

Ettinger, R.E., Balaban, M.T., Lyons, C., & Holder, K.C. (2004, April). Assessing the influence of curricular change: Preliminary problem-based assessments and student evaluations of Introductory Psychology. Invited poster presented at: NSF/AAAS meeting on Invention and Impact: Building Excellence in Undergraduate STEM education, Crystal City, VA.

Timmermann, D.L., Balaban, M.T., Ettinger, R.H., & Lyons, C. (2006, January). Student assessments of inquiry-based laboratories in Introductory Psychology. Presented at: The 28th annual National Institute for the Teaching of Psychology, St. Petersburg Beach, FL.

Other activities

Councilor, Psychology, Council on Undergraduate Research, 2000-01, 04-06 (nationally-elected)

Invited reviewer (2004-current):

Grant agencies:

National Institute of Mental Health

Journals:

Developmental Psychology

Journal of Cognition and Development

Journal of Experimental Child Psychology

Behavior Research Methods, Instruments and Computers

Psychophysiology

Grand Awards Judge for Behavioral Science, April, 2004 Intel International Science & Engineering Fair, Portland, OR

Richard H. Ettinger

Grants

(9/03 -8/06) Inquiry-Based Laboratories with a Biobehavioral Emphasis for Introductory Psychology_Supported by the National Science Foundation (NSF Course, Curriculum, and Laboratory Improvement (CCLI) grant); co-Principal Investigator with C. Lyons & M.T.Balaban

Publications:

Ettinger, R.H. (In Progress). Psychopharmacology: The Pharmacological Treatment of Psychological Disorders. Upper Saddle River, NJ: Prentice Hall Publishers.

Ettinger, R.H. (2007). Psychology: The Science of Behavior. 2nd Edition, Redding, CA: Horizon Publishers.

Ettinger, R.H. (in press). Context-dependent expression of tolerance and behavioral sensitization to acute cocaine administration in rats. Experimental and Clinical Psychopharmacology.

Mann-Jones, J, and Ettinger, R.H. (2004) Dextromethorphan modulation of context-dependent morphine tolerance. Experimental and Clinical Psychopharmacology. 12, 417-421.

Presentations:

Ettinger, R.H. (2006). Context Control over the Expression of Tolerance to Cocaine. Western Psychological Association, Seattle, May 2006.

Ettinger, R.H. (2005). Active Immunization against Cocaine Effects. Invited address to Department of Neuroscience, WSU, April.

Ettinger, R.H., Balaban, M., and Lyons, C. (2004). Assessing curricular change: problem-based assessment in introductory psychology. Invited presentation, NSF-CCLI-STEM conference, Arlington, VA, April.

Charles A. Lyons

Grants

(9/03 -8/06) Inquiry-Based Laboratories with a Biobehavioral Emphasis for Introductory Psychology_Supported by the National Science Foundation (NSF Course, Curriculum, and Laboratory Improvement (CCLI) grant); co-Principal Investigator with M.T. Balaban & R.H. Ettinger

Publications

Ghezzi, P. M., Lyons, C. A., Dixon, M. R., & Wilson, G. (Eds.) (2006). *Gambling: Behavior theory, research, and application*. Reno, NV: Context Press.

Lyons, C. A. (2006). What can gambling tell us about addiction? In Ghezzi, P. M., Lyons, C. A., Dixon, M. R., & Wilson, G. (Eds.), *Gambling: Behavior theory, research, and application* (pp. 9-18). Reno, NV: Context Press.

Lyons, C. A. (2006). Methodological issues in the experimental analysis of gambling. In Ghezzi, P. M., Lyons, C. A., Dixon, M. R., & Wilson, G. (Eds.), *Gambling: Behavior theory, research, and application* (pp. 91-104). Reno, NV: Context Press.

Lyons, C. A. (2007). Getting there: Commentary on "Toward an integrative behavioral model of gambling" by Weatherly and Dixon. *Analysis of Gambling Behavior*, 1, 23-24.

Presentations

"Assessing the influence of curricular change: Preliminary problem-based assessments and student evaluations of Introductory Psychology," with R.H Ettinger, M.T. Balaban, and K. C. Holder. Invited paper presented at the NSF/AAAS meeting on Invention and Impact: Building Excellence in Undergraduate STEM education, Crystal City, VA, April, 2004.

"Toward standardized methodology in gambling research: A fully programmable slot game," with Mark R. Dixon. Paper presented at the Association for Behavior Analysis International convention, Boston, MA, May 2004.

“Induction by prior jackpots and habituation to present jackpots in public gaming,” with Abby M. Kiklevich. Paper/poster presented at the Association for Behavior Analysis International convention, Boston, MA, May 2004.

Chair and Discussant for symposium, *Recent advances in the analysis of gambling behavior*. Association for Behavior Analysis International convention, Chicago, IL, May 2005.

“Student assessments of inquiry-based laboratories in Introductory Psychology,” with D. L. Timmermann, M. T. Balaban, and R. H. Ettinger, Paper/poster presented at the 28th annual National Institute for the Teaching of Psychology; St. Petersburg Beach, FL, January, 2006.

“Do slot games substitute for poker?” Paper delivered at the Association for Behavior Analysis International convention, Atlanta, GA, May 2006.

“Choice in free-ranging gamblers.” Paper delivered at the Association for Behavior Analysis International convention, San Diego, CA, May 2007.

Professional appointments

Advisory Panel, Cambridge Center for Behavioral Studies web site (<http://www.behavior.org/>), Gambling section, 2004 - present.

Editorial Board, *Analysis of Gambling Behavior*, 2006-present.

Guest reviewer, *Journal of Applied Behavior Analysis*, 2006-2007.

Chair, Institutional Research Board (IRB), Eastern Oregon University, 2006 – present.

In progress

(Journal article) Lyons, C. A. Choice in free-ranging gamblers. Submitted and in revision, *Journal of Applied Behavior Analysis*.

(Textbook) Lyons, C. A. Abnormal Psychology: Clinical and scientific perspectives. Redding, CA: BVT Publishing.

DeAnna L. Timmermann

Publications

Odle, M., Ouellette, J.A., Swartwood, J.N., Timmermann, D.L., & Farrell, J. (2007). Prefrontal deficits in ADHD: Piloting a new paradigm. (*In Submission*)

Frederick, J. A., Timmermann, D. L. , Russell, H. L., & Lubar, J. F. (2004) EEG coherence effects of audio-visual stimulation (AVS) at dominant and twice dominant alpha frequency. *Journal of Neurotherapy*, 8(4), 25-42.

Swartwood, J.N., Swartwood, M.O., Lubar, J.F., Timmermann, D.L. (2003). EEG differences in ADHD-combined type during baseline and cognitive tasks. *Pediatric Neurology*, 28(3), 199-205.

Conference Presentations

Timmermann, D.L., Balaban, M.T., Ettinger, R.H., & Lyons, C.A. *Student assessments of inquiry-based laboratories in Introductory Psychology*. Presented at the 28th Annual conference of the National Institute on the Teaching of Psychology, St. Petersburg, FL, January 2 – 5, 2006.

Textbook Reviews

General Psychology (8 chapters) for Thompson Publishing, Fall 2007.

Neuropsychology text proposal for Oxford University Press, Fall 2007.

Neuropsychology (2 chapters) for Thompson Publishing, Spring 2006.

General Psychology (4 chapters) for Thompson Publishing, Winter 2006.

Conference Attendance/Training Sessions:

Attended Council of Undergraduate Research Dialogues, Alexandria, VA – March 2007.

Attended Basic Session and Advance Session Summer School training for our EGI electroencephalogram equipment, Eugene, OR – July and August 2006, August 2007.

Attended 25th Annual Conference on the First-Year Experience, Atlanta, GA February 2006.

Attended 24th Annual Conference on the First-Year Experience, Phoenix, AZ February 2005.

Minimum Staffing Requirements

1) Current assessment of Faculty

Based on the current faculty in psychology, the following total FTE are available:

Total = 1.0 FTE -----

2) Efficiency Ratios

Load/Faculty On Campus

Based on the 2006/7 SCH, the ratio of SCH to faculty in PSY prefix courses is _____
Student load hours/1.0 FTE = _____ load hours per faculty member.

Total SCH is _____

ON Campus SCH _____

ONLINE SCH _____

ON SITE SCH _____

SCH/Faculty Need

On campus _____cr hr/ 36

Summary Recommendations/Observations

The psychology faculty members are active and productive scholars and teachers who provide a strong academic program. In the past several years, the program faculty members have been authors or co-authors of four books (2 in preparation/press), seven publications in professional journals (2 in press or under revision), four book chapters, three book reviews, five textbook reviews, six encyclopedia entries, and eight professional presentations at national and international conferences. They have been guest reviewers for several professional journals. Three of the faculty have served as co-principal investigators on a NSF curricular grant. Other accomplishments include serving as a grant reviewer, serving as a member of the editorial board for a journal, and election as a councilor in psychology for the Council on Undergraduate Research.

Psychology students have been active in presenting their research projects at the Spring Symposium. Graduates have been very competitive in admission to graduate programs in psychology, social work, neuroscience, and pharmacology programs.

The online program is strong and growing, but its growth represents potential threats to quality unless adequate staffing is achieved. Psychology will actively work to secure an additional FTE as a first step in ensuring that the online degree maintains standards similar to the campus degree in psychology. Psychology faculty remain active and productive, and this commitment to discipline will continue to enhance the undergraduate students' educational experience.

