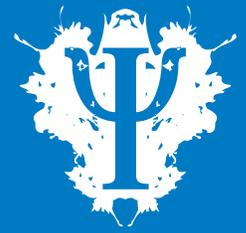
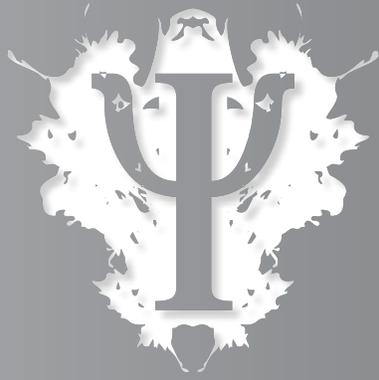


# Psychology Student Research Journal



*The Relationship Between Perfectionism, Anxiety, and Academic Procrastination in College Students* ■  
*Ex-offenders in the Workplace: Employee Reactions* ■ *Ten Impressive Psychological Studies from 2011*  
■ *Is Drug Use the Key to Creativity? A Look at Psychotropic, Legal, and Illegal Drugs* ■ *Cholinergic Modulation of  
Reinforcement Effects in a Reinstatement Model of Drug Relapse and Sucrose Reward* ■ *The Facebook Motivation  
Likert Scale* ■ *Understanding the Association of Nonverbal Cues and Environmental Factors with Patient Retention  
in Mental Healthcare* ■ *Top 10 Unethical Psychological Experiments* ■ *Creative Achievement and Regulation  
of Motivation for Creative Behaviors* ■ *Childhood Abuse History as a Predictor of Intimate Partner Violence*



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## Editorial Board

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## From the Editorial Board

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It is with great pride that the members of the Editorial Board introduce the second edition of the Psychology Student Research Journal (PSRJ) at California State University, San Bernardino. In this volume, we present the research of eight psychology students at CSUSB, an interview with a Professor Emeritus, the reviews of three books, and two pages dedicated to interesting aspects of psychology. As we continue to grow, we hope to continue to include useful information for our readers and showcase the abilities and successes of psychology students at our university. We believe that research involvement needs to be encouraged among our students for the enhancement of their education and the betterment of society. One of our ongoing goals at PSRJ is to highlight the importance and excitement of studying psychology. A second goal of the journal is to support the exemplary research of our remarkable students, whose work deserves to be shared. PSRJ provides an outlet for students who wish to enter graduate programs, pursue research-based careers in psychology, showcase their research, and prepare for the publication process. We hope you appreciate the value of our journal and support our on-going efforts to present student research in future volumes!

If you wish to obtain a copy of this volume, are enthusiastic about joining the staff at PSRJ, want to submit a manuscript for review (i.e., potential publication), or wish to obtain alternate formats of the information in this publication, please e-mail us at [psrjcsusb@gmail.com](mailto:psrjcsusb@gmail.com). We will send you the required documents. For more information about our organization, go to [OrgSync.com](http://OrgSync.com), the CSUSB Psychology Department website, and look for us on [Facebook.com](http://Facebook.com)!

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## Letter from the Founding Editor

The PSRJ was created on the basis of a simple idea: to expose the campus community to the research endeavors of students from within the psychology department. The individuals who formed the first PSRJ committee found it imperative that the hard work of student researchers within the department be given due recognition. The committee's desire to acknowledge and showcase student research led to the publication of the first student research journal in the history of the department.

Since the founding of the PSRJ one and a half years ago, we have exceeded our vision of representing CSUSB's psychology students' research and academic achievements, having distributed over 150 copies of the journal among students, faculty, and administration. PSRJ has achieved the goal of becoming a medium by which the hard work and dedication of our fellow students can be displayed to the rest of the CSUSB community. This success was made possible through the hard work of our committee members and continued support from within and outside of the department.

I extend my most sincere gratitude to all those who encouraged us through their continued support for and belief in the PSRJ and its cause; the comments from students, faculty and administration have motivated us to work assiduously to produce this second edition.

**Seyed Hadi Hosseini Yassin**

*Founding Editor, Psychology Student Research Journal*

*About the Editor – Hadi Hosseini Yassin is a second year graduate student in the Child Development Psychology program. He is working with Dr. Laura Kamptner on the Maternal Intervention Project (MIP), providing maternal training to incarcerated mothers. He is also working in the CUIDAR program, working with young children in their intellectual development, also under the supervision of Dr. Laura Kamptner. He is interested in family-child relationships; more specifically, parent-child attachment and children's outcomes. His future academic goal is to obtain a Ph.D. in Clinical Psychology and ultimately do research and have a clinical practice.*



## Letter from the Journal President

This last year, I have been honored to serve as the President of the Psychology Student Research Journal (PSRJ). As a committee, we have grown tremendously by participating in the various activities inherent to the operation of an organization with the sole purpose of producing a journal. The committee has collectively expanded its publication knowledge and demonstrated strong interpersonal skills through working together to achieve this goal. Not only have we achieved this goal again this year; I feel that we have refined this process to produce a better quality product.

Throughout the course of the last year, the PSRJ committee has worked diligently to improve the quality and process of the journal so that the great research interests and academic achievements of our students can be showcased in this edition. As a committee, we have made great advances beyond our last edition; we have independently raised funds through various methods, and have improved our review process to more accurately reflect the practice of a professional publication. Through these undertakings, the students who hold positions on the committee, the reviewers of the featured articles, and the authors of the articles have all advanced their familiarity with the processes of publishing. Ultimately, the advancement of publication knowledge will benefit the students who wish to perform research in their professional careers, and promotes the significant contributions that psychology students here at California State University, San Bernardino have achieved in the last year. Needless to say, we are accomplishing the goals that were conceptualized at the start of this project, and will continue to refine our process in order to continually achieve these goals. In doing so, we hope to inspire and encourage all scholarly and research-oriented endeavors here at CSUSB

I would be amiss if I did not thank many of the great contributors to this project. This year's edition is the product of many hours spent reading, reviewing, editing, and collaborating by the dedicated members of the PSRJ, as well as faculty members from the Psychology department. I commend these efforts on the part of the committee and thank the faculty members who helped us with their guidance, reviews, and generous contributions. I would also like to thank the Psychology department, which has funded a great portion of this project and provided a platform to make the vision of a psychology research journal come to fruition. I would like to thank the excellent students who submitted to our publication. These students promote excellence through their devotion to research and provide a model for other research-bound students to follow. Without these individuals and their submissions, our research journal would not exist. Finally, I would like to thank our readers, for whom we have created this edition. From faculty and students to researchers and academics, we hope that this edition serves to promote psychological research, which has the ability to enhance the lives of each and every member of our society.

**Ryan Lee Radmall**

*President, Psychology Student Research Journal*

*About the President – Ryan is a first year graduate student in the Industrial/Organizational Psychology program. He intends to complete his Master's of Science in I/O Psychology and then pursue a Ph.D. in a related field. He has worked with Dr. Janelle Gilbert on various organizational projects regarding "flow" and extracurricular clubs, Dr. Michael Lewin on Early Maladaptive Schemas and aggression, and Dr. Janine Kremling on student resistance to learning and metacognition. His future goal is to apply quantitative psychology in a work environment as an independent consultant.*



## Words of Wisdom from a Professor Emeritus: A Brief Biography and Interview with Dr. Charles Hoffman



### **Number of years as a professor:**

44 years, including 12 years as the chair of the Psychology Department

### **Primary Research Interests:**

Family psychology, parenting and family relations, socialization processes, and research methods in developmental psychology

### **Noteworthy Recognitions:**

*Psychology Department Chair (three consecutive terms), 1984-1996*  
*Former Head of the Institute for Child Development and Family Relations*  
*Fellow, Western Psychological Association*  
*Over 35 professional publications*

**What does “Professor Emeritus” mean, and when did you receive this title?** Emeritus means you walk around in your bathrobe and your slippers in the hallways dropping your papers and mumbling to yourself [chuckles]. No, but really, it means “with merit.” It’s like an honorary title that they give you after you have been a professor for many years. You are given the honor of Professor Emeritus after you

retire. Once you are a Professor Emeritus, you always have this title. I was given the title in 2008.

**Where did you start teaching, and how did you end up at CSUSB?** The first class I taught was in 1968. After I finished my course work, I taught where I was going to school (Adelphi University), the equivalent of full-time. I taught whatever they gave me. Then I



got a full-time job at a community college for three years, and then I came here. I was a tenure track faculty member at the community college, and then I came here in 1974 (38 years ago) on the tenure track, as well.

**What have you researched, specifically?** I used to do divorce; the effects of divorce on kids, other parent involvement, and stuff like that with divorce. About ten years ago, Dwight Sweeney, who runs the center [UCDD], wanted to do research because we had the center for disabilities and families right here on campus. I was jaded with the divorce stuff enough, so I said "I don't know much about children with Autism," and he said, "I do," so I set up the family research, and it was a nice transition for me, because it came soon after I stopped being the Chair of the Psychology Department. It was a good way to get back into the literature with a new kind of feel. We look at the problems that the individuals have, the effects on their parents, and all sorts of research related to developmental disabilities.

**Are you still going to be involved in research and teaching after you leave?** I don't want to be involved with research anymore. I will stay involved with people and their writing, like students that I still know, but research is something that I am putting behind me. I don't want to teach anymore, either. My son says, "Dad, you can move up here and teach at Sonoma State," but I don't want to go teach a class. The honors class is the only thing I want to teach, or my research group.

**How many honors classes have you taught?** All in all, I have taught the class for about 20 years. I even used to teach the honors class when I was Department chair; I made the class meet at 8am so that I could keep up with my work as chair [chuckles].

**What advice can you offer students who intend to pursue an advanced degree in psychology?** Take the honors class, get As, do research, and kick butt on the GRE's. Also, work with a mentor. I would say that

20-25% of the Honors class goes on to get a Ph.D. eventually, but I need to collect the data on this.

**For the benefit of psychology students seeking future employment in academia, what is the hardest part about being a professor?** Getting the job! The job market, now, is very bad, but it's a great job; you study stuff you are interested in, and get to work with young and intelligent people.

**What would you like to read in our journal?** I think you should keep publishing general studies that students have done. The thing that distinguishes students in our department is that we have the advanced labs. I think more students should have the experimental background of the lab. We also have the honors program, which creates opportunities for students to continue on to graduate school. I think these are good things and they increase student involvement. We need to get more students involved. I think it is a great thing that students participate in extracurricular activities like the journal (PSRJ) and Psychology Club. I used to tell honors students that they have to work in the Peer Advising Center (PAC); this is another way students can get involved. Students have to do things like this to get on their resume and show involvement, because these are the people who are going to go on to Ph.Ds.

**What are you going to miss the most about working at CSUSB?** Working with young people. That is probably what I am going to miss the most. There is an energy to young people that I am going to miss. Young people are thinking about their future, about how they are going to do well, about getting serious about school; they are in a wonderful part of their lives. The honors class has been a joy for these reasons. Everyone is just getting ready and figuring out what they are going to do, and they are motivated students who want to go on. How could you not like that? I think teaching is as good as it gets, unless you were an awesome ball player and got paid to play ball. Then that would be about the same.

*After more than four decades of accomplishments as both a professor and chair of the Psychology Department at CSUSB, Dr. Charles Hoffman will permanently retire from CSUSB at the end of the 2012-2013 school year. Many students and members of the Psychology Department will be forever grateful to Dr. Hoffman for his special interest in academic excellence and the success of students here at CSUSB. The PSRJ team thanks him for his many contributions to the department, including this interview, and wishes him the best in his future endeavors.*



# The Relationship Between Perfectionism, Anxiety, and Academic Procrastination in College Students

## Authors

**Henry K. Chang**

*California State University, San Bernardino*

## Acknowledgement

I would like to thank Dr. Michael Lewin for his inexhaustible patience and wisdom and for helping me find the means to reacquire the reins from my own unrelenting standards.

## Abstract

Academic procrastination is a ubiquitous student problem associated with poor academic performance and negative health related outcomes. The current study examined the role of perfectionism and trait anxiety in the prediction of academic procrastination. A sample of 353 social science undergraduate students (83% female, 17% male) completed online questionnaires measuring multiple dimensions of perfectionism, trait anxiety, and academic procrastination. Results revealed that when components of perfectionism were analyzed in terms of "adaptive" versus "maladaptive" categories, their relationship with procrastination was different as a function of trait anxiety. Specifically, trait anxiety moderated the relationship between adaptive perfectionism and academic procrastination and mediated the relationship between maladaptive perfectionism and academic procrastination. Results suggest an indirect path of maladaptive evaluative/extrinsic forms of perfectionism through trait anxiety to academic procrastination and a more direct path between adaptive intrinsic forms of perfectionism and academic procrastination affected by level of trait anxiety. Results are discussed in terms of educational and counseling implications for college students. Limitations and future research directions are also presented.



## Author Interview

Henry Chang

**What are you majoring in?** I am in the Clinical/Counseling Psychology Master's of Science program.

**What year are you in school?** I'm a 1st year graduate student.

**Which professors (if any) have helped you in your research?** Dr. Michael R. Lewin.

**What are your research interests?** I am interested in anxiety, depression, aggression, schemas, procrastination, perfectionism.

**What are your plans after earning your degree?** To attain an LPC and/or work in County Mental Health to cultivate experience with diverse populations.

**What is your ultimate career goal?** After gaining experience in the mental health field, my goal is to open a private practice.

*Psychology Student Research Journal gives special recognition to*

**Henry Chang**

*winner of the*

CSUSB College of Social and Behavioral Sciences

2011-2012

Dean's Honors Paper Award



## **The Relationship Between Perfectionism, Anxiety, and Academic Procrastination in College Students**

Academic procrastination has been defined as the voluntary postponement of scholastic responsibilities (e.g. writing papers, studying for exams) to ward off the experience of emotional discomfort (Solomon & Rothblum, 1984). Prevalence estimates of procrastination in U.S. college students range from 70% (Klassen, Krawchuk, & Rajani, 2007) to 95% (Ellis & Knaus, 1977). According to Gallagher, Golin, and Kelleher (1992), 52% of their subjects identified procrastination as a moderate to severe problem for which they required assistance. Moreover, academic procrastination appears to increase in prevalence from freshman to senior year and from undergraduate to graduate students (Onwuegbuzie, 2000). In addition to emotional discomfort, studies have shown academic procrastination negatively affects student performance and attrition (Semb, Glick, & Spencer, 1979).

The relationship between perfectionism and academic procrastination is of particular interest in the current study. The grammatical dictum "Either you are perfect or you are not" emphasizes the dichotomous nature of perfection. Hamachek (1978) viewed perfectionism as consisting of "normal" and "neurotic" types. According to Hamachek, "neurotic perfectionists" were driven by a fear of failure, while "normal perfectionists" were high-achievers driven by accomplishment. In general, perfectionism is characterized by the adoption of excessively-high standards accompanied by concern over mistakes (Frost, Marten, Lahart, & Rosenblate, 1990). Although this definition emphasizes the neurotic aspects of perfectionism, it is also conceivable that "high standards" and "meticulousness" may enhance adaptive outcomes. Therefore, it is especially important to clarify the conditions in which perfectionism is adaptive or maladaptive in terms of performance outcomes (i.e., academic procrastination).

Decades after Hamachek, researchers continue to debate whether the trait of perfectionism is essentially maladaptive (Hewitt & Flett, 1991b) or both adaptive and maladaptive (Frost et al., 1990). An area of particular interest is whether perfectionism is adaptive or maladaptive in relation to academic functioning. Since perfectionism has been associated with procrastination, it is especially important to examine whether dilatory behavior in perfectionistic students negatively impacts performance.

In the 1990s, owing to the conceptualization of perfectionism as a multidimensional construct rather

than a unidimensional one, researchers achieved greater clarity in the adaptive-maladaptive dialectic. During this time, two dominant scales (both called the Multidimensional Perfectionism Scale) were authored by two separate research teams (Frost et al., 1990; Hewitt & Flett, 1991b); each approached the construct of perfectionism differently. Hewitt and Flett's Multidimensional Perfectionism Scale (HMPS, 1991b) conceptualized perfectionism as an exclusively maladaptive trait organized into three types. On the other hand, Frost et al.'s Multidimensional Perfectionism Scale (FMPS, 1990) conceptualized perfectionism as having six component parts. Frost et al. believed some components of perfectionism were adaptive and other components were maladaptive.

### ***Hewitt and Flett's Multidimensional Perfectionism Scale (HMPS, 1991b)***

Hewitt and Flett (1991a) conceptualized perfectionism on the basis of interpersonal types: self-oriented perfectionism, socially-prescribed perfectionism, and other-oriented perfectionism. Hewitt and Flett assert that all perfectionism increases one's risk for psychopathology and that each type of perfectionism was correlated with its own set of pathological symptoms. Hewitt and Flett's scale conveniently categorized the construct of perfectionism based on the loci of perfectionistic evaluation.

**Self-oriented perfectionism (SOP)** refers to the self-directed belief that one must achieve flawless performance while vigilantly avoiding mistakes. SOP was associated with depression, anxiety, and hostility (Hewitt & Flett, 1991b). Hewitt and Flett propose that the incongruity between intended performance and actual performance may lead to low self-esteem and depression. With regard to academic procrastination, some studies found that SOP is unrelated to academic procrastination (Flett, Blankstein, & Koledin, 1992; Onwuegbuzie, 2000; Saddler & Sacks, 1993), while other studies found a negative relationship (Frost et al., 1990; Saddler & Buley, 1999).

**Socially-prescribed perfectionism (SPP)** is the belief that others expect flawless performance from them and is, therefore, driven by an extrinsically-motivated locus of negative evaluation. Socially-prescribed perfectionism was associated with: attributing blame to oneself and others, self-criticism, fear of negative evaluation, [seeking] approval by others, and external locus of control (Hewitt & Flett, 1991b). Both SPP and SOP were significantly correlated with psychopathology; however, SPP was more strongly related to most symptoms than SOP. Additionally,



studies have shown a positive relationship between SPP and academic procrastination (Onwuegbuzie, 2000; Saddler & Sacks, 1993; Saddler & Buley, 1999).

**Other-oriented perfectionism (OOP)** is the belief that others should deliver perfect performance, which often manifests through interpersonal blame and punitive behavior (Hewitt & Flett, 1991b). Since OOP is not associated with procrastination, this sub-type will henceforth be omitted from discussion.

### ***Frost's Multidimensional Perfectionism Scale (FMPS, 1990)***

Frost et al.'s (1990) conceptual model of perfectionism is organized around five statistically-discrete components of perfectionism: (1) Personal Standards (high self-expectations); (2) Organization (focus on neatness and orderliness); (3) Concern over Mistakes (overgeneralizing mistakes as failures); (4) Doubting of Actions (belief that task performance is rarely satisfactory); (5) Parental Expectations (perception of stringent goal expectations from parents); (6) and Parental Criticism (perception of negative evaluation by parents). Parental Expectations and Parental Criticism are considered etiological factors of perfectionism. Frost et al. (1990) found that Doubting of Actions and Concern over Mistakes were correlated with a broad array of psychopathological symptom and, thus, were likely maladaptive in terms of performance. Of all the components mentioned in the FMPS, Frost and colleagues (1990) consider Concern over Mistakes to be the most representative component of perfectionism. Although Hewitt and Flett (1991) asserted that all perfectionism was maladaptive, a key distinction between their model and that of Frost et al.'s (1992) is that Frost conceptualized perfectionism in terms of its component parts and determined that these components were differentially related to adaptive (Personal Standards; Organization) as well as maladaptive (Concern over Mistakes; Doubting of Actions) outcomes.

### ***Conceptual Overlap and Divergence between Hewitt and Flett's and Frost's MPS***

Frost et al. (1993) compared the shared variance between the two perfectionism scales and found that the Personal Standards and Organization components of perfectionism were correlated with self-oriented perfectionism. Likewise, Concern over Mistakes, Parental Criticism, and Parental Expectations were correlated with socially-prescribed perfectionism. Through factor analysis, Frost et al. (1993) loaded nine subscales from both perfectionism models and found two distinct higher-order categories of per-

fectionism: Positive Striving (i.e., Personal Standards, Organization and Hewitt & Flett's SOP) and Maladaptive Evaluation Concerns (Concern over Mistakes, Doubting of Actions, Parental Expectations, Parental Criticism and Hewitt and Flett's SPP). Positive Striving perfectionism was believed to be related to adaptive perfectionism and Maladaptive Evaluation Concerns perfectionism refers to unhealthy perfectionism.

Frost et al. (1993) found that Positive Striving perfectionism was associated with positive but not negative affect and efficacy. Although correlations were found between SOP and maladaptive forms of perfectionism, the relationship between SOP and positive forms of perfectionism was stronger (Frost et al., 1993). These results emphasize the duplicitous nature of dispositional perfectionism, which Frost et al. believe may be attributable to high Concern over Mistakes. In summary, Frost et al. (1990; 1993) concede that both SOP and SPP have maladaptive components however they consider self-oriented perfectionism to be the "healthier" of the two types due to the positive influence of the Personal Standards component.

The relationship between perfectionism and academic procrastination is of particular interest in the current study. In studies of general (non domain-specific) procrastination, Frost et al. (1990) found procrastination was positively related to maladaptive forms of perfectionism and negatively related to adaptive forms of perfectionism. Klibert et al. (2005) found that perceived self-control was positively correlated with self-oriented perfectionism but negatively correlated with socially-prescribed perfectionism. Klibert et al. (2005) also found no relationship between general procrastination and SPP, but SOP was negatively correlated with general procrastination. It is worth noting that although Klibert et al. used a college sample, the authors used a general procrastination scale rather than one designed specifically for use in an academic setting.

### ***Anxiety and Procrastination***

In college, where performance is routinely assessed under deadline, procrastination may be an attractive coping-strategy for anxious students. Tice and Baumeister (1997) found that students engaging in dilatory behavior reported an immediate reduction of stress. Mindful that a short-term reduction in stress is often offset by greater stress in the long-term, dilatory behavior would seem to be a counterintuitive strategy. However, behaviorists have often noted that immediate consequences have the most powerful influence. This maxim implies that procrastination may be immediately negatively reinforced through the



reduction of anxiety, despite the long-term negative consequences (poor academic outcomes; attrition).