Administrative Review of Program

List of Appendices

- Appendix 1 Grading rubric for Psychology capstone poster projects
- Appendix 2 Two examples of on-campus Psychology capstone poster hand-out
- Appendix 3 Example of online Psychology capstone poster
- Appendix 4 Problem-based assessments and grading rubrics for introductory lab sections
- Appendix 5 Beginning- and end-of-term student evaluation forms for introductory courses
- Appendix 6 Beginning and end-of-term article review assignments for introductory course

Appendix 1

Student _____

Rater _____

	Exemplary	Very Good	OK	Insufficient	Missing
1. Poster layout: Title, authors, introductory text, methods, results, conclusions, reference sections are displayed					
2. Written with a concise, scientific style - complete sentences and formal language, appropriate tense, APA format, free of grammatical or spelling errors.					
3. Introductory text specifies the purpose of the experiment and the hypotheses being tested, with appropriate references to previous research.					
4. Methods section describes participants and their selection, informed consent procedures, apparatus used for the experiment, computer software if applicable, procedures involved in group assignment, participant instructions, experimental design.					
5. Results section includes descriptive statistics for each dependent variable, summarizes findings with tables and/or figures, includes appropriate statistical tests of the experimental hypotheses.					
6. Discussion/conclusion section relates outcomes of the experiment to the purposes and hypotheses described in the introductory text.					
7. Reference section in APA format, each reference listed is cited in the text, and each text citation has a corresponding reference.					
8. Visual displays of results: graphs are clearly titled, axes are labeled, chart format is appropriate to the data being displayed, data are plotted accurately. Tables are clearly labeled, with column headings. Figures and tables are numbered, and referred to within the text.					
9. Student's verbal defense of poster provides accurate description of reasoning for selection of variables, measurement techniques, research design, and statistical testing					
10. Overall: poster presentation illustrates student abilities in critical thinking, data analysis, and communication of research results					

Comments:

Appendix 2

Example 1: On-campus student poster hand-out

Melinda Hassinger

Abstract

Twelve gambling and 12 non-gambling college students completed a discounting task that asked them to choose between immediate and delayed hypothetical amounts of money. When the discounting task was complete participants did a survey measuring impulsiveness (BIS-11) and one measuring procrastination of academic tasks (PASS). Results showed a slightly steeper discounting slope for gambling students but the difference was not significant. Estimated slope scores of gamblers and non-gamblers showed no significant difference between groups. There was also no significant difference between group mean scores of impulsiveness and procrastination for gamblers and non-gamblers. No significant correlations were found between slope values and BIS-11 and PASS scores, individually or overall. Gambling participants did not differ much from non-gambling participants overall because the population sampled from was so similar. This may have led to the lack of significant findings. Future researchers could choose participants from a problem gambling population to increase the difference in gambling behavior between groups.

Introduction

Research suggests that gambling is influenced by both personality traits and behavior (Parke, Griffiths, & Irwing, 2004; Rachlin, 1990). There has been some research done on delay discounting and the role gambling behavior plays in it (Dixon, Marley & Jacobs, 2003; Holt, Green & Myerson, 2003). Delay discounting is a measure used to determine how a person would decide between immediate or delayed rewards. For example, would a person rather have \$500 today or \$1000 in one year? Usually hypothetical monetary amounts are used in discounting tasks. Dixon et al. (2003) showed that pathological gamblers have a higher rate of discounting (meaning that they chose lower immediate amount of money over higher delayed amounts) when compared to a control group of non-gamblers. Studies like this have led to implications about gambling, what behaviors govern it, and how personality affects it. Do people who gamble have more impulsive behaviors overall? Do they tend to put off aversive tasks such as homework? The current study was done to determine if a steeper discounting slope would be seen in gambling college students versus non-gambling college students. I hypothesized that a steeper slope would be correlated to more impulsive behavior and higher degrees of academic procrastination.

Methods

Participants

Twenty-four college students participated in this study. Twelve individuals (9 women and 3 men), who scored a 1 or above on the South Oaks Gambling Screen (SOGS) (Lesieur & Blume, 1987), were placed in the gambling condition. The mean SOGS score for gambling college students was 1.58. Twenty non-gambling college students (8 women and 4 men) who scored a zero on the SOGS also volunteered for this study and were used as the control group. These participants were matched for age and gender to the gambling participants.

Design & Procedure

- Participants completed the experiment individually in thirty-minute sessions.

- They signed an informed consent form and completed an information survey asking their age and other personal finance questions.
- Participants then completed the discounting task in ascending and then descending order. The experimenter recorded the indifference points (or point at which a participant switched from choosing the delayed amount to choosing the immediate amount and vice versa) for each delay condition.

Ascending example:

\$1000 in One Week OR \$1 NOW	\$1000 in One Week OR \$5 NOW	\$1000 in One Week OR \$20 NOW		\$1000 in a Week OR \$1000
--	--	---	--	-------------------------------------

- The delayed reward was always \$1,000. There were 14 different immediate amounts ranging from \$1,000 to \$1 in each delay condition. The six delay conditions were a delay of 1 week, 1 month, 6 months, 1 year, 3 years and 10 years.
- Participants then completed the Barratt Impulsivity Scale (BIS-11) (Barratt & Stanford, 1995). Higher scores on the BIS-11 reflect higher levels of impulsivity.
- The BIS-11 consists of thirty statements such as:

	Rarely/never			Almost always	
I get bored easily when solving thought problems.....	1	2	3	4	5
I do things without thinking.....	1	2	3	4	5

- Then they completed the Procrastination Assessment Sale-Students (PASS) (Fischer & Corcoran, 1994). Higher scores on the PASS reveal higher levels of procrastination.
- The PASS consists of five sections that assess different areas of academic procrastination, such as “writing a term paper.” Each section has three questions (below) that participants are asked to rate.

	Never			Always	
To what degree do you procrastinate tasks such as this.....	1	2	3	4	5
How much of a problem is procrastination of this task for you.....	1	2	3	4	5
How much do you want to decrease the tendency to procrastinate on this task.....	1	2	3	4	5

- Participants were told that upon completion of the study they would receive an e-mail describing the full purpose of the study to debrief them.

Results

For descriptive purposes the indifference points were calculated by averaging together all individual indifference points for each group at each of the six delays. The discounting slope for each group appears in Figure 1. The averaged data show a linear decrease in indifference point as a function of delay.

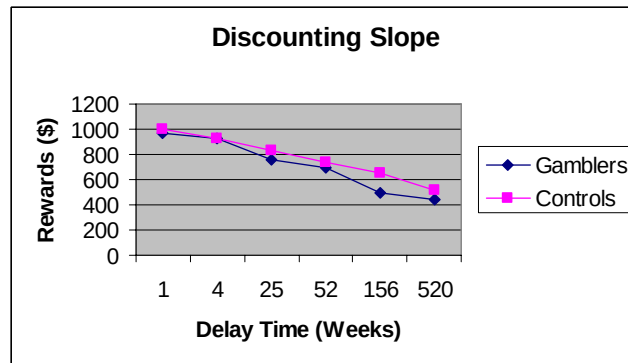


Figure 1. The discounting slope of the average of indifference points (or group points) at each of the six delays for gambling and non-gambling groups.

In discounting theory the indifference points should decrease across each successive delay value. An example of differing levels of discounting is shown in Figure 2. A participant who discounts steeply would be considered a high discounter, and a participant who discounts less steeply would be considered a low discounter. There were some departures from the ideal linear decreasing pattern. Indifference points frequently remained the same across successive delays and occasionally increased. The latter pattern occurred in four out of 12 of the gambling participants and in zero out of 12 of the non-gambling participants. These departures could have likely influenced the results.

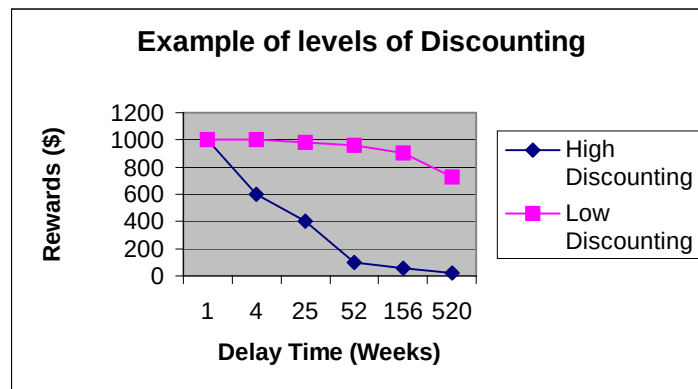


Figure 2. An example of individual indifference points at each of the six delays for a high discounter and a low discounter from the study.

Past research described discounting using the hyperbolic function $V = A / (1 + kD)$, in which V represents the discounted value of the reward, A is the absolute value of the reward (\$1000), D represents the delay in weeks, and k is the slope constant. When the value of k is larger the delay function will be steeper. Because my average data showed a linear decrease with delay the equation was linearized to view it as X vs. Y data, where $Y = (1000/V) - 1$, and $X = D$. The best-fit slope of these data would be similar to the “ k ” in the hyperbolic equation. A regression was then done on XY to obtain an estimated slope value with the Excel LINEST function. With this form of linearization the value obtained is slightly different than the best-fit hyperbolic (or k), therefore the value obtain for the purposes of this study will be referred to as the “estimated slope value.”