The purpose of our study is to examine adaptive (positive striving and self-oriented) and maladaptive (maladaptive evaluation concerns and SPP) perfectionism as differential predictors of academic procrastination and to assess the influence of trait anxiety upon these relationships. SPP has been shown to be related to anxiety (Hewitt & Flett, 1991) and academic procrastination (Onwuegbuzie, 2000; Saddler et al., 1993; 1999). However, the correlations between SPP and anxiety and with general procrastination have been weak in magnitude or negatively related (Flett et al., 1992; Frost et al., 1990; Onwuegbuzie, 2000; Saddler et al., 1993; 1999).

It is hypothesized that adaptive and maladaptive forms of perfectionism and trait anxiety will be predictive of academic procrastination. Specifically, trait anxiety and maladaptive perfectionism will have a positive relationship with academic procrastination. Conversely, adaptive perfectionism will have a negative relationship with academic procrastination. Moreover, it is hypothesized that trait anxiety will moderate the relationship between adaptive forms of perfectionism and academic procrastination. Lastly, it is hypothesized that trait anxiety will mediate the relationship between maladaptive forms of perfectionism and academic procrastination. This differential relationship with trait anxiety may account for the adaptive versus maladaptive outcomes (e.g., procrastination) associated with perfectionism in the literature.

---

## Method

### **Participants**

Participants were 353 college students (292 females, 61 males) recruited from social sciences classes at California State University, San Bernardino. The ethnic composition of the sample included 51.3% Latino-Americans, 25.5% European-Americans, 9.1% African-Americans, 7.1% Other/Multi-Racial, 5.7% Asian/Pacific Islander, .3% Native-American, and 1.1% of participants declined to disclose their ethnicity. Participants' mean age was 22.75 with an S.D. of 5.26, and the age range was between 18-52 years.

### **Measures**

**Demographics Questionnaire.** This questionnaire collected the following personal data from participants: age, gender, ethnicity, primary language spoken by parents/caretakers, annual income, number of

people living on annual income, and highest level of education completed by parents/caretakers.

**[Hewitt & Flett's] Multidimensional Perfectionism Scale (HMPS;** Hewitt, Flett, Turnbull-Donovan, & Mikail, 1991). The HMPS is a 45-item, seven-point, Likert-type scale (anchored by 1=Disagree to 7=Agree) designed to measure the level of pathological perfectionism in a sample of students and a sample of psychiatric patients along three subscales: self-oriented perfectionism, other-oriented perfectionism, and socially prescribed perfectionism. Higher scores are indicative of greater levels of perfectionism in each subscale.

**[Frost's] Multidimensional Perfectionism Scale (FMPS;** Frost, Marten, Lahart, & Rosenblate, 1990). The FMPS is a 35-item, five-point, Likert-type scale (anchored by 1=Strongly Disagree to 5=Strongly Agree) designed to measure perfectionism along six subscales: Concern over Mistakes, Doubting of Actions, Personal Standards, Parental Expectations, Parental Criticism, and Organization. Higher scores are indicative of greater levels of perfectionism in each subscale.

**The Procrastination Assessment Scale-Student (PASS;** Solomon & Rothblum, 1984). The PASS contains six subscales based on common academic activities in which students procrastinate: writing a term paper, studying for an exam, keeping up with weekly reading assignments, performing administrative tasks, attending meetings, and performing general academic tasks. Participants are asked to indicate frequency, problem extent, and desire to change on three separate 5-point Likert-type scales. The PASS has been shown to possess adequate psychometric properties across studies (Ferrari, 1995; Onwuegbuzie, 2000).

**The State-Trait Anxiety Inventory (STAI-T, Form Y-2;** Spielberger, 1983) is a two-part instrument designed to measure state anxiety (i.e., the severity of anxiety the individual experiences in a particular moment in time) and trait anxiety (i.e., individual differences in the frequency of anxious feelings that remain relatively stable over time). Each subscale includes 20 items measured by four-point Likert-type scales (anchored by 1=Almost never to 4=Almost always). The trait subscale was used in the current study. The trait subscale possesses adequate reliability and validity as reported by Spielberger (1983) and Grös, Antony, Simms, and McCabe (2007).

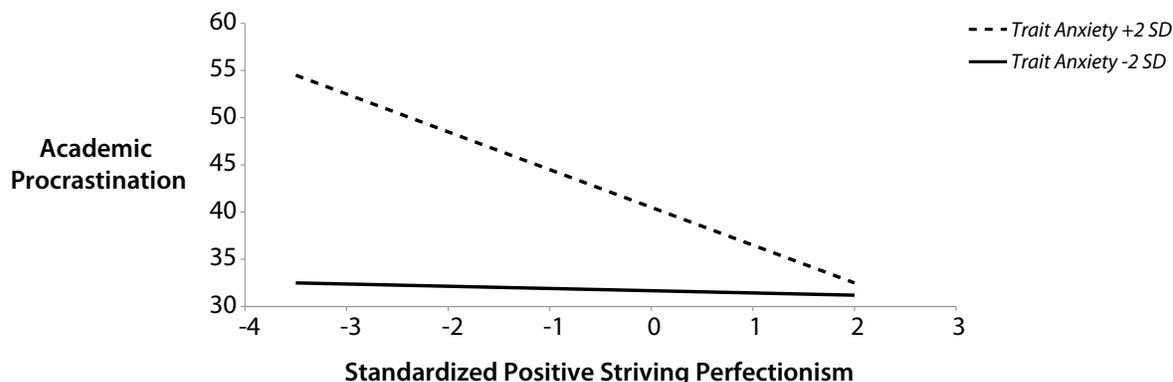
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## Results

**Mediation Hypotheses.** Trait anxiety was predicted to function as a mediator of the relationship between the maladaptive aspects of perfectionism (i.e., SPP and Maladaptive Evaluation Concerns) and academic



**Figure 3.** Procrastination as a function of Interaction of Positive Striving and trait anxiety.



procrastination. Mediation analyses were conducted using nonparametric bootstrapping (see Preacher & Hayes, 2008) to test the models. In these analyses, mediation is significant if the 95% bias corrected and accelerated confidence intervals for the indirect effect do not include 0. Results based on 1,000 bootstrapped samples indicated that while the total effect of SPP on procrastination was significant ( $TE = .11$ ,  $SE = .035$ ,  $p < .05$ ), the direct effect was not ( $DE = .05$ ,  $SE = .04$ ,  $p = .14$ ). Trait anxiety fully mediated the relationship between SPP and procrastination (IE lower 95%  $CI = .03$ , upper 95%  $CI = .09$ ; Sobel test  $z = 3.63$ ,  $p < .05$ ). Results based on 1,000 bootstrapped samples indicated that while the total effect of Maladaptive Evaluative Concerns on procrastination was significant ( $TE = .11$ ,  $SE = .03$ ,  $p < .05$ ), the direct effect was not ( $DE = .05$ ,  $SE = .03$ ,  $p = .13$ ). Trait anxiety fully mediated the relationship between Maladaptive Evaluative Concerns and procrastination (IE lower 95%  $CI = .02$ , upper 95%  $CI = .10$ ; Sobel test  $z = 3.38$ ,  $p < .05$ ).

**Moderation Hypotheses.** Trait anxiety was predicted to function as a moderator of the relationship between adaptive forms of perfectionism (i.e., Positive Striving and SOP) and academic procrastination. Prior to testing for moderation, the trait anxiety, SOP and Positive Striving variables were converted to z-scores to reduce potential for multicollinearity and enhance interpretation of results (Aiken & West, 1991). Results of a hierarchical regression performed with the main effects of Positive Striving and trait anxiety entered into step one and the interaction of Positive Striving X trait anxiety entered in step two revealed that the main effects of Positive Striving ( $\beta = -.27$ ;  $t(359) = -5.51$ ,  $p < .001$ ) and trait anxiety ( $\beta = .25$ ;  $t(359) =$

$5.09$ ,  $p < .001$ ) accounted for 14.2% of the variance in academic procrastination,  $F(2, 350) = 28.99$ ,  $p < .001$ . Moreover, the interaction of Positive Striving X trait anxiety accounted for 1.5% additional variance in academic procrastination ( $F(1, 349) = 6.21$ ,  $p < .02$ ) indicating that, as predicted, trait anxiety moderated the relationship between Positive Striving and academic procrastination. See Figure 3.

Likewise for SOP, results of a hierarchical regression with the main effects (SOP and trait anxiety) entered into step one and the interaction of SOP X trait anxiety entered in step two revealed that the main effects of SOP ( $\beta = -.27$ ;  $t(359) = -5.39$ ,  $p < .05$ ) and trait anxiety ( $\beta = -.27$ ;  $t(359) = 5.48$ ,  $p < .05$ ) accounted for 13.9% of the variance in academic procrastination ( $F(2, 350) = 28.34$ ,  $p < .001$ ). Moreover, the interaction of SOP and trait anxiety accounted for 1.4% additional variance in academic procrastination,  $F(1, 349) = 5.57$ ,  $p < .05$ , indicating that, as predicted, trait anxiety moderated the relationship between SOP and academic procrastination. See Figure 4.

## Discussion

Overall, support for the study's hypotheses was found. Specifically, trait anxiety and maladaptive forms of perfectionism were associated with higher levels of academic procrastination. Conversely, adaptive forms of perfectionism were associated with lower levels of academic procrastination. Moreover, trait anxiety mediated the relationship between maladaptive forms of perfectionism and academic procrastination and moderated the relationship between adaptive forms of perfectionism and academic procrastination. These



results suggest that the mechanism by which maladaptive perfectionism affects procrastination is trait anxiety. It is likely that maladaptive perfectionists attempt to meet externally-imposed standards (which is associated with anxiety) which may lead to avoidance and procrastination. As predicted, trait anxiety moderated the relationship between adaptive forms of perfectionism and academic procrastination. Although trait anxiety was generally associated with greater academic procrastination, this relationship was reversed for those with high levels of adaptive perfectionism. Therefore, it appears that adaptive forms of perfectionism are adaptive under conditions of high general anxiety.

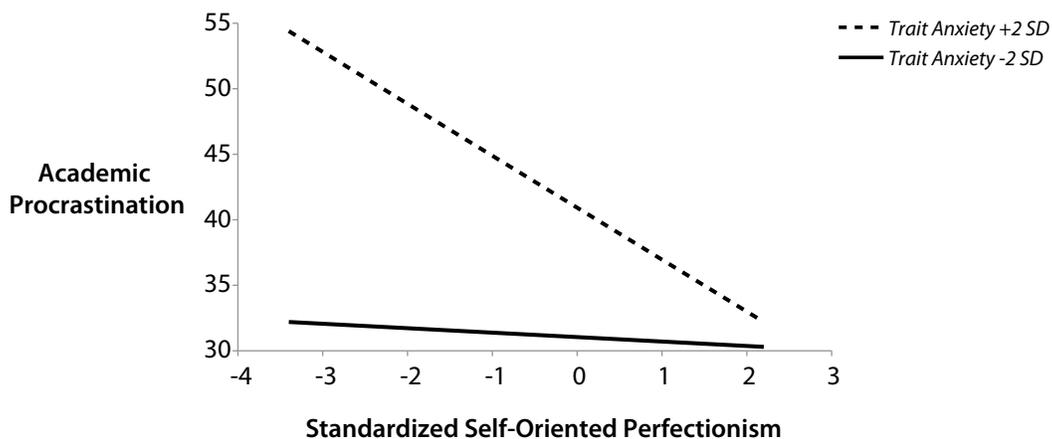
Results provided support for the adaptive-maladaptive distinction between different forms of perfectionism (i.e., SOP & Positive Striving versus SPP & Maladaptive Evaluation Concerns). Specifically, results suggest that adaptive forms of perfectionism that may stem from a more intrinsic motivation are associated with lower levels of procrastination, in general, and lower levels of procrastination when one is generally anxious. Conversely, maladaptive forms of perfectionism which stem from a more extrinsic motivation are associated with greater levels of procrastination.

Trait anxiety appears to be a powerful predictor for academic procrastination. It appears that adaptive forms of perfectionism may insulate students from the deleterious effects of high trait anxiety, thereby enabling the individual to persevere rather than to avoid or procrastinate their schoolwork.

The current study provides support for Frost et al.'s (1990; 1992) factor analysis, which categorized subscales from both scales into adaptive and maladaptive categories (respectively, Positive Striving and Maladaptive Evaluation Concerns). Few studies have implemented both Hewitt and Flett's MPS and Frost's MPS, both of which have their relative strengths. In utilizing both scales in our analyses, we were able to achieve a nuanced and comprehensive perspective on the adaptive-maladaptive debate on perfectionism. Hewitt and Flett's model differentiates types of perfectionism by their locus of internal motivation (self-oriented, other-oriented) or external motivation (socially-prescribed). Frost et al.'s MPS (1990) provided additional support for external or social components in perfectionism (Parental Concerns and Expectations). The results of the present study raise interesting questions about the influence of internalized (intrinsic) versus externalized (extrinsic) motivation on perfectionism, especially in relation to college student procrastination.

Implications of the current study are most apparent in educational or clinical settings. Since trait anxiety was found to be related to both maladaptive forms of perfectionism and academic procrastination, it appears that stress inoculation and time management training may be useful in the treatment of maladaptive perfectionism. In relation to college students, these results suggest that when a student is externally-motivated to perform/achieve (e.g., meet parental expectations), it is more likely that trait anxiety and academic procrastination will occur. However, when a student is internally-motivated to perform/achieve, it is less likely

Figure 4. Procrastination as a function of Interaction of Self-Oriented Perfectionism and trait anxiety.





that trait anxiety and academic procrastination will occur. Therefore, implications for college counselors would be to help students develop more internalized/intrinsic loci of evaluation of academic performance.

The results of the current study provide an objective, empirical basis for discriminating between the conditions under which perfectionism is adaptive or maladaptive. A key justification for ongoing perfectionism research is that gaining a better understanding of the adaptive-maladaptive dialectic has important and practical implications in applied settings. Since recommendations for future research are closely related to the limitations of the current study, they will be discussed together. A limitation of the current study is that it relied on self-report measures only. Participants' responses may be vulnerable to both social desirability and retrospective recall errors. Another limitation of the current study is that adaptive and maladaptive perfectionism were examined as a function of trait anxiety only. One of the most promising avenues of future research pertaining to the study of perfectionism is to experimentally manipulate participant's state stress for greater generalizability to real world situations. Another worthwhile endeavor for future research may be to investigate the role of other variables (e.g. intrinsic versus extrinsic academic motivation; frustration tolerance; self-regulation) that may influence the relationship between types of perfectionism and academic procrastination.

We believe the current experiment uniquely contributes to the adaptive-maladaptive dialectic debate and offers promising avenues for future research and treatment. In conclusion, when students try to live up to external standards of performance, as opposed to standards that are self-determined and personally relevant, unhealthy outcomes are likely to ensue.

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"All of us failed to match our dreams of perfection. So I rate us on the basis of our splendid failure to do the impossible."

— William Faulkner



# Ex-offenders in the Workplace: Employee Reactions

## Author

**Rhiannon Gardenhire**

*California State University, San Bernardino*

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## Abstract

Past research has demonstrated that when ex-offenders obtain legitimate employment, they are less likely to re-offend; lower recidivism rates result, and there is less crime and greater safety, benefiting all of society. However, employers are hesitant to hire ex-offenders. This hesitation has contributed to higher recidivism rates, creating a vicious cycle and a serious social problem. Our study addresses this social problem from a new angle by measuring employee reactions to ex-offenders in the workplace. This was accomplished by surveying college students to measure their attitudinal and behavioral reactions to a scenario that includes a co-worker who is an ex-offender. We chose to focus on three specific variables: the crime the ex-offender committed, the gender of the ex-offender, and the physical distance in the workplace between the worker and the ex-offender. Results indicate that employees do favor certain "types" of ex-offenders in the workplace, such that gender of the ex-offender affects employees behaviorally, and the crime the ex-offender committed affects employees' attitude.



## Author Interview

Rhiannon Gardenhire

**What are you majoring in?** I am majoring in Industrial/Organizational Psychology.

**What year are you in school?** I am a 1st year graduate student

**Which professors (if any) have helped you in your research?** Originally, my research was completed at CSU Fresno, where I was helped by Dr. Rudy Sanchez and Dr. William Bommer. Dr. Riggs approved my application for the Psychology Student Research Journal.

**What are your research interests?** Currently, my research interests are in the area of employee recruitment and selection.

**What are your plans after earning your degree?** After earning my degree, I plan on looking for a job in the field of I/O somewhere in California.

**What is your ultimate career goal?** My ultimate career goal would be to become a Human Resources Director, possibly in the public sector.

**Anything else relevant you would like us to consider including...** I am willing to email the full version of the article for anyone interested.



## **Ex-offenders in the Workplace: Employee Reactions**

The reentry of ex-offenders into society has long been an area of research focus. Within this research area, recidivism rates are an important measure for both researchers and practitioners, because recidivism rates provide a clear indicator of how effective different efforts (e.g., reentry programs and employment aid to offenders) have been in a community (Graffam, Shinkfield, & Hardcastle, 2008; Lam & Harcourt, 2003). This topic remains relevant, as programs have demonstrated reduced rates of recidivism when ex-offenders do obtain a job or participate in some type of reintegration program (Zhang, Roberts, & Callanan, 2006), resulting in community benefits such as less crime, less government costs, and greater community safety (Graffam, et al., 2008; Lam & Harcourt, 2003). Due to this link between employment and lower recidivism rates, it is important for the community to recognize the capabilities of ex-offenders (Graffam, et al., 2008). In this body of research, one important (yet unexplored) topic is how employees are affected by the employment of ex-offenders, and it is this issue the current research will empirically investigate.

### ***The Social Stigma Associated with Ex-Offenders***

Although being incarcerated stalls work experience and job growth, Waldfogel (1994a) contends that this is not the core issue ex-convicts face after leaving prison, but rather the stigma attached to them as they enter back into society is the larger issue. A stigma (in the criminal realm), as defined by Rasmusen (1996), refers to “someone’s reluctance to interact with someone else who has a criminal record.” Waldfogel (1994a) hypothesized that the social stigmas stereotyping ex-offenders in a negative light cause what he has deemed the “conviction effect.” Further, Waldfogel (1994b) argues that the conviction effect creates decreased income and work probabilities that prevent ex-offenders from “participat[ing] in the economic mainstream.”

### ***Recent Research Regarding Employers’ Concerns with Hiring an Ex-Offender***

To date, there has been relatively little research that has focused on employee attitudes concerning ex-offenders. Existing research has focused on employer perceptions. This research has found that many employers doubt the capabilities of ex-offenders (Graffam, Shinkfield, & Hardcastle, 2008). While employee views are certainly different than those of their employers, it is highly likely that each set of attitudes would mutually influence the other.

Albright and Denq (1996) found that only 12% of employer respondents answered “strongly agree” regarding their inclination to hire an ex-offender when given no other background information. However, when other factors were considered (e.g. type of offense, type of job, or level of education), the initial report of 12% varied (Albright & Denq, 1996). For example, in questions where the ex-offender committed a crime against a child, only 3.6% of employers strongly agreed that they would hire the ex-offender, and when the ex-offender had a college degree, the percentage of responders who strongly agreed that they would hire the ex-offender went from 12% to 32% (Albright & Denq, 1996). Thus, it appears that employers may be more willing to hire ex-offenders when given more positive information about an offender (Albright & Denq, 1996). Similar results have been found in other studies that have created profiles of the ex-offenders most likely to obtain employment (Lukies, Graffam, & Shinkfield, 2010; Giguere & Dundes 2002).

Beyond the types of additional information described above, researchers have identified a series of personal and situational characteristics that make employers more or less likely to hire ex-offenders. Among these are the type of crime the person was convicted of and the education and training of the person

The type of offense was a crucial factor employers considered when given hypothetical hiring decisions, showing that nonviolent offenses were favored over violent ones (Albright & Denq, 1996; Graffam, et al., 2008). This factor will be discussed in greater depth in a subsequent hypothesis section regarding ex-offender offenses, but is important to note as a key concern of employers.

Education level and training appeared to have a significant influence on employers’ willingness to hire an ex-offender (Albright & Denq, 1996; Graffam, et al., 2008). The most favored types of education and training for an ex-offender to possess were a college degree, education in a vocational trade, or completion of two or more training programs (Albright & Denq, 1996).

Although there are certain types of ex-offenders employers are more willing to hire, there appears to be relatively few ex-offenders who are actually being hired. One estimate states that ex-offenders are 10-30 percent less likely to obtain a job in contrast to “comparable individuals with no criminal record” (Preface to “How Willing”, 2004).

### ***Present Study***

This study will add to past research by measuring the effect ex-convicts may have on employees in the workplace in relation to affective and



**Table 1.** Employer Likelihood of Hiring an Ex-Offender Based on Type of Offense.

	Offense Committed
Highest chance of being hired	Driving while intoxicated Traffic violation Marijuana use, possession, and/or distribution Forgery
Moderate chance of being hired	Assault Robbery Arson
Lowest chance of being hired	Sex offenses against a child Injury to a child Rape Manslaughter Murder

behavioral measures. Past research on this subject area has either looked at society in a general sense or employer attitudes towards ex-offenders, but ignored looking exclusively at employees.

In order to examine employee reactions to ex-offenders in the workplace, three variables will be used to investigate employee affective and behavioral reactions: (1) the type of offense committed by the ex-offender, (2) the gender of the ex-offender, and (3) the amount of physical space between the employee and ex-offender.

**Type of Offense Committed by the Ex-Offender.**

The type of offense an ex-offender committed has been shown to be an important factor that employers consider when making hiring decisions (Albright & Denq, 1996; Giguere & Dundes 2002). Past research has laid a solid foundation for the types of ex-offenders that are most likely to be hired by an employer.