The results of statistical tests showed the mean slope value for gamblers was 0.006, $SD = 0.007$, and for non-gamblers was 0.012, $SD = 0.027$. The means were in the opposite direction than I had predicted they would be. However, the median score for gamblers was 0.0032 and was 0.0019

for non-gamblers, these data were in the predicted direction. Plotting individual slope values (Figure 3) shows overall higher scores in gamblers except for a few outliers in the non-gambling group that skewed the mean.

Using a Mann-Whitney U test, the difference between the two groups was not statistically significant, $p > .05$. As seen in Figure 1, there was a slightly steeper slope for the gamblers than the non-gamblers as predicted even though it was not significant.

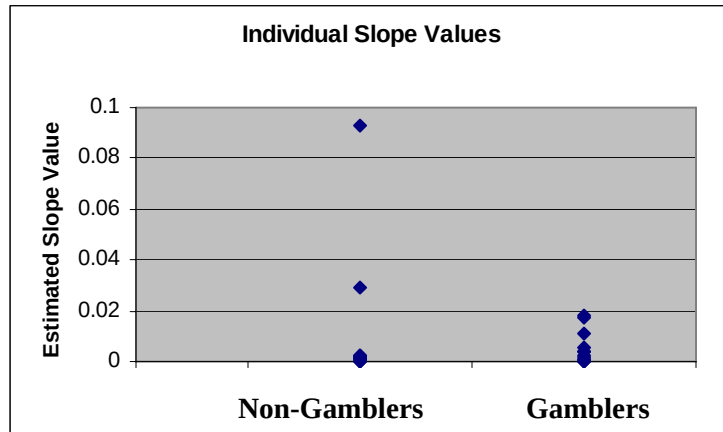


Figure 3. The individual estimated slope value for gambling and non-gambling participants. The median score for gamblers was 0.0032 and for non-gamblers was 0.0019.

My results showed the mean PASS scores for the two groups were 55.7, $SD=8$ for gamblers and 51.1, $SD=15.5$ for non-gamblers. The difference in the means was in the predicted direction of greater procrastination for gamblers than non-gamblers, but was not statistically significant, $t(11)=(-0.91)$, $p=0.19$, as tested by a two-sample one-tailed t test. The means of group scores for the BIS-11 were 76.1, $SD=4.93$ for gamblers and 77, $SD=16.34$ for non-gamblers. The difference in the means from the two groups was not statistically significant, $t(11)=0.506$, $p=0.31$, as tested by a two-sample one-tailed t test. No significant correlations were found between the PASS and BIS-11 scores and the estimated slope values for gambling and non-gambling groups when each group was tested individually, as well as when groups were combined.

Discussion

Past discounting studies have shown that people with heavy gambling behavior will be more likely to choose a smaller immediate amount over a larger delayed amount at each delay condition (Dixon et al., 2003). The present study showed this tendency but failed to find significant differences between groups. The indifference points ideally should decrease at each successive delay condition. This was not always the case in this study. It is interesting to note that all the participants who did not follow a normal discounting pattern were from the gambling condition. Results could have been influenced by this disrupted pattern.

My hypothesis that gamblers could be considered impulsive, because they chose smaller immediate amount more often than waiting for a higher future reward, has not been supported in this study. Also, my hypothesis that procrastination of academic tasks would be greater in gambling participants than non-gamblers has not been shown.

There are several limitations to this study.

- The first is that participants were all college students, and therefore the data cannot necessarily be generalized to other populations.
- The second limitation is the number of participants tested in this study was smaller when compared to others studies like it.
- Third, the participants were not randomly put into groups. Because gambling behavior is not something that can be controlled, the participants were placed in groups depending on pre-existing gambling behavior.
- And fourth, hypothetical situations will never show as accurately what a person would do if they were actually in a real situation; however, one study found that real-world incentives do elicit the same discounting patterns as hypothetical incentives (Lane et al., 2003).

This study has failed to support the theory of discounting by showing significant differences in gambling and non-gambling groups. Had my study more closely replicated past studies, and had the population that the sample was taken from been specifically problem gamblers, the findings would likely have been different. More research is needed to better isolate the variables that could possibly influence discounting.

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Example 2. On-campus student poster hand-out

Kelly Balnicky

Abstract

This experiment examined the anxiolytic effects of valerian on female hooded rats under the age of 6 months. A plus-maze elevated 50 cm from the floor was used to measure anxiety. The experimental group that received a 10 mg/kg solution of valerian injected intraperitoneal (IP) 30 minutes prior to placement in the maze showed a significant decrease in anxiety when compared to the control group. This can be seen by a significant increase in the time spent with all four paws out on an open arm, $t(8)=-2.30, p=.02$. These results indicate that valerian may have sedative effects on the central nervous system (CNS) and may produce anxiolytic effects in rats. This preliminary research on valerian is the first step to utilizing it as a natural alternative to benzodiazepines which can cause negative side effects such as tolerance, dependence, and withdrawal.

Valeriana officinalis, given the common name valerian can be found growing in the temperate regions of North America, Europe, and Asia. Valerian has a long history of use as a sedative (central nervous system depressant). Today valerian is sold over the counter as an herbal treatment for insomnia and anxiety (Sakamoto, Mitani, & Nakajima, 1992). Like benzodiazepines, valerian acts on gamma-aminobutyric acid (GABA) receptors. Valerian works by displacing muscimol at the receptor site (Yuan et al., 2004). Khom et al., (2007) found that VA (a constituent of valerian root) was an allosteric modulator of GABA_A receptors and directly activated GABA_A receptors producing anxiolytic effects. Performing a behavioral study on rats within an elevated plus-maze would be an appropriate test to determine the extent of these anxiolytic effects and until now this procedure has yet to be done.

The present study examined valerian's anxiolytic effects on female hooded rats within an elevated plus-maze. An elevated plus-maze is widely used and accepted as an animal measure of anxiety. The maze consists of two open arms and two enclosed arms elevated off the ground. Rats have an innate fear of height and openness (open arms) and prefer dark tight places (enclosed arms) (see Figure 1). This is why the time spent on the enclosed arms exceeds that of the time spent on the open arms (Graeff, Netto, & Zangrossi, 1998). I propose that the valerian test group will spend more time on the open arms than the control group.

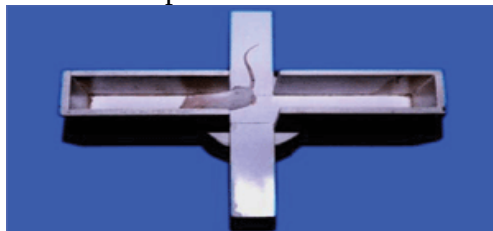


Figure 1. This is an elevated plus-maze. The maze has two enclosed and two open arms.

Methods

Subjects

15 female hooded rats under the age of six months were used in this experiment. The rats were individually housed in 25 cm x 20 cm x 17 cm metal cages in a room on a 12 hour light dark schedule. The rats had unlimited access to food and water while in their home cages. The room the rats were housed in was kept at a constant 71°F.

Chemicals

Valerian root was dissolved in a 50/50 solution of un-denatured ethanol and distilled water, and then finely ground using a pestle and mortar. Once ground the solution was transferred to a beaker and covered. The valerian solution was heated to 70°C for 30 minutes and then filtered twice to remove any un-dissolved solutes (U.S. Patent No. 6,913,770, 2005). The diazepam (a benzodiazepine) came already prepared in liquid form.

Apparatus

An elevated plus-maze raised 50 cm off the ground was constructed for this experiment. Each arm of the elevated plus-maze was 50 cm long and had a width of 10 cm. Two of the arms had no walls and the other two arms had walls 30 cm high.

Design & Procedure

1. Five rats were randomly assigned to one of the three groups: Control, diazepam, and valerian.
2. 30 minutes prior to testing the rats in the elevated plus-maze the rats were injected intraperitoneal (IP) with 1 mg/kg. of diazepam or 10 mg/kg of valerian depending upon their random assignment to the diazepam or valerian group.
3. Each rat was individually tested in one -five minute session.
4. Each rat was placed in the elevated plus-maze facing away from the experimenter at the junction of the four arms. To avoid disruption of the rat by the experimenter a video recorder monitored the rat during the 5 minute testing period. The video recording of the rat was viewed on a television screen.
5. The number of seconds each rat spent with all four paws out on an open was documented. In addition, the number of times each rat walked out to the end of an open arm was also documented.

Results

The anxiolytic effects of valerian were tested on rats within an elevated plus-maze. A Two Sample t-Test Assuming Equal Variances was used to determine if IP administration of valerian had a significant anxiolytic effect on rats when compared to the control group. Indeed, rats that were randomly assigned to the valerian group spent a mean time of 82.44 seconds out of a 5 minute period (± 15.25 S.E.M) with four paws out on the open arms. Rats that were randomly assigned to the control group spent a mean time of 45.42 seconds out of a 5 minute period (± 5.06 S.E.M) with four paws out on the open arms; this group difference was significant, $t(8)=-2.30$, $p=.02$) (see Figure 2).

The diazepam group did not exhibit the anxiolytic effects that have been found in similar studies. The mean time in seconds spent with four paws out on an open arm was 28.4 out of a 5-minute period (± 11.3 S.E.M); this was far less time than other studies reported. A Two Sample t-Test Assuming Equal Variances indicated that the difference between the control group and the diazepam group was not significant, $t(8)=1.37$, $p=.1$ (see Figure 3). It was predicted that the diazepam group and valerian group would spend about the same number of seconds with four paws out on an open arm.

The number of times that a rat walked out to the end of one of the open arms was also examined. The mean number of walkouts for the valerian group was 3 times in a 5 minute period ($\pm .40$ S.E.M). The mean number of walkouts for the control group was 1.8 times in a 5 minute period ($\pm .58$ S.E.M) (see Figure 4). A Two Sample t-Test Assuming Equal Variances indicated that this difference was not significant, $t(7)=-1.59$, $p=.07$, but it was in the predicted direction.

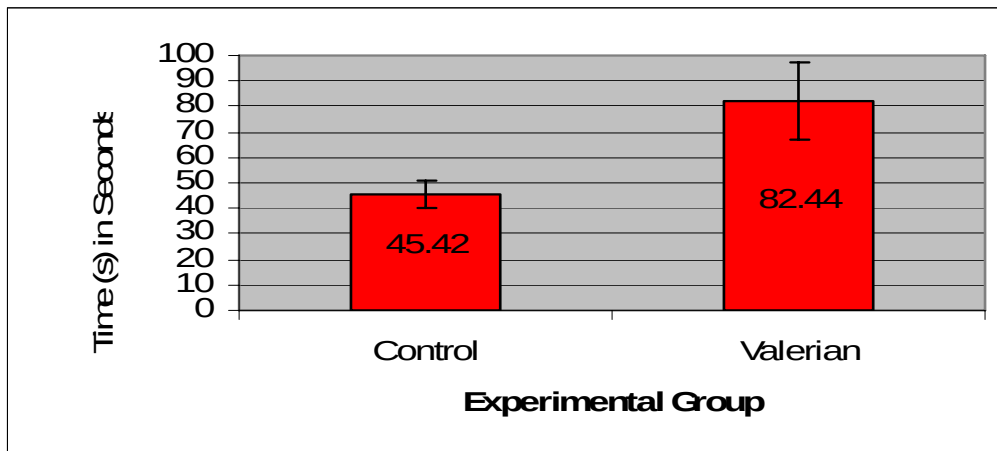


Figure 2. Mean time (s) in seconds spent with four paws out on the open arms. Y error bars represent ± 1 standard error of the mean.

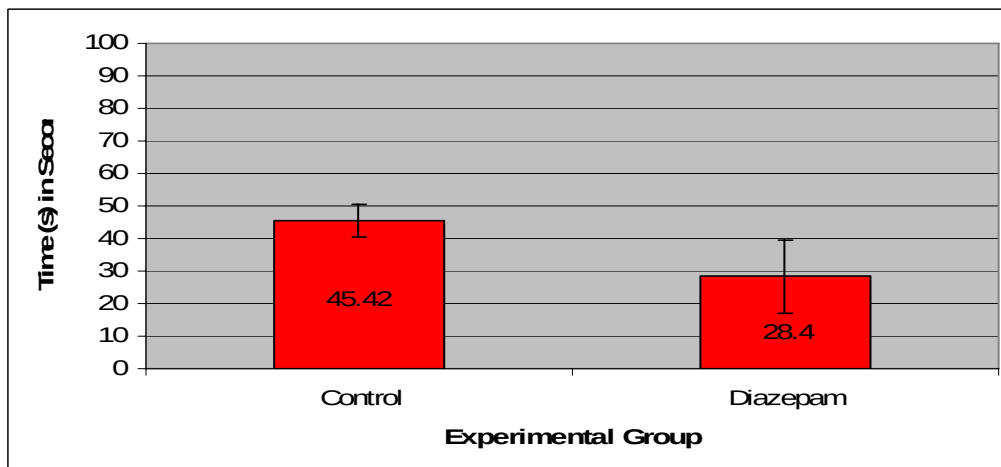


Figure 3. Mean time (s) in seconds spent with four paws out on the open arms. Y error bars represent ± 1 standard error of the mean.

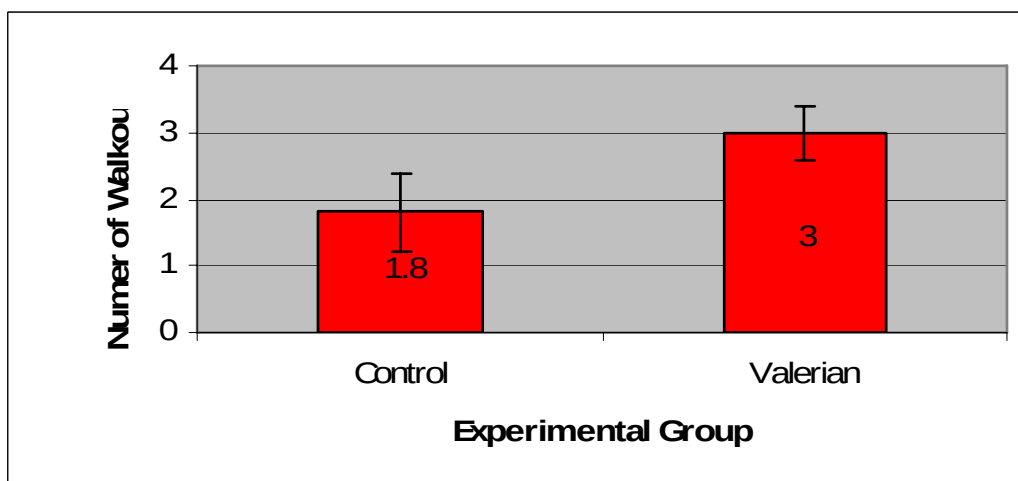


Figure 4. Mean number of walkouts to the end of an open arm. Y error bars represent ± 1 standard error of the mean.

Discussion

The elevated plus-maze was used in this experiment to test the anxiolytic effects of valerian on hooded rats. If a rat spends very little time out on the open arms of the maze then it has high anxiety (fear of the openness and elevation). If a rat spends an increased amount of time on the open arms of the maze then it has low anxiety (decreased fear of the openness and elevation) (Graeff, Netto, & Zangrossi, 1998).

Thirty minutes after administration of valerian the experimental group was placed in the maze for 5 minutes. The valerian group spent more seconds out on the open arms of the maze than compared to the control group which spent significantly less seconds out on the open arms of the maze. These results mimic the findings of a study by Mechan et al., (2002) that looked at the effects of diazepam on rats within an elevated plus maze. They found that diazepam, a commonly prescribed benzodiazepine used to treat anxiety, increased the amount of time that the rats spent out on the open arms of the maze. With such similar results it is possible that valerian may have some of the same abilities to lower anxiety-like behaviors that benzodiazepines do. If this is true then valerian could be a natural alternative to benzodiazepines which currently are the main treatment prescribed to for anxiety. An alternative to benzodiazepines is greatly needed due to their negative side effects such as tolerance, dependence, and withdrawal. Abuse of benzodiazepines is another issue. Brand name benzodiazepines such as Xanax or Klonopin can be sold on the street for five to ten dollars per pill, depending on the dosage strength (Longo & Johnson, 2000). Substituting a natural anxiolytic that does not produce the same euphoric effects as benzodiazepines could help alleviate this problem.

This experiment may have fallen short due to the following limitations: Variations in natural activity levels between rats, human error, falls, possible sedative effects from the ethanol used in the valerian solution, and feeling overly secure within the enclosed arms. Human error came into play when one of the five minute maze sessions was recorded over before all the data could be collected. This is why the valerian group is one subject short for the number of walkouts. One rat from each experimental group fell at least 50 cm prior to being placed in the maze. The rats that fell had the same stunned reaction when placed in the maze; therefore they were removed from the study. A 50/50 mixture of water and ethanol was used to dissolve the valerian powder. It is possible that ethanol used in making the valerian solution could have sedative effects on the rats if it all was not cooked out during the heating process. Covers were placed over the enclosed arms to prevent the rats from climbing out. These covers could have made the enclosed arms overly inviting, decreasing natural exploration. The diazepam group not displaying a decrease in anxiety could have been related to dosage or handling prior to placement in the maze.

More research is needed on the psychotropic and side effects of valerian, but the current research suggests that valerian could be a natural alternative to benzodiazepines.

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The Effect of Stimulus Format on False Memories

Katie A. Parsons



Introduction

Ever since Deese's (1959) study showed the susceptibility of the human brain to false memories, hundreds of researchers have attempted to duplicate and expand upon Deese's work. Deese's experiment involved the use of word lists containing twelve items semantically associated to a critical lure word. Roediger and McDermott (1995) revived Deese's work and conducted a similar experiment utilizing semantically-related word lists. The results and methodology of both of these important experiments resulted in what is known today as the Deese-Roediger-McDermott (DRM) paradigm (Nabeta & Kawahara, 2006).

Previous research has indicated that the addition of pictures to a DRM word list paradigm test can reduce the occurrences of false memories. It appears that when word lists are presented in a visual manner versus a verbal manner, the likelihood of falsely recognizing a critical lure word on a recognition or recall test is significantly reduced (Arndt & Reder, 2003; Pierce, Gallo, Weiss & Schacter, 2005). This study attempted to replicate the modality effect and to further ascertain whether a stimulus format effect exists within the visual modality by assessing the differences between three different visual conditions. It was hypothesized that presentation, and subsequent testing, of word lists in a photographic image format would allow participants to reject critical lures at a greater rate than that of simple black and white line drawings. Further, the rate of correctly identified words should increase systematically the more visually realistic the format is.

Conclusion

As indicated from the results of the four different tests, the results of this experiment did not support the hypotheses.

Participants in the photograph group did not incur decreased rates of critical lure recall. Further, the percentage of words correctly identified did not increase from the word only/control group to the photograph group.