The offenses committed by ex-offenders that were reported by employers to have the greatest chance of obtaining employment were those that were typically nonviolent in nature (Albright & Denq, 1996; Giguere & Dundes 2002). Offenses that were least favored among employers were those violent in nature or related to the abuse of a child (Albright & Denq, 1996; Giguere & Dundes 2002). Table 1 provides specific example of the likelihood of an employer hiring an ex-offender based on the type of offense committed.

If employers are more likely to hire ex-offenders who committed nonviolent crimes, then it is likely that employees will have similar views regarding the type of offense committed by the ex-offender. This is expected because both groups are likely sub-

ject to the social stigma of ex-offenders discussed above. Therefore, it is reasonable to assume that employees will react less negatively if working with ex-offenders that have committed a nonviolent crime. The following hypothesis was formulated:

H1a: Employees will respond less negatively in terms of affective measures when working next to an ex-offender who committed a nonviolent crime (theft) in comparison to a violent one (assault).

H1b: Employees will respond less negatively in terms of behavioral measures when working next to an ex-offender who committed a nonviolent crime (theft) in comparison to a violent one (assault).

**Gender of the Ex-Offender.** While gender has typically been a common variable in research, the gender of an ex-offender in the workplace has only been hinted at in the past as a variable, and is not a major area of focus in related studies. In one study, employers were asked about a hypothetical applicant named John, and then asked if their opinion of John would change if he were a female (Giguere & Dundes 2002). Eighty-seven percent of employers reported that their opinion would not change, 12 percent reported that they would be more willing to hire John if he were a female, and only one percent reported being less likely to hire John (Giguere & Dundes, 2002). These findings leave much to the imagination, though, since the structure of the question was vulnerable to the social desirability bias. Respondents may have reported their opinion would not change in order to appear as if they treat males and females equal in hiring decisions, because treating both males and females the same would be more socially acceptable (and legal). Due to this gap in



research, it is important to investigate the acceptance of an ex-offender in the workplace based on gender.

The chivalry hypothesis, first introduced by Pollak in 1950, states that because men are socialized to view women as weak and irrational, agents of the criminal justice system treat females in a more lenient manner (Pollak, 1950; Grabe, Trager, Lear, & Rauch, 2006). Grabe et al. examined the chivalry hypothesis by testing if similar findings would be seen in the media, and found that when crimes are nonviolent in nature, the media does, in fact, treat females more leniently compared to males (Grabe, et al., 2006). This finding is relevant not only because it demonstrates the chivalry effect still exists, but also because it shows that the chivalry effect can likely be found outside the realm of the criminal justice system. Based on this research, it is logical that because of the media coverage society is exposed to, that if a woman committed a nonviolent crime, they would be viewed by society more favorably than a male who committed a similar crime, which leads to the following hypothesis:

H2a: Employees will respond less negatively in terms of affective measures when working next to a female ex-offender compared to a male ex-offender.

H2b: Employees will respond less negatively in terms of behavioral measures when working next to a female ex-offender than a male ex-offender.

**Amount of Physical Space Between the Employee and the Ex-Offender At Work.** Physical space has a large effect on a person's comfort level when interacting with various people. For that reason, physical space is a pertinent factor in the present study. In one study conducted, which measured the different levels of social distance "normals" (those who are not stigmatized) desired from stigmatized groups, it was shown that respondents desired the most distance from deviants – those with "social disabilities," which included ex-convicts (Albrecht, et al., 1982). Due to this finding, it is logical to assume that employees will desire a reasonable amount of distance from an ex-offender in the workplace. The following hypothesis will be used:

H3a: Employees will respond less negatively in terms of affective measures when working at a reason-

**Table 2.** Descriptive Statistics and Intercorrelations between Study Variables.

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Gender	-	-	-												
2 Age	-	-	-	-											
3 Gender of Ex-Offender	-	-	-	-	-										
4 Distance	-	-	-	-	-	-									
5 Ex-Offender's Offense	-	-	-	-	-	-	-								
6 Turnover	5.47	1.16	.00	.14*	-.04	.08	.02	(.77)							
7 Work Quality	2.02	1.04	.00	-.18**	-.05	-.04	-.04	-.64**	(.79)						
8 Work Effort	1.74	.80	-.03	-.12*	-.08	-.09	-.01	-.53**	.57**	(.60)					
9 Employee Voice	5.25	1.24	-.03	.24**	.04	.05	.11*	.59**	-.59**	-.37**	(.73)				
10 Organizational Commitment	3.01	1.09	.01	-.09	.02	-.05	-.12*	-.64**	.51**	.38**	-.49**	(.67)			
11 Justice	4.43	1.70	-.09	-.24**	.01	-.09	-.02	-.44**	.27**	.17**	-.42**	.39**	(.67)		
12 Job Satisfaction	2.41	1.01	-.05	-.15**	-.04	-.08	-.07	-.74**	.58**	.54**	-.52**	.66**	.39**	(.71)	
13 Interaction with Ex-Offender	2.86	1.11	.13*	-.21**	-.02	-.02	-.01	-.64**	.52**	.44**	-.50**	.69**	.42**	.65**	(.73)

Note. N = 333. Gender was coded 0 = male, 1 = female. Numbers in parentheses are reliabilities. \* = p < .05, \*\* = p < .01.



**Table 3.** Specific Effects of Offense on Employee Attitudes.

Attitudinal Measures:	F-Value	P-Value
Job Satisfaction	1.31	.25
Organizational Commitment	4.80	.03
Justice	.25	.62
Interaction with Ex-Offender	.01	.91

able distance (a different department) from an ex-offender compared to a close distance (the same department) to an ex-offender in the workplace.

H3b: Employees will respond less negatively in terms of behavioral measures when working at a reasonable distance (a different department) from an ex-offender compared to a close distance (the same department) to an ex-offender in the workplace.

### Method

#### Participants

The survey was offered to business students in a management course at a Western university. Surveys were collected at two separate times: December 2010 and March 2011. Students were justified as a sample because it was considered highly likely that most of the participants had a certain level of work experience and could relate to the hypothetical work situation given.

There were 333 surveys that passed the manipulation check. Of these usable surveys, 170 of the participants were male (51.1%) and 161 were female (48.3%); four participants did not indicate their gender. Age ranged from 19 to 53, with 62.1% of participants falling between the ages of 20 and 23. The ethnicity of participants was as follows: 147 Caucasian/White, 95 Hispanic, 64 Asian/Pacific Islander, 17 African American/Black, six Native American, one Arab, and one Egyptian. Two participants did not provide their ethnicity. The participants' work experience ranged from 0-36 years, with a mean of seven years. Of the participants, 110 had, themselves, or were close to someone who had spent more than one continuous month in prison.

#### Procedure

Participants were given a survey that contained a hypothetical work situation as a manipulation, followed by items related to affective and behavior measures in order to determine how employees would react to the ex-offender. Eight different versions of the survey were created in order to include all combinations

of variables possible and all questions in the affective and behavioral measures were tailored to fit the specific hypothetical situation given in the survey.

#### Measures

**Manipulation of Ex-offender type:** Participants were asked to imagine themselves in a hypothetical situation where they were an above-average employee in an entry-level sales position who had just learned that a new co-worker was an ex-offender. Details about the ex-offender provided were as follows: type of offense committed (assault or theft), gender (male or female), and the proximity of the ex-offender to the participant in the work environment (working in the same department or different departments).

After reading the scenario, participants were asked to respond to 24 items with responses reported on a seven point Likert-type scale ranging from "strongly agree" to "strongly disagree."

#### Attitudinal Measures

**Job Satisfaction:** Three items were used from Hackman and Oldham's (1980) job satisfaction scale.

**Organizational Commitment:** Three items from Porter et al.'s (1974) scale measuring organizational commitment were included in the survey.

**Employee Comfort:** One item was used from Cammann et al.'s (1983) scale to measure employee comfort. Two items to measure employee comfort were also created by the authors.

**Justice:** Three items were created by the authors to measure employee justice in the survey.

#### Behavioral Measures

**Employee Voice:** We used three items from the employee voice scale created by Podsakoff et al. (1990) to measure employee voice and sportsmanship of survey participants.



**Work Quality:** Three items were used from Shore and Bommer's (2010) scale to measure participants' work quality in the survey.

**Work Effort:** Three items from William and Anderson's (1991) scale regarding in-role performance were included in the survey.

**Turnover:** We used three items from Cammann et al.'s (1983) scale to measure intentions to quit.

Next, respondents were asked to complete four questions recalling the facts of the hypothetical scenario as a manipulation check. Demographic information of the survey participants was also collected.

### Results

Table 2 presents means, standard deviations, correlations and reliabilities for the variables used in the study. A MANOVA analysis of our data was conducted to test each of the hypotheses. To do this, we separated all measures into two separate groups (attitudinal and behavioral) and tested each of the hypotheses in a general linear model.

#### Type of Offense Committed by the Ex-Offender

Type of offense committed by the ex-offender was the key variable in our first hypothesis. The MANOVA analysis indicated that there was support for the first part of the hypothesis (Pillai's Trace,  $F = 2.19, p < .10$ , one-tailed). Since there was support for this hypothesis, we decided to further examine the attitudinal variables by looking at each variable's individual F-value. The most significant attitudinal variable was organizational commitment ( $F = 4.80, p < .05$ , one-tailed). No other variable was significant at the  $p < .10$  level. Complete results are reported in Table 3. The second part of the hypothesis was not supported in our MANOVA analysis (Pillai's Trace,  $F = 1.30, p > .10$ , one-tailed).

#### Gender of the Ex-Offender

The second hypothesis was related to the gender of the ex-offender. Results indicated that the first part of the hypothesis was not supported in our MANOVA analysis

(Pillai's Trace,  $F = .48, p > .10$ , one-tailed). Results did indicate, however, support for the second part of the hypothesis (Pillai's Trace,  $F = 2.183, p < .10$ , one-tailed). Because there was support for this analysis, we again looked at the univariate results (which are reported in Table 4). None of the individual variables within the behavioral measures (turnover, work quality, work effort and employee voice) were significant ( $p > .10$ ).

#### Amount of Physical Space Between the Employee and the Ex-Offender at Work

Our final variable of interest was in regards to distance between the employee and the ex-offender in the workplace. The MANOVA analysis of our data indicated that neither the first or second part of the third hypothesis was supported (3a: Pillai's Trace,  $F = 1.37, p > .10$ , one-tailed; 3b: Pillai's Trace,  $F = .10, p > .10$ , one-tailed).

### Discussion

The present study provides evidence that employees do react differently depending on the type of ex-offender in the workplace. There is support to demonstrate a relationship between the gender of an ex-offender in the workplace and employee behavior: employees appear to be affected less negatively in terms of behavior when working next to a female ex-offender by comparison to a male ex-offender. Additionally, there is evidence that a relationship exists between the crime the ex-offender committed and employee attitudes. It appears that employees' attitudes are affected more negatively when working with an ex-offender who committed a violent crime compared to a non-violent crime.

The measure that had the strongest significance in our study was employees' commitment to the organization based on the crime the ex-offender committed. Results indicated that when an ex-offender committed a violent crime and employees were aware of it, their commitment to the organization would be most affected.

**Table 4.** Specific Effects of Gender on Employee Behaviors.

Behavioral Measures:	F-Value	P-Value
Employee Voice	.55	.46
Work Quality	1.08	.30
Work Effort	2.39	.12
Turnover	.66	.42



### Future Research and Limitations

Since this was the first study to address ex-offenders in the workplace from an employee perspective, there were some limitations. While there was support for two hypotheses, the specific behavioral and attitudinal measures are not strong on their own. This reveals the need for further research to better understand the relationship between the variables.

There were also a few limitations to our study. For example, due to privacy laws employees are not typically aware of ex-offenders in their workplace. Additionally, respondents may not have been completely honest in the survey due to the fear of appearing discriminatory towards ex-offenders, causing results to be positively skewed.

These research findings are noteworthy because they begin to recognize that certain types of ex-offenders may be resisted more or less than others in the workplace; a significant discovery for employers encountering applicants who are ex-offenders.

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"In order to succeed, people need a sense of self-efficacy, to struggle together with resilience to meet the inevitable obstacles and inequities of life."

— Albert Bandura



# Ten Impressive Psychological Studies from 2011

# 1

## **Breaking the Rules to Rise to Power: How Norm Violators Gain Power in the Eyes of Others** (*Van Kleef, Homan, Finkenauer, Gündemir, & Stamkou, 2011*)

The power of rudeness was explored in this study published in the journal *Social Psychological and Personality Science*. Though we are taught that politeness gets us far in life, these experiments suggest that those who act rude are perceived as more powerful, more in control, and as not being held to the same standards as others. In the various experiments that were conducted, the participants were presented with scenarios where individuals broke norms of politeness (e.g., breaking accounting rules, a rude customer at a restaurant) and then rated the individuals that broke the norms. The results concluded that those who violated societal norms were perceived as more powerful, more decisive, and more likely to be listened to by others. The authors suggest that those who do not act in accordance with the normally-observed rules of a situation are expected to be able to follow their own volition, indicating their power.

# 2

## **Positive Fantasies about Idealized Future Sap Energy** (*Kappes & Oettingen, 2011*)

Contrary to popular belief, the practice of visualizing goals before attempting to achieve them may actually be counterproductive, according to this article from the *Journal of Experimental Social Psychology*. When the researchers experimentally induced fantasies about a positive future outcome, they found that it reduced ambition and energy to work toward that goal. In the study, participants that engaged in positive visualization actually tricked themselves into thinking that they had already achieved said goal and exhibited a physiologically-relaxed state, while those who questioned the future outcome summoned up greater energy in order to obtain that goal. The lesson to be derived from this study is to never visualize an achievement until it has been attained.

# 3

## **Relaxation Increases Monetary Valuations** (*Pham, Hung, & Gorn, 2011*)

This article from the *Journal of Marketing Research* suggests that people that are relaxed assign more monetary value to products that they buy. In a series of experiments, the researcher found that people that were in a greater state of relaxation, regardless of mood, placed a higher value on various products that they were presented with than those who were in a more anxious state. It was concluded that those who are more relaxed have increased levels of abstract representation about an item's value, leading them to think that it is worth more. The diminished state of arousal leads individuals to think about the pleasure that the item will bring them rather than its actual value. So there may be an advantage to that last minute Christmas shopping, after all!

# 4

## **Time Discounting Predicts Creditworthiness** (*Meier & Sprenger, 2011*)

This article is of particular relevance to contemporary times, as it explores the possible individualistic reasons that the nation is in the midst of a credit crisis. In this *Psychological Science* article, researchers looked at participants' willingness to delay gratification of a smaller reward for a larger reward in the future, as well as the length of time that they were willing to wait for the larger reward. They then compared this to the participants' credit scores. They found a strong relationship between willingness to delay gratification and higher credit scores. Though this may not apply to all that have poor credit, it definitely holds implications regarding the over-spending epidemic that landed our nation in this recent recession.



## 5 **Effect of a Nicotine Free Inhalator as Part of a Smoking Cessation Program** (Caponnetto, Cibella, Mancuso, Campagna, Arcidiacono, & Polosa, 2011)

In this study from the European Respiratory Journal, researchers looked at the behaviors that are associated with smoking, and how using a cigarette surrogate (i.e., a cigarette shaped object) as a substitute for physical smoking behaviors can drastically increase a person's chance of quitting smoking. By giving the experimental group a fake cigarette with no nicotine, smokers that had been identified on the behavioral and ritualistic qualities of smoking to be more dependent on cigarettes were 3.5 times more likely to quit than those who did not have a behavioral substitute. The most fascinating aspect about this study is the focus on the multiple facets of cigarette addiction. Though nicotine undoubtedly plays a part in cigarette addiction, this study shines light on the fact that it may not be the primary factor associated with some smokers' habit.

## 6 **Metaphors We Think With: The Role of Metaphor in Reasoning** (Thibodeau & Boroditsky, 2011)

Metaphors are extremely powerful, and this point is made overtly clear when looking at the data from the following study from Plos ONE. These experimenters used a story about city crime with one small but crucial change between their two groups: the presence of a metaphor describing the crime problem. The presentation of this single caveat was enough to produce drastic differences in the solutions that students advocated in order to solve the reported crime problem. Even more intriguing, though the metaphor that they were exposed to did help shape the participants' perceptions about the situation, only a very small percentage of them were able to identify the metaphor as the key to their feeling about the matter. Not only was a single metaphor able to drastically influence participants' view of the issue, but most participants were completely unaware of this influence, and instead attributed their feelings to the statistics that were reported.

## 7 **Are Two Narcissists Better Than One? The Link between Narcissism, Perceived Creativity, and Creative Performance** (Goncalo, Flynn, & Kim, 2011)

This study, from the Personality and Social Psychology Bulletin, explored a hypothesized relationship between narcissism and creativity. Though this has been explored in-depth by many researchers, the results have been mixed. Using independent raters, researchers found that there were no differences in creative output. However, narcissists did believe themselves to be more creative, and were often able to convince others of the fact through their self-confidence, charisma, and enthusiasm. The researchers did find that if they paired two narcissists in a group to work together, they often produced more creative results due to their sense of competition between one another. This effect was not found with more than two narcissists in a group, because they started to undermine each other. As they say, too many cooks spoil the soup!

## 8 **Do Positive Children Become Positive Adults? Evidence from a Longitudinal Birth Cohort Study** (Richards & Huppert, 2011)

Though much ado is made about the effect of childhood experiences and the persistence of personality aspects throughout life, relatively few studies make a real effort to see how true these assumptions are. In the Journal of Positive Psychology, researchers looked at children in a longitudinal study to see if their childhood well-being and positive experiences would predict positive adult outcomes. They did find that those children that were rated as positive were less likely to experience emotional problems, and more likely to have job satisfaction and greater social support in their adult lives. One surprising result is that these happy children were no more likely to get married than those who received negative ratings in childhood; in fact, they were more likely to get divorced. Overall, these positive attitudes and experiences in childhood signify not only a lack of later adulthood problems, but actually predict overall well-being.



# 9

## **The Discriminating Consumer: Product Proliferation and Willingness to Pay for Quality** *(Iyengar, Bertini, & Wathieu, 2011)*

Though it may seem that, when faced with a great deal of product variety, people would naturally go for the most economical choice, this study on the buying habits of people faced with a great deal of choices actually insinuates just the opposite. These researchers found that, when there was a great variety of a single product to choose from, buyers started thinking more about the quality of the product and were willing to pay more for that quality. The researchers concluded that, when faced with many choices, buyers choose a product on the basis of perceived product efficacy rather than price.

# 10

## **Mad Enough to See the Other Side: Anger and the Search for Disconfirming Information** *(Young, Tiedens, Jung, & Tsai, 2011)*

This study from the Journal Cognition and Emotion has an interesting twist: could it be that the solution to confirmation bias is being angry? These researchers found that participants who had anger experimentally induced in them were more likely to read about views that were critical of their previously-held beliefs than those who had sadness induced or were in a neutral condition. These angry participants were more likely to look for information that disconfirmed their beliefs, and were more likely to shift away from their previously-held position on the topic of debate. This brings to question whether getting people angry is the key to making them more critical of their views and more cognizant of the flaws in their arguments.

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*DeSalvo, D. (2011, December 28). Ten impressive psychology studies from 2011. Psychology Today: Neuronarrative. Retrieved from <http://www.psychologytoday.com/blog/neuronarrative/201112/ten-impressive-psychology-studies-2011>*



# Is Drug Use the Key to Creativity? A look at Psychotropic, Legal, and, Illegal Drugs

## Authors

**Danielle E. Humphrey and James C. Kaufman, Ph.D.**

*California State University, San Bernardino*

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## Abstract

This study examined self-reported drug use of a wide array of psychotropic drugs and performance on creativity measures. In addition, self-reported legal and illegal drug use was studied to compare with past studies. Hypothesis one: psychotropic drugs will have an impact (negative or positive) on creativity. Hypothesis two: legal and illegal drug users would be marginally more creative than non-users. Participants included 711 female and 101 male college students over the age of 18. Participants filled out a self-report measure of drug use and an alcohol and drug survey with a specific focus on the types of drugs, as well as their associated quantity and frequency of use. They then participated in three creative tasks: Self-assessment of Creativity, a Consensual Assessment Technique, and Artistic and Everyday Creativity. Results yielded that Loxitane negatively predicts creativity and Thorazine positively predicts creativity; both of which are used to treat schizophrenia. Prozac has shown to be a negative predictor of creativity, and Serzone has shown to be a positive predictor; both drugs are used to treat depression. Results for recreational drugs showed that people participating in various creative activities negatively predicts alcohol and drug use, whereas people who participate in activities such as going to museums positively predicts alcohol and drug use. It was also found that wine, designer drugs, and sedatives are positive predictors of creativity. The results imply that certain prescribed drugs (i.e. Thorazine and Serzone) may be preferable over others (i.e. Loxitane and Prozac). The results from recreational drug use infringe the stereotype that creative people like to use drugs.



## Author Interview

Danielle Humphrey

**What are you majoring in?** I am majoring in General Experimental Psychology.

**What year are you in school?** I am a 1st year graduate student.

**Which professors (if any) have helped you in your research?** Dr. James C. Kaufman.

**What are your research interests?** Psychopharmacology.

**What are your plans after earning your degree?** I want to attend a Ph.D. program in neuroscience.

**What is your ultimate career goal?** To work in a neuroscience lab conducting research on various drugs.



### Is Drug Use the Key to Creativity? A look at Psychotropic, Legal, and, Illegal Drugs

Drug use increases creativity! At least, that is what the layperson thinks. Indeed, one of the top five reasons that adolescents report trying drugs is to increase their creativity (Novacek, Raskin, & Hogan, 1991). Many poets and writers, including Hunter S. Thompson, Alexandre Dumas Pere, and Alfred Lord Tennyson, have reported using drugs to enhance their creativity (Sessa, 2008). Creative artists have been found to use more legal and illegal drugs compared to control groups (Preti & Vellante, 2007). Plucker and Dana (1998a) argue that the public wants the relationship between creativity and drug use to exist, because it relieves pressure to be creative.