Clearly, these results fail to extend the findings of previous research (Nabeta & Kawahara, 2006; Arndt & Reder, 2003; Cleary & Greene, 2002; Beauchamp, 2002) in this particular area of false memories. It is likely that several notable limitations impacted the results of this experiment.

•**Small Group Sizes** – With only 9 participants in a group, it is difficult to achieve significant results.

•**Uncontrolled Age Factors** – Since the participants were of varying ages, it is difficult to determine if age-related declines impacted this experiment.

•**Environmental Distractions** – Environment was not controlled, thus there were different distractions for each participant.

•**Testing Format/Combined Stimulus Formats** – The preferred method of testing and study would have been to use the line drawings and photographs without their written word identifications.

•**Lack of Congruency between Study and Testing Phases** – Recognition tests did not include line drawings and photographs as seen by the participants in the study phase.

Participants & Method

Twenty-seven adults (18 women and 9 men) participated in this experiment. Participants ranged in age from 25 to 68 years old.

Participants were randomly assigned to one of three conditions:

Condition 1 (the control group): Written word only study and testing

Condition 2 (the line drawing group): Presentation and testing with black and white line drawings



Kiwi

Condition 3 (the photograph group): Presentation and testing in a photographic image format



Kiwi

Utilizing a DRM paradigm, participants were presented with four 12-item word lists of semantically-related words that were likely to elicit critical lure word recognition. Participants were then asked to complete free-recall tests for the four different word lists. The words lists, which were originally constructed by Roediger and McDermott (1995), consisted of words relating to the critical lure words of *bread*, *chair*, *fruit* and *mountain*. After the free-recall tests were completed, a 75-word recognition test was given which included all 48 words previously presented, the four critical lure words and 23 unrelated words. Participants were asked to identify which words on the list were previously presented.

Results

Free-Recall Tests

Means of Correctly Identified Words on Free-Recall Tests

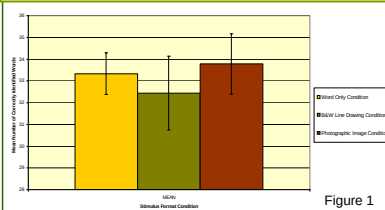


Figure 1

Recognition Tests

Means of Correctly Identified Words on Recognition Test

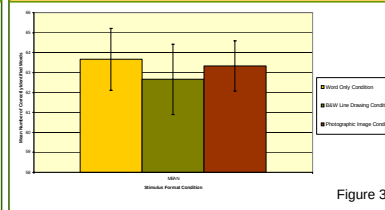


Figure 3

Mean Number of Times Critical Lure is Recalled on Free-Recall Tests

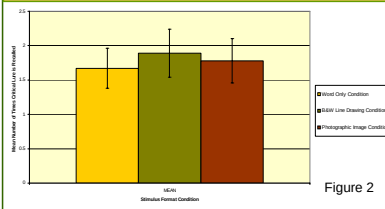


Figure 2

Mean Number of Times Critical Lure is Recalled on Recognition Tests

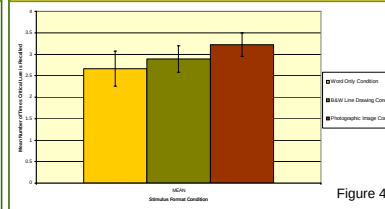


Figure 4

Free-Recall Tests

ANOVA testing on the number of correctly identified words on the free-recall tests revealed no significant differences between Condition 1, the word-only group, Condition 2, the line drawing group, and Condition 3, the photograph group: $F(2, 24) = .25, p = .78$. Condition 1, $M = 33.33, SD = 2.87$, Condition 2, $M = 32.44, SD = 5.10$, Condition 3, $M = 33.78, SD = 4.15$. As indicated in Figure 1, participants in Condition 2 had lower accuracy rates of correctly identified words than that of Condition 1 participants.

The second level of measurement for the free-recall tests consisted of the total number of times the critical lure word is recalled. Results indicated no significant differences between Condition 1, the word-only group, Condition 2, the line drawing group, and Condition 3, the photograph group: $F(2, 24) = .12, p = .89$, Condition 1, $M = 1.67, SD = .87$, Condition 2, $M = 1.89, SD = 1.05$, Condition 3, $M = 1.78, SD = .97$. As indicated in Figure 2, the highest rate of critical lure recall occurs in Condition 2 as opposed to Condition 1.

Recognition Tests

The third level of measurement consisted of the number of correctly identified words on the recognition test. Correctly identified words consisted of the total number words that each participant correctly identified as either "new" or "old". Results indicated no significant differences between Condition 1, the word-only group, Condition 2, the line drawing group, and Condition 3, the photograph group: $F(2, 24) = .11, p = .89$, Condition 1, $M = 63.67, SD = 4.64$, Condition 2, $M = 62.66, SD = 5.27$, Condition 3, $M = 63.33, SD = 3.77$. As indicated in Figure 3, the results revealed that the highest rate of correctly identified words occurred in Condition 1, the word-only group.

The final level of measurement consisted of the total number of times the critical lure word is recalled on the recognition test. Results indicated no significant differences between Condition 1, the word-only group, Condition 2, the line drawing group, and Condition 3, the photograph group: $F(2, 24) = .69, p = .69$, Condition 1, $M = 2.67, SD = 1.22$, Condition 2, $M = 2.89, SD = .93$, Condition 3, $M = 3.22, SD = .83$. As indicated in Figure 4, results reveal an increasing trend of critical lure word recall from the word-only condition to the photograph condition.

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Appendix 4

Psychology exercises

201 Assessment

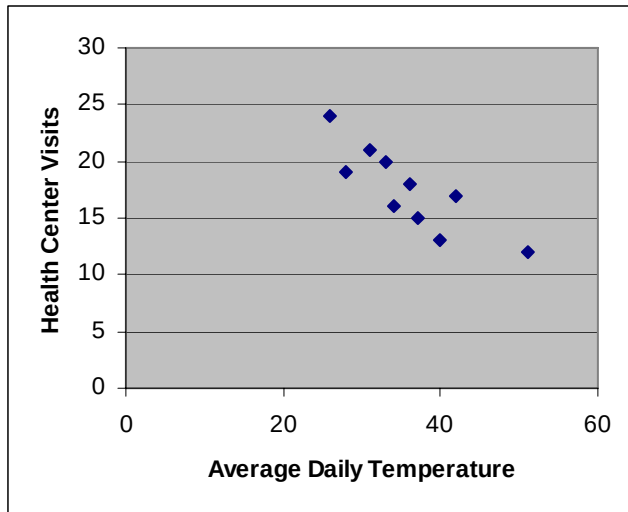
Name _____

1. A researcher at a preschool hypothesizes that children will prefer to do activities after they see an adult model those activities. He plays with a giant jigsaw puzzle on the classroom floor one day while all children are present. On the next day, he observes that 14 out of the 30 children play with the giant jigsaw puzzle. The researcher concludes that his hypothesis about modeling was supported. Why is his conclusion unreasonable?
- Because less than half of the children in the class played with the puzzle.
 - Because we don't know what the children's level of puzzle play was before the researcher modeled the activity
 - Because there is a confound due to the fact that the researcher did not play with the puzzle on the second day.
 - Because the puzzle may have been too difficult for the other children in the class.
-

In a study of the effect of meditation on anxiety and problem-solving performance, Professor Y recruits 50 college student participants. For 25 people selected randomly from that group, she measures their baseline heart rate for 5 minutes (baseline period), then trains them on a meditation procedure for 30 minutes (training period), and then gives them a standard problem-solving test (test period). For the other 25 participants, she measures their baseline heart rate for 5 minutes (baseline period), asks them to wait in a room alone for 30 minutes (training period), and then gives them the standard problem-solving test (test period). For both groups, she measures their heart rate during the test period and also measures their problem-solving performance.

- What is/are the independent variable(s) in this experiment?
 - Heart rate
 - Performance on the problem-solving test
 - Both heart rate and performance on the problem-solving test
 - Meditation training (present or absent)
 - What is/are the dependent variable(s) in this experiment?
 - Heart rate
 - Performance on the problem-solving test
 - Both heart rate and performance on the problem-solving test
 - Meditation training (present or absent)
 - Why did the researcher assess heart rate during the test period of this study?
 - Because participants with abnormal heart rates could be excluded from the sample.
 - Because heart rate is likely to be different during meditation than a waiting period.
 - Because she wanted to ensure that the groups had comparable baseline heart rates.
 - Because heart rate was a measurable response used to indicate anxiety.
 - Why did the researcher include in this study a group that waited alone?
 - Because she wanted to include more participants in the study to increase sample size.
 - Because she wanted to test for memory effects on the problem-solving task.
 - Because she wanted a control group to compare to the meditation condition.
 - Because she wanted to demonstrate that anxiety would decrease over time.
6. A researcher is asked to test a new drug that might help reduce anxiety in patients with clinical anxiety disorders. The researcher gives the drug to 100 patients with diagnosed anxiety disorders. Before and at the end of the two-month drug trial, the researcher gives each participant an assessment of anxiety symptoms. She finds that they report fewer symptoms at the end of the trial period. Can the researcher conclude that the drug is effective in reducing anxiety?
- Yes, because the patients report fewer symptoms following the drug treatment.
 - No, because the improvement might be due to patients' expectations that the drug would help.
 - Yes, because the patients were selected from a high-anxiety group.
 - No, because the researcher did not know what caused these patients' anxiety in the first place.

Researchers at a small northwest university examined the patterns of health center visits for upper respiratory infections over a 10-week period during winter quarter. The data presented in the figure below represent the number of weekly visits as a function of average daily temperatures for the week.



7. Describe the results depicted in the graph:

8. Can the researchers conclude that temperature plays a causal role in developing respiratory infections? Explain.

9. Which of the following correlation coefficients (r) represents the strongest correlation?

- a. 1.50
 - b. 0.5
 - c. 0
 - d. -0.70
-

Consider the following sets of variables, and indicate whether the linear correlation between them is likely to be strong and positive, strong and negative, or weak or zero:

10. The length of your arm, and the length of your leg, measured each year since your birth.

- a. strong, and positive
- b. strong, and negative
- c. weak, or zero

11. Your age, and the world population, measured each year since your birth.

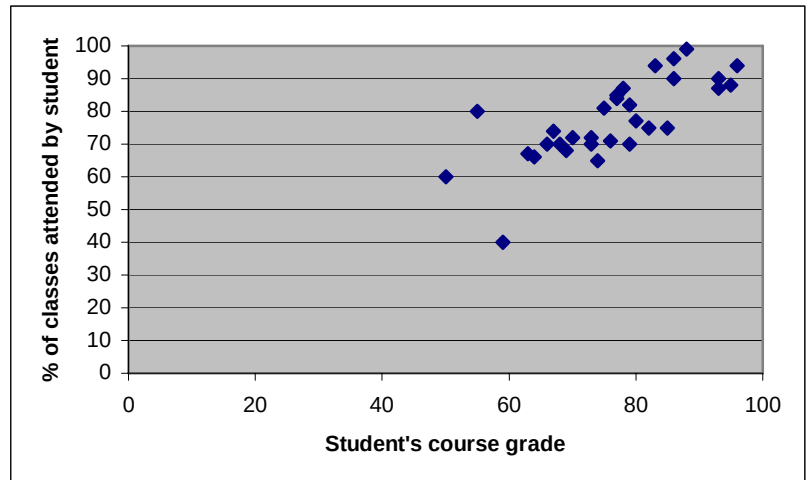
- a. strong, and positive
- b. strong, and negative
- c. weak, or zero

12. Across a group of people, social security numbers, and their heights.

- a. strong, and positive
- b. strong, and negative
- c. weak, or zero

In a study of the relationship between class attendance in college psychology classes and grades in those courses, Professor X collects the following data over one year.

13. Describe the results depicted in the graph:



14. From this study, can we conclude that attending class causes students to obtain higher grades? Explain your answer.

Suppose that you are interested in the effects of different types of music on college students' mood. You recruit 75 participants and tell them that they will be in a study on memory. When the participants come to the waiting area for the study, they have to wait for 15 minutes while they fill out some initial questionnaires. During this waiting period, one-third of the group hears background music from hip-hop, one-third hears selection from the blues, and one third hears selections from classical music. After the waiting period, participants are given a mood checklist that asks them to rate their mood before they begin the memory study. The rating is an overall positive-to-negative mood scale with 7 points, where 1 is a rating of extreme negative mood and 7 is a rating of extreme positive mood. The results indicate that the average score in the hip-hop group is 4.8 (with standard deviation of 1.3), the average score for the blues group is 3.3 (with standard deviation of 1.0), and the average score for the classical group is 5.1 (with standard deviation of 1.6).

15. Present the average results for the three groups in a graph. Be sure to use labels for your graph.

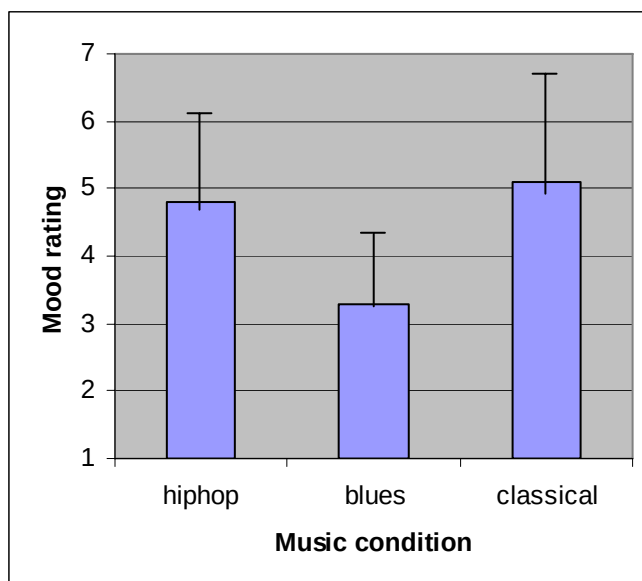
16. What is the independent variable in this study?

17. What is the dependent measure in this study?

18. What are the implications of these findings?

Scoring rubric for Psychology 201 assessment

Question	points	Full credit	Partial credit
1	1	B	
2	1	D	
3	1	C	
4	1	D	
5	1	C	
6	1	B	
7	2	The number of visits to the health center decreased as the average daily temperature increased	1. something true about graph, but not.  2. describes relation between variables and direction of that relationship
8	3	No, because correlation does not mean causation. In this case, some variable other than the weather could account for the change in health center visits	1. "No." +1 2. correlation $\neq$ causation +1 3. elaborated explanation of correlation referring to variables +1
9	1	D	
10	1	A	
11	1	A	
12	1	C	
13	2	Students with higher grades were also those with higher rates of attendance in these classes	Like question # 7
14	3	No, because correlation does not mean causation. In this case, for example, motivated students may choose both to attend class more regularly and to put more effort into assignments and exams; their attendance might not cause the higher grades.	Like question # 8
15	3	See graph below	1. If labels for types of music, mood rating, +1 and numbers for Y-axis 2. If means plotted correctly +1 3. If standard deviations indicated +1
16	1	Type of music	
17	1	Mood ratings	
18	3	There seems to be a difference between listening to the blues and listening to the other two types of music (hip-hop and classical) on mood, because those participants in the blues condition rated their moods as considerably lower (more negative) than those in the other conditions.	1. Music affects mood +1 2. Difference between blues and other types +1 3. Uses variability to explain differences or lack of differences +1
Total	28		



1. Consider the fictional results of a study of depressed people reported in the following table.

Participants	Number studied in each group	Number improved - Placebo group (no treatment)	Number improved - Cognitive therapy group (treatment)
Women	100	60	96
Men	45	15	38

What do these results imply about the effect of cognitive therapy on depression? (4 points)

2. Read this BBC news story and the answer the questions that follow.



Watching TV 'is bad for children'

Children under two should not be allowed to watch any TV, experts say.

Older children should watch no more than two hours a day, the researchers at the Children's Hospital and Regional Medical Centre in Seattle said.

Each hour in front of the TV increased a child's chances of attention deficit disorder by 10%, their research in the *Pediatrics* journal showed.

The study of 1,345 children showed three hours TV a day made children 30% more likely to have the disorder.

Dr Dimitri Christakis at the children's hospital led the study. He said: "The newborn brain develops very rapidly during the first two to three years of life. It's really being wired."

Children who were exposed to the unrealistic levels of stimulation at a young age continued to expect this in later life, leading to difficulty dealing with the slower pace of school and homework, he said.

"TV can cause the developing mind to experience unnatural levels of stimulation," he said.

This was made worse by the rapid image change that television makers used to keep young children interested, Dr Christakis added.

Parents were questioned about their children's viewing habits and asked to rate their behaviour at age seven on a scale similar to that used to diagnose attention deficit disorders.

The youngsters who watched the most television were more likely to rank within the top 10% for concentration problems, impulsiveness, restlessness and being easily confused.

Frederick Zimmerman of the University of Washington in Seattle, another of the authors, said it was impossible to say what a "safe" level of TV viewing would be for children between the ages of one and three.

"Each hour has an additional risk. You might say there's no safe level since there's a small but increased risk with each hour," he said.

"Things are a trade-off. Some parents might want to take that risk. We didn't find a safe level in that sense."

Between three and five per cent of children in the US are diagnosed with attention deficit disorder.

The researchers admitted there could be problems in the study as the parents' views may not be totally accurate.

Also it was not possible to know whether the children already had attention problems early on that attracted them to TV viewing.

Story from BBC NEWS: <http://news.bbc.co.uk/go/pr/fr/-/1/hi/health/3603235.stm>

Published: 2004/04/06 08:56:38 GMT© BBC MMIV

QUESTIONS:

A. Consider the data that were collected in the study described in this story. Was this a correlational study or an experiment? Explain your answer. (2 points)

B. In this story, consider the statement that "Each hour in front of the TV increased a child's chances of attention deficit disorder by 10%, their research in the Pediatrics journal showed." Does this statement imply a causal relationship or a correlation? Explain. (2 points)

C. If you said that the statement in question B, above, described a correlation, change the wording so it describes a causal relationship. If you said it described a causal relationship, change the wording so it only describes a correlation. (2 points)

3. Design an experiment that tests whether there is a causal relationship between alcohol consumption and aggression in adults. Don't worry about whether the experiment is one that could be done in the real world. That is, you can suggest using variables that might, in reality, be difficult to control or manipulate. Your answer should be in essay form, and you should outline your independent and dependent variables, the design of your experiment, and a possible outcome. (6 points)

4. In a study of whether bystanders would help a person in need, participants tested in a group were less likely to help the needy individual than participants tested alone, and the statistical analyses resulted in a test with $p < .05$.