But does drug use really improve creativity? Most research shows little or no relationship. Bourassa and Vaugeois (2001) found that marijuana had no positive effects on divergent thinking, but the group that thought they received marijuana scored better on divergent thinking tests (i.e., they did better because they thought they were high). Plucker and Dana (1998b) found that previous use of alcohol, marijuana, and tobacco was negatively correlated with creative achievements. Jones, Blagrove, and Parrott (2009) found that cannabis users had more unique responses compared to the control group, but did not rate themselves to be more creative. Ecstasy users were not more creative than the control group, although they rated themselves to be. Plucker, McNeely, and Morgan (2009) looked at creativity and drug use from a different perspective, studying the reciprocal relationship of creative characteristics, such as risk-taking and the use of alcohol, tobacco, and marijuana.

They found no significant results between creativity characteristics and the use of the three substances.

Beveridge and Yorston (1999) report that many artists and writers believe that alcohol consumption gives them creative insight. Norlander and Gustafson (1997; 1998) conducted several studies looking at alcohol consumption at different stages of the creative process. Broadly, they found that drinking alcohol typically offered no improvement compared to control groups.

There seems to be a weak relationship between creativity and both legal and illegal drug use, but what about psychotropic medications and creativity? It is reported that mental illness and creativity are associated (Lauronen et al., 2004; Kaufman, 2005; Nettle, 2006; Ivcevic, 2007; Batey & Furnham, 2008). Therefore, what kind of impact might the psychotropic medications used to treat mental illness have on creativity? Farah, Haimm, Sankoorikal, and Chatterjee (2008) studied whether people sacrifice creativity by taking Adderall in order to enhance cognition. They found that Adderall affected people in different ways, depending on the individual's creativity. If the person demonstrated high creativity before taking the drug, there was either impairment or no effect. If the person had low creativity, there could be an enhancement.

Because of the lack of research on psychotropic medication and creativity, it is necessary to examine related constructs, such as intelligence. Creativity and intelligence share some of the same cognitive components (Cho, Nijenhuis, Van Vianen, Kim, & Lee, 2010). Breuning and Davidson (1981) studied 24 mentally disabled adults who were given intelligence tests in both standard (i.e., typical test administration) and reinforcement (i.e., participants were allowed to select a reinforcer

**Table 1.** Summary of psychotropic medications predicting overall creativity.

Variable	Overall Creative Activities		
	B	SE B	$\beta$
Constant	1.6	0.04	
Loxitane	-0.5	0.11	-.48**
Thorazine	0.22	0.09	.23*
Prozac	-0.014	0.01	-.80*
Serzone	0.15	0.07	.19
$R^2$	0.04		
F	9.19*		

\* $p < .05$ . \*\* $p < .01$ .



**Table 2.** Summary of everyday creativity measures predicting recreational drug use.

Variable	Recreational Drugs		
	B	SE B	$\beta$
Constant	3.01	0.42	
Dyed hair unusual color	-0.39	0.08	-.18**
Took spontaneous trip with friend	-0.41	0.10	-.15**
Was animated at a party	-0.35	0.08	-.15**
Practice an instrument	-0.29	0.09	-.12*
Made posters	0.34	0.12	.11*
Watched foreign language program on TV	0.20	0.09	.08*
Published in an art magazine	0.41	0.20	.07*
$R^2$	0.13		
F	15.49**		

\* $p < .05$ . \*\* $p < .01$ .

after a correct response to a test item) conditions. Results showed that all groups performed comparably while receiving psychotropic medication; when some participants were taken off their medication, their performance improved regardless of condition. Shin et al. (2010) tested nonverbal memory and organizational skills in medicated and drug-naïve obsessive-compulsive disorder (OCD) patients. They found no differences between the two groups. Roiser et al. (2009) reported that subjects with bipolar disorder showed cognitive deficiencies in processing, short-term spatial memory storage, and sensitivity in negative feedback, and that these deficiencies were due to the illness itself, not because of mood-stabilizing medication.

It appears that despite public opinion, very weak relationships exist between creativity and illegal drugs (e.g. marijuana), legal drugs (e.g. alcohol), and perhaps psychotropic medication (e.g. Zoloft). The purpose of this study was to examine self-reported drug use of a wide array of psychotropic drugs and performance on creativity measures. In addition, self-reported legal and illegal drug use was studied to compare with past studies. Hypothesis one: psychotropic drugs will have an impact (either negative or positive) on creativity. Hypothesis two: legal and illegal drug users will be marginally more creative than non-users (consistent with past research).

## Method

### Participants

All participants were college students over the age of 18 years old. There were 711 females and 101 males. The participants received extra credit for a psychology course of their choice for taking part in the study. All participants were treated in accordance with the Ethical Principles of Psychology and Code of Conduct (American Psychological Association, 2002).

### Materials

Materials for this study consisted of an online survey conducted on Survey Monkey. Participants filled out a self-report measure of legal and illegal drug and alcohol use; in addition, they completed a drug survey with a specific focus on the different types of drugs and the frequency of their use (e.g., in the last six months, in your whole life). Then, they participated in three creativity tasks: Self-assessment of Creativity, a Consensual Assessment Technique measure (writing a photo caption), and Artistic and Everyday Creativity (behavior checklists).

### National Alliance on Mental Illness (NAMI)'s Commonly Prescribed Psychotropic Medications (National Alliance on Mental Illness, 2010)

Participants were asked to report on their psychotropic drug usage for both the past six months and their whole life, using a seven-point Likert Scale



**Table 3.** Summary of the relationship between drug use and rated creativity measures.

Variable	Rated Creativity		
	B	SE B	$\beta$
Constant	2.24	0.08	
Wine	0.05	0.02	.13*
Designer Drugs	0.06	0.03	.09*
R <sup>2</sup>	0.04		
F	9.19*		

\* $p < .05$ . \*\* $p < .01$ .

Survey (i.e., Never, under five times with prescription, under five times without a prescription, often with a prescription, often without prescription, daily with prescription, daily without prescription).

**Fund for the Improvement of Postsecondary Education (FIPSE) Core Institute Core Alcohol and Drug Survey Long Form** (Core Institute, 1994)

Participants indicated their usage of legal and illegal drugs on a seven-point Likert Scale survey (i.e., none, once, twice, three to five times, six to nine times, 10 to 15 times, 16 or more) for both the past month and their whole life. There are criticisms of self-report measures, but the self-report measures have shown to be a reliable resource, as research shows a high correlation between self-report measures as well as peer review reports (Stacy, Widamann, Hays, & Dimatteo, 1985).

**Self-assessment of Creativity Survey (SAC;** adapted from Kaufman & Baer, 2004). This is a six item, one to five Likert Scale survey. Response options included, "I consider myself to be very creative," and "I prefer to do things by the book." These items were modified from a self-assessment given by Kaufman and Baer (2004), which was, itself, modified from the International Personality Item Pool (IPIP) (Goldberg, 1999; Goldberg et al., 2006). Participants were also asked to rate their Intelligence Quotient (IQ) and creativity according to a standard bell-curve.

**Consensual Assessment Technique (CAT)** is an apparatus used to measure creativity. CAT relies on two principles: the task needs to be open-ended to allow for flexibility, and that one should not need to possess any particular skills to fulfill the task in a timely manner, which indicates signs of creativity (Amabile, 1982). In the present study, participants were instructed to write a caption for an ambiguous photograph in five minutes or less. Research has shown CAT to be a reliable apparatus of measuring creativity (Kaufman, Lee, Baer, &

Lee, 2007). We used quasi-experts to rate the captions of the photographs used in the CAT; quasi-experts have been shown to agree with each other regarding the interpretations (Kaufman, Baer, & Cole, 2009).

**Artistic and Everyday Creative Self-Assessment** has a moderately high correlation with self-report performance of artistic and everyday creativity (Ivcevic, 2007). Participants were asked to indicate (e.g., yes or no) different creative activities they have participated in (e.g. made a collage, told a joke, acted on stage).

**Procedure**

Participants accessed the online survey via SONA and took the actual survey on Survey Monkey. After signing an informational consent form, participants filled out the surveys, were debriefed, and received extra credit.

**Results**

Regression analysis was used to examine the relationship between prescription drug use and creativity. The regression model explained a statistically significant amount of the variance (3,8%) for overall creativity of people who have used prescription drugs in their life time in  $F(1, 720) = 9.185, p < .05$ . Four drugs predicted creativity: Loxitane ( $\beta = -.484, p < .001$ ), Prozac ( $\beta = -.089, p < .005$ ), Thorazine ( $\beta = .230, p < .005$ ), and Serzone ( $\beta = .192, p < .005$ ) (see Table 1).

Regression analysis was then used to examine the relationship between recreational drugs and creativity. The regression model explained a statistically significant amount of the variance (13%) for overall creativity of people who have used recreational drugs in their life time in  $F(7, 724) = 15.492, p < .001$ . Students were less likely to have taken recreational drugs if they had dyed hair an unusual color ( $\beta = -.181, p < .001$ ), took a spontaneous trip with a friend ( $\beta = -.150, p < .001$ ), were animated at a party ( $\beta = -.152, p < .001$ ), or practiced



an instrument ( $\beta = -.116, p < .005$ ). Students were more likely to have taken recreational drugs if they had made a poster ( $\beta = .105, p < .005$ ), watched a foreign language program on TV ( $\beta = .077, p < .005$ ), or published in an art magazine ( $\beta = .073, p < .005$ ) (see table 2).

A Cronbach's Coefficient Alpha is a common tool used to measure scale reliability. The raters use for the CAT had a Cronbach's Alpha = .85, indicating a strong reliability among raters.

Lastly, regression was used to examine the relationship between drug use and rated creativity measures (i.e. CAT). Using a one-way ANOVA, the model explained a statistically significant amount of variance (4.7%) for overall creativity of people who indulge in recreational drugs  $F(3,705) = 11.658, p < .001$ . Three recreational drugs predicted creativity: wine ( $\beta = .130, p < .001$ ), designer drugs ( $\beta = .085, p < .005$ ), and sedatives ( $\beta = .085, p < .005$ ) (see Table 3).

### Discussion

Results show that Loxitane negativity predicts creativity and Thorazine positively predicts creativity; both of which are used to treat schizophrenia. The same phenomenon is seen for Prozac and Serzone, which are both antidepressants: Prozac has shown to negatively predict creativity, and Serzone has shown to positively predict creativity. Though there are mixed results, they may lead to the preferred use of certain types of psychotropic drugs.

Recreational drug use results showed that people participating in some creative activities negatively predicts alcohol and drugs use, whereas people who participate in activities such as going to museums positively predicts alcohol and drug use. Maybe people who do these activities believe they can be creative without drugs. However, it was found that wine, designer drugs, and sedatives are all positive predictors of creativity.

Prescription drug use is becoming more common (Teter, McCabe, LaGrange, Cranford, & Boyd, 2007); thus, it is important to understand how they affect such cognitive processes as creativity. Creativity has been shown to be a valuable tool in many aspects of life; therefore, the more information about drug use as it pertains to creativity, the better the understanding of a relevant and valuable topic. Ultimately, however, drug use and creativity continue to be a controversial issue, and more research is needed to clarify the relationship between these two concepts.