A. What does the probability of $p < .05$ mean here? (1 point)

B. What conclusions should the researchers draw? (1 point)

Scoring rubric for Psychology 202 assessment

Question	points	Full credit	Partial credit
1	2	Cognitive therapy is better than placebo, and this is more true for men than for women* (*if they comment that numbers don't add up, they're right!)	Cognitive therapy is better than placebo - 1 point +1 if they say numbers don't add up but maximum score is 2
2A	2	Correlational because there was no manipulation of watching TV - it was simply measured	Correlational - 1 point
2B	2	The sentence as written implies a causal relationship - that TV viewing caused an increased risk of ADD	Causal - 1 point
2C	2	Something like "watching TV three hours/day was associated with increased ADD"	
3A	1	There is a 5% chance that the same result would occur by chance, with no effect of the I.V. - it is statistically significant	
3B	1	It is likely that being in a group reduces the likelihood of helping someone in need.	
4	6	Correct description of IV (alcohol) +1 point More parametric manipulation of IV +1 point Correct description of DV (aggression) + 1 point More quantitative description of DV + 1 point Counterbalance gender + 1 point Possible outcome + 1 point	

Appendix 5

Psychology 202 Survey 2004

Name: (scantron)

Student ID. #: (scantron)

The psychology department is collecting some information about the interests and plans of students who are enrolled in our courses. Please help us by answering the following. The answers you give on this survey will not be shared with your professor this term. If we use data from your classes in a report, your individual responses will not be identified by your name.

On the scantron form, fill in the letter that best fits your answer to each numbered question.

1. Year in School:

- a) Freshman b) Sophomore c) Junior d) Senior e) Other

2. Sex:

- a) Male b) Female

3. Are you a transfer student?

If yes, please write how many years you have been a student at EOU on back of scantron.

- a) Yes b) No

4. Is this your first psychology course at Eastern Oregon University?

- a) Yes b) No

5. Is this your first college-level psychology course?

- a) Yes b) No

6. Which option best describes your reason for taking this course:

- a) Necessary for major or minor
b) Counts for general education credit
c) General interest in the topic
d) Instructor reputation
e) Other (please explain on back of scantron)

7. At this point, how likely are you to enroll in additional future psychology courses at EOU?

- a) Not likely b) A little c) Somewhat d) A lot e) Very likely

8. How likely are you to choose to major in psychology?

If not psychology, please write intended major or undecided on back of scantron.

- a) Not likely b) A little c) Somewhat d) A lot e) Very likely

9. How likely are you to pursue a minor in psychology?

- a) Not likely b) A little c) Somewhat d) A lot e) Very likely

10. How likely is the study of psychology to be relevant to your career goals?

- a) Not likely b) A little c) Somewhat d) A lot e) Very likely

11. At this point, rate your interest in the study of psychology in general (not this specific course):

- a) Not interested b) A little c) Somewhat d) A lot e) Very interested

On the scantron form, fill in the letter that best fits your answer to each numbered question.

Section 1:

1. At this point, how likely are you to enroll in additional future psychology courses at EOU? a) Not likely b) A little c) Somewhat d) A lot e) Very likely
2. How likely are you to choose to major in psychology? a) Not likely b) A little c) Somewhat d) A lot e) Very likely
3. How likely are you to pursue a minor in psychology? a) Not likely b) A little c) Somewhat d) A lot e) Very likely
4. How likely is the study of psychology to be relevant to your career goals? a) Not likely b) A little c) Somewhat d) A lot e) Very likely
5. At this point, rate your interest in the study of psychology in general (not this specific course): a) Not interested b) A little c) Somewhat d) A lot e) Very interested

Section 2: How much did each of the following aspects of the class help your learning?

6. The way in which the material was approached a) No help b) A little c) Moderate d) Much e) Very much help
7. How the class activities, reading, and assignments fit together a) No help b) A little c) Moderate d) Much e) Very much help
8. Other reading materials a) No help b) A little c) Moderate d) Much e) Very much help
9. Class activities for each week a) No help b) A little c) Moderate d) Much e) Very much help
10. How parts of the classwork, reading, or assignments related to each other a) No help b) A little c) Moderate d) Much e) Very much help
11. The quality of contact with the teachers a) No help b) A little c) Moderate d) Much e) Very much help

Section 3: As a result of your work in this class, how well do you think that you now understand each of the following?

12. Concepts related to experimental designs a) Not at all b) A little c) Somewhat d) A lot e) A great deal
13. Concepts related to basic statistics (mean, median, mode) a) Not at all b) A little c) Somewhat d) A lot e) A great deal
14. An understanding of the steps related to conducting a research investigation in psychology a) Not at all b) A little c) Somewhat d) A lot e) A great deal

Section 4: How much has this class added to your skills in each of the following?

15. Solving problems a) Not at all b) A little c) Somewhat d) A lot e) A great deal
16. Designing lab experiments a) Not at all b) A little c) Somewhat d) A lot e) A great deal
17. Finding trends in data a) Not at all b) A little c) Somewhat d) A lot e) A great deal
18. Critically reviewing articles a) Not at all b) A little c) Somewhat d) A lot e) A great deal

Section 5: To what extent did you make gains in any of the following as a result of what you did in this class?

19. Understanding the main concepts in psychology a) Not at all b) A little c) Somewhat d) A lot e) A great deal
20. Understanding the relevance of psychology to real world issues a) Not at all b) A little c) Somewhat d) A lot e) A great deal
21. Ability to think through a problem or argument a) Not at all b) A little c) Somewhat d) A lot e) A great deal
22. Enthusiasm for psychology a) Not at all b) A little c) Somewhat d) A lot e) A great deal

Appendix 6

Example 1: Student article review from early in the term

Article review #1- Robert Wurpes

PSY201 F'07

Original article

Abuse in childhood linked to adults' migraines: UT researcher also finds connection to depression

The Blade, Toledo, Ohio - September 17, 2007

Sep. 17--A history of child abuse may help lay down the tracks for later migraine and depression. Two recent studies led by Dr. Gretchen Tietjen, a neurologist at the former Medical College of Ohio, uncover a connection between childhood abuse and adults who suffer migraine with depression. The research arose from what Dr. Tietjen noticed in her care of migraine patients at the University of Toledo Health Science campus. "Many of these people report having been in abusive relationships. They were abused children, or came from unstable homes, or some are currently in an abusive relationship," she said. Her research suggests that childhood abuse "primes the brain for pain" in migraine. This could mark a genetic vulnerability where abuse triggers migraine with depression among people with a particular versions of genes. Studies have shown that some genes make people more susceptible to depression in the wake of childhood trauma, she said. Her recent study published in the journal *Neurology*, reported that women with migraine and major depression were twice as likely to report childhood abuse as migraineurs without depression. The study reviewed the survey responses of 949 patients in six headache clinics around the country, including one at the University of Toledo. If the abuse continued after age 12, the risk of migraine and depression was five times greater. "So many people are affected by not just migraine, but by a number of other conditions that really seem to complicate the treatment," Dr. Tietjen said. A study she co-authored, published earlier this year, showed a strong link between people with disabling migraine, depression, and the presence of back pain, nausea, and stomach pain. The current *Neurology* paper goes on to show that depressed people with migraine were also twice as likely to say they witnessed abusive behavior and/or substance abuse in their home when they were growing up. "This may be the first paper that shows the incidence of abuse in chronic migraine," said Dawn C. Buse, Director of Psychology at the Montefiore Headache Center, part of the hospital for the Albert Einstein College of Medicine in New York. It aligns with other research showing a link between abuse and pain disorders, she said. Dr. Peter Goadsby, of the University of California, San Francisco, said headache and depression "share a biochemistry," which is why they tend to come up together. "In context with this biological association, it's not entirely surprising" to see the link between both and child abuse. "I think it's a useful observation." Not all migraine sufferers had the same constellation of symptoms, or the same complications. Another recent study by Dr. Tietjen, published in the journal *Headache*, showed migraineurs tended to fall into three general categories. Researchers reviewed the medical charts of 223 migraine patients, uncovering that about a quarter of the patients also suffered from high blood pressure, high cholesterol, diabetes, or underactive thyroid. These patients tended to be older, with an average age of 55. There were also more males, 22 percent, in this group. Some 38 percent of the patients, about 85 patients, had no other medical or emotional complications. This group had an average age of 32, its first headache at an average age of 18, and was 12 percent male. About 37 percent of the patients -- some 83 people -- were characterized by a higher incidence of depression, anxiety, and fibromyalgia. This group was predominantly female -- only 5 percent were male -- had the lowest quality of life of all the migraine sufferers, and were about 2.5 times more likely to report past physical or sexual abuse, and 4 times more likely to report past emotional abuse than other migraine sufferers. Dr. Tietjen notes that there is a great deal of research to show that people with migraine often must cope with depression. Some 10 percent of the population suffers from migraine, and about 4 percent of the U.S population reports migraine 15 times

a month or more. Just as not everyone with migraine has a history of abuse, not everyone with a history of abuse suffers from migraine with depression. Dr. Tietjen says. The difference may be genetic. "Certain people that have a certain genetic makeup are sort of susceptible to developing migraine and depression if they have life trauma. I think that the earlier in life the abuse occurs, the more likely it is going to have an impact," she said. In fact, she says, brain imaging studies have shown that abuse causes long-term changes in brain structures. Her research group is looking at genes that might be active in the abuse/migraine/depression pathway. At the moment, they are looking at two genes, including one involved in the brain neurotransmitter serotonin, known as 5-HTT. A study in the journal Science in 2003 showed that stressful experiences led to depression in people with one version of a serotonin transporter gene. The brain chemical serotonin is associated with mood. Dr. Tietjen hopes to find funding to look at five or six different genes. Ms. Buse said research on migraine and depression and patient life history can guide doctors who treat migraine patients to attend to "how the disease is effecting the patients life, not just how is your medicine working, but how is your quality of life, asking about ...work, family, mood. These are the things we want clinicians to think about that should inform treatment." Dr. Tietjen, has published more than 20 research papers on migraine since 1991. Seven of those papers came out this year.

Student report:

Migraine headaches are an affliction that causes dreadful pain and disruption to many. No specific cause or cure has been discovered. Dr. Gretchen Tietjen is a neurologist who has published more than 20 research paper on migraines. She has recently conducted two studies related to migraines when she noticed similar stories from her migraine patients who also suffered from depression. Many of the patients suffering from the combined afflictions reported they had unstable, abusive childhoods and some also reported currently being in abusive relationships. According to Dr. Tietjen many, but not all, of those who suffer migraines must also deal with depression. Her study was published in the Journal of Neurology. Approximately 10% of our population suffers from Migraine headaches.

Dr. Teitjen has done descriptive, correlational and biological research on the subject of migraines. Part of her study was done by a survey of 949 migraine sufferers across the country. The survey showed a positive correlation in several areas. Patients who suffered migraines and major depression reported twice the amount of childhood abuse as did the sufferers who did not report depression. Those who reported abuse after the age of 12 were five times more likely to have the migraine/depression combination than those that did not. The patients with the combined afflictions also reported a twofold increase in reports of witnessing abuse and or substance abuse as a child. The biological research component of her studies indicates a genetic relationship between abuse and migraine with depression for some people. Part of this research includes a previous study of MRI's which show abuse leading to changes in the brain. She continues researching a genetic relationship between abuse, migraines, and depression. Part of her current work is examining serotonin. A previous study she is incorporating into her current work showed one kind of serotonin carrier gene was related to depression stemming from stressful experiences. Dr. Teitjen hopes to find more funding to expand this research.

Descriptive research was done in the form of case studies. Reviews were done on 223 migraine patient's medical reports and found 3 generalized symptom groups. Group one was about 25% of the study. These patients showed symptoms of metabolic syndrome. The average patient age was 55 showing to have a higher male population. Group two had 85 patients which showed no adverse health conditions, averaged to be 32 years old and the average reported age

of the first headache was 18. The third group was 95% female and had the most debilitating symptoms including more reports of depression. This group was also twice as likely to report past physical and emotional abuse. A higher rate of emotional abuse was evident. Professional review of the study indicates the results are not surprising as headaches and depression share biochemistry.

This research may help physicians treat their patients better, by not only focusing on the headache symptoms, but also looking for depression and cause. To solidify the concept more research must be done to show that migraines are not merely an unrelated third factor. Early abuse in life could lead to depression to which a certain percentage of this depressed population is susceptible to.

Professor's evaluation:

As long as you try to follow the prescribed format set out on BlackBoard, you earn 10/10 on the first article review. However, there are several problems with this review. First, you are not summarizing one study in this review; you are actually writing about several different studies. The assignment is to summarize a research study, identify its research method, and to provide at least five limitations of the research methodology used in that particular study. While there are several studies presented in the article, you need to just present one in detail. Then the method of that particular study should be indicated as being either a descriptive/correlational study or an experimental study, and this choice should be explained by referring to the variables used in the particular study. Finally, five distinct limitations of the research method itself should be presented. If you would like to rewrite this assignment to the standards put forth on Blackboard and resubmit it, I will regrade it; otherwise, your score will be the following:

Appropriate article: 1/1 pt; it is reporting a research study that relates to the current unit of study.

Summary: 1/2 pts; you summarized several studies, not just one in detail.

Identify research method: 0/2 pts; you don't clearly identify the method of a specific study as either descriptive/correlational or experimental, and you have not provided an explanation for why you identified the method as you did that refers to the variables of the study. You do provide several methods, but you don't link them to a specific study, and you don't say that the researcher is measuring existing relationships between the specific variables of the study (descriptive/correlational)

Provide and apply five limitations of research methodology: 0/5 pts; I don't see any limitations of the research methodology.

Total pts on assignment: 2/10

Example 2: Student article review from late in the term

Robert Wurpes, PSY201, Article review #5 PSY201 F'07

Original article:

HEALTH BEAT: RISKY BEHAVIOR

Hip-hop, teen sexuality under the microscope

By Tara Parker-Pope New York Times News Service November 27, 2007

Hip-hop, with its suggestive lyrics, videos and dance moves, has long been criticized by public health experts and parents, who fear that it leads to risky sexual behavior among teenagers. But it has never been clear whether there is something uniquely insidious about hip-hop or whether the problem is simply that most people over 40 just don't understand it. After all, nearly every generation seems troubled by the musical preferences of the next. Elvis' gyrating hips were once viewed as a corrupting influence on the nation's youth. To solve that riddle, public health researchers are deconstructing hip-hop culture, venturing onto clubs' dance floors and dissecting rap lyrics. The hope is that by understanding hip-hop, experts can design more effective health messages -- and maybe even give parents insight into the often confounding music embraced by their children. "There's definitely a popular opinion that hip-hop is music that is bad for you and makes people do crazy things," said Miguel A. Munoz-Laboy, an assistant professor in the department of sociomedical sciences at Columbia. "We need to try to see how youth understand their own culture without imposing our own adult judgments." Munoz-Laboy spent three years studying the hip-hop club scene, talking to dozens of teenagers and watching them dance. While hip-hop music has been widely assailed as misogynistic, the researchers found that young women were the "gatekeepers" of boundaries on the dance floor, according to research published this month in the journal *Culture, Health and Sexuality*. Even during the highly sexualized form of dance known as grinding, in which bodies rub against each other, the girls in the study "were consistently vigilant about maintaining control over their bodies and space," the study noted. Most of the teenagers in the study were sexually experienced. But the researchers found that the overt sexuality of the music and dancing was not the main influence on sexual behavior. Rather it was the old standbys of alcohol, drugs and peer pressure that typically led them into sexual encounters. The lesson for public health workers is that hip-hop is not just music but a support system and social structure that dominates youth culture, Munoz-Laboy said. The language of hip-hop also may in fact be a more effective way to communicate with teenagers. One HIV prevention ad that resonated with women, for instance, mirrored the sexualized lyrics of hip-hop, telling girls, "Don't take it lying down." Questions remain about whether hip-hop's explicit lyrics encourage early sex. Last year, the journal *Pediatrics* published research from the RAND Corp. concluding that degrading lyrics, not sexual lyrics, were the problem.

The researchers interviewed more than 1,400 teenagers over two years, asking them about the music they listened to along with factors such as peer pressure and parental supervision. They found that adolescents who were exposed to the highest levels of sexually degrading lyrics were twice as likely to have had sex by the end of the study. The researchers defined degrading lyrics as those that portrayed women as sexual objects, men as insatiable and sex as inconsequential. It may be that teenagers who are most interested in initiating sexual activity gravitate toward songs with edgier lyrics. The research suggests parents should focus less on whether their children listen to hip-hop and pay more attention to the content.

Student report:

Many of us have personally experienced how music can make us feel motivated, sad, angry, or how it can relax us. But can certain kinds of music or lyrics lead to promiscuity or increased sexual behavior in teenagers? Miguel A. Munoz-Laboy an assistant professor at Columbia and the RAND corp. performed studies on this very subject. They focused on hip hop

music and teenagers. The subjects in the studies were observed in a night club or participated in an interview. The number of observed teens is not mentioned but 1,400 teens participated in the survey. Researchers in the observational portions of the study found the females to be in control of the boundary setting in sensual dancing referred to as “grinding”. They also found that the music had much less to do with the increase in sexual encounters than did the effects of alcohol, peer pressure, and drugs. The RAND survey found that sexually demeaning lyrics had the greater influence on whether teenagers had sex during the study. Surveying and observational type studies, such as this one, fall into the **descriptive research category**. The study mentions its use of surveys and Mr. Munoz-Laboy did observational studies at night clubs.

First and foremost, 1. a problem exists as there is no explanation to cause and effect of this issue. Upon examining the two portions of the research this issue becomes evident as Mr. Munoz-Laboy’s research concludes much of the sexual behavior seemed to stem from alcohol, peer pressure, and drugs and the survey showed evidence of the degrading lyrics being a problem. The drugs, alcohol, peer pressure, hip hop music, and lyrics are all different variables that can all have an effect on the outcome of the study. Surveys can be influenced by several factors. First, 2. there is no way to determine if the answers provided by the teenagers are truthful. They could potentially answer sexual questions in a certain manner trying to be cool or funny. Secondly, 3. one must ask whether the questions required a narrow range of answers. If a questions asked, “did you feel the effects of the alcohol?” and only gave a yes or no option, this could influence the outcome as “feeling the effects” can range from feeling giggly to stumbling and dizzy. Lastly, 4. it is important to examine how the survey sample group was chosen. Did it have a random sample of rural/urban/suburban populations? The survey did question aspects such as parental supervision and peer pressure. Several other factors such as grade point average, alcohol consumption, and having a driver’s license could be factors. During the observational study at the night clubs, 5. subject reactivity could have been a potential problem. If the females who were noted to guard their body while grinding knew they were being observed, they may have been even more guarded.

Professor’s comments:

Appropriate article: 1/1 pt

Summary: 2/2 pts

Correctly identify research method and defend your choice: 1/2 pts – no defense referring to the variables

Provide and apply five limitations of the research methodology: 5/5 pts

Total pts on assignment: 9/10