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*Is Drug Use the Key to Creativity? A look at Psychotropic, Legal, and, Illegal Drugs*

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"The true sign of intelligence is not knowledge but imagination."

— Albert Einstein



# Cholinergic Modulation of Reinforcement Effects in a Reinstatement Model of Drug Relapse Using Sucrose Reward

## Authors

**Joseph Pipkin, Joseph Valentine, Veronica Rios, Venuz Greenfield, and Allen Butt, Ph.D.**

*California State University, San Bernardino*

## Abstract

This experiment explores the effects of rat cholinergic nucleus basalis magnocellularis lesions (NBM) on dopamine-dependent reward mechanisms in a reinstatement model of drug addiction and relapse using sucrose rewards. The finding of enhanced dopaminergic activation of the nucleus accumbens in the reward pathway in response to amphetamine treatment in rats with NBM lesions suggests that the DA response to sucrose reward will increase in NBM lesioned rats. Thus, NBM lesions were expected to increase sensitivity to sucrose in a sucrose-seeking reinstatement-conditioning task. After 192-IgG-saporin (n=12) or sham (n=12) lesions of the NBM, rats were trained in an operant sucrose-seeking reinstatement task. Rats were first shaped to press a lever for sucrose before advancing to a variable ratio (VR-5) schedule. During VR-5 training, lever presses resulted in the presentation of an auditory-visual compound cue followed by sucrose delivery. After five days of training, operant behavior was extinguished across three days, where lever presses had no consequences. Finally, during the reinstatement phase, rats were reintroduced into the test chambers where lever presses only resulted in the presentation of the auditory-visual secondary reinforcer. The percentage of responses during the reinstatement phase relative to pre-extinction responses on the final day of VR-5 training was significantly greater in the NBM lesion group compared to sham controls. Findings suggest that cholinergic interactions with the dopamine reward system may play a role in the processes associated with drug seeking and addiction. Low levels of cortical cholinergic function may predict vulnerability to drug addiction.



## Author Interview

Joseph Pipkin

**What are you majoring in?** I am majoring in General Experimental Psychology.

**What year are you in school?** I am a 2nd year graduate student.

**Which professors (if any) have helped you in your research?** Drs. Cynthia Crawford, Sanders McDougall, Arturo Zavala, and Allen Butt.

**What are your research interests?** I am interested in understanding the neurobiological and neurochemical mechanisms that contribute to drug seeking behavior and relapse.

**What are your plans after earning your degree?** I will be attending the Ph.D. program at The University of Texas at El Paso for Behavioral Neuroscience.

**What is your ultimate career goal?** Upon completion of a Ph.D. in Experimental Psychology, I plan to continue with a research career, obtain a job in academia, establish my own laboratory, and teach undergraduate and graduate psychology students.



## **Cholinergic Modulation of Reinforcement Effects in a Reinstatement Model of Drug Relapse Using Sucrose Reward**

The neurobiological basis of drug abuse and addiction is the subject of a rapidly increasing amount of pharmacological, electrophysiological, and brain lesion research. Vulnerability to drug addiction is a complex behavioral phenomenon influenced by genetic background as well as by environmental influences (Kreek, Nielsen, Butelman, & LaForge, 2005). These influences are expressed through a variety of brain systems, including the dopamine reward system (Iversen & Iversen, 2006). The cortico-basal ganglia are also engaged in appetitive behaviors, including Pavlovian approach and goal-directed instrumental responding for reinforcement (Yin, Ostlund, & Balleine, 2008). Nevertheless, it appears that dopaminergic transmission from the cells of the ventral tegmental area (VTA) and its target, the nucleus accumbens (n. acc.; see Figure 1.), plays an essential role in the rewarding properties of reinforcers ranging from psychostimulants to palatable foods, including sucrose (Nair, Adams-Deutsch, Epstein, & Shaham, 2009).

While the role of the dopaminergic VTA and the n. acc. in reward processes has been firmly established, the dynamic interactions between this classical dopamine reward pathway and other brain systems are less understood. One important system known to influence VTA activity and, in turn, influence dopamine release at the n. acc., is the cholinergic basal-cortical projection system of the nucleus basalis magnocellularis (NBM; eg., Hiranita, et al., 2004; Mattsson, Olson, Svensson, & Schilstrom, 2007).

Previous research demonstrated that the cortical cholinergic denervation caused by selective lesions of the NBM lead to both an increase in motor activity and an increase in dopamine release at the n. acc. in response to amphetamine (Mattsson et al., 2004; 2007). Although there is a growing body of literature describing the relationship between cholinergic and dopaminergic function in terms of motor behavior and dopamine release, the impact of NBM lesions on the reward systems implicated in drug abuse models of addiction has not been systematically studied.

### **Materials and Methods**

#### **Subjects**

A total of 24 male and female rats of Long-Evans descent (Harlan, Indianapolis, IN) were used. The rats were raised at California State University, San Bernardino

(CSUSB) and individually housed under a 12 hr light/dark cycle with ad libitum water and standard rat chow prior to surgical and behavioral manipulations. All animals were treated in accordance with the "Guide for the Care and Use of Mammals in Neuroscience and Behavioral Research" (National Research Council, 2003) and an approved research protocol by the Institutional Animal Care and Use Committee at CSUSB.

#### **Apparatus**

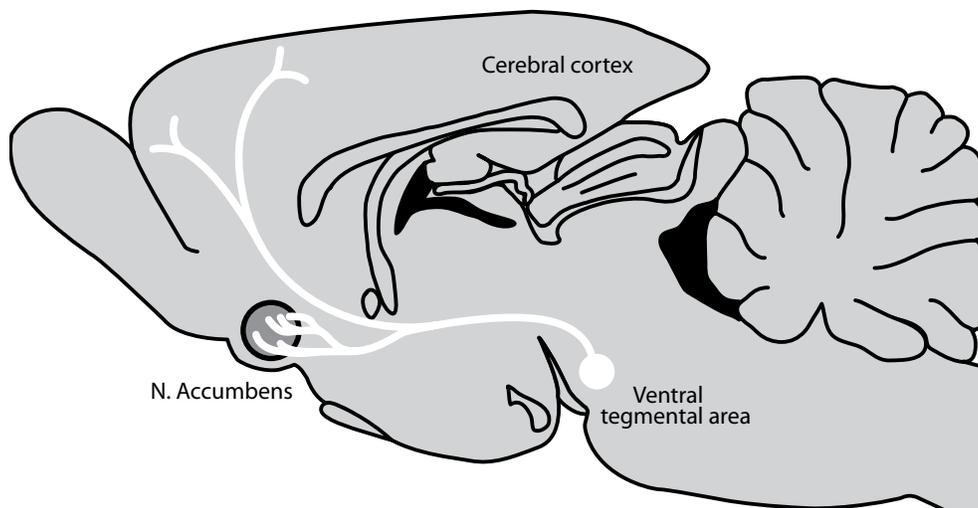
Testing was conducted in individual computer-controlled, sound-attenuating operant chambers (Coulbourn Instruments, Allentown, PA) measuring 29 × 26 × 33 cm. Each chamber was equipped with a 7.5 W white light discriminative stimulus located above and to the right of the food magazine and a speaker capable of producing a 2000 Hz tone located on the chambers' front panel. Bar pressing was reinforced by the delivery of a sucrose pellet (45 mg; P. J. Noyes Co., Lancaster, NH) into a magazine located at floor-level to the left of the response lever. A 5 W white light located at the top of the rear wall of the chamber provided ambient illumination. The presentation of discriminative stimuli, the delivery of reinforcement, and detection of lever-presses were controlled via computer interface (WINLINC, Coulbourn Instruments, Allentown, PA).

#### **Procedures**

##### **Surgery**

Surgery was conducted when rats reached an approximate weight of 350 g (appx. 100 days old). Rats then received bilateral immunotoxic lesions or sham lesions of the NBM. To induce anesthesia prior to surgery, rats were given an injection of sodium pentobarbital (40 mg/kg, i.p.; Butler Co., Dublin, OH) of sufficient strength to reach a surgical plane of anesthesia (determined by absence of response to tail-pinch, absent eye blink reflex). Selective lesions of the NBM were made by bilaterally infusing the immunotoxin 192-IgG-saporin (Chemicon, Temecula, CA) into the NBM of anesthetized rats. The sham lesion control group received intracerebral infusions of sterile saline only. After shaving, cleaning (90% ethyl alcohol), and treating the scalp with a topical antibacterial solution (Betadine), the anesthetized animal was placed on a stereotaxic frame (David Kopf Instruments, Tjunga, CA). The eyes were lubricated with commercially-available ophthalmic lubricant. A 1.5 cm incision was made on the scalp along the midline, the periosteum on the skull top was deflected, and the surrounding skin and musculature was laterally deflected. Using a stereotaxic drill (David Kopf Instruments, Tjunga, CA) with a sterilized bit,

**Figure 1.**



a series of four craniotomies were made in the skull at the following coordinates: -0.75 mm posterior to bregma and 2.3 lateral to midline, bilaterally, and at -0.75 mm posterior to bregma and 3.3 mm lateral to midline, bilaterally. Prior to intracerebral infusion of immunotoxin (or sterile saline in sham lesion rats), the dura beneath each craniotomy was opened using a sterile, fine-gauge needle tip to allow passage of infusion cannula. Animals in the NBM lesion group received a total of four infusions of 192-IgG-saporin suspended in Dulbecco sterile saline solution (Sigma Chemicals, St. Louis, MO) at a concentration 0.4 ug/ul. A volume of 0.2 ul 192-IgG-saporin solution was infused (0.1 ul/min) into each medial site (-0.75 mm posterior to bregma and 2.3 lateral to midline) at a depth of -7.8 mm below the surface of skull, and into each lateral site (-0.75 mm posterior to bregma and 3.3 lateral to midline) at a depth of -8.1 mm below the surface of the level skull; one site was infused one at a time using a microinjection unit (David Kopf Instruments, Tujunga, CA) capable of delivering small volumes. The cannula was left in place for an additional 2 min following each infusion to allow diffusion of the immunotoxin away from the cannula tip. Surgical procedures were identical for rats in the sham-operated control group only subjects were infused with saline. After surgery, rats were returned to their home cages and allowed two weeks to recover.

**Reinstatement Procedure Training**

The first two days of training consisted of 30-min familiarization sessions, where reward pellets (45 mg sucrose) were dispensed on a variable-interval 60 schedule of reinforcement with no CS paired with food

presentation. On the following day, rats received the first of three 30-minute lever pressing training sessions. Before the animal was placed in the chamber, two to three pellets were placed in the food cup and crushed on the lever to facilitate the learning of the operant response. On the first day of lever press training, the reinforcement schedule was set at a fixed-ratio-1 (FR-1), where reinforcement consisted of the presentation of the light-tone compound, followed immediately by the delivery of a food reward (sucrose pellet). Reinforcement was followed by a 20-s time-out period, where pressing the lever was not reinforced by CS or food delivery. On the second day, the schedule was increased to an FR-2. A VR-5 schedule was implemented on days 3-7 to ensure that rats were responding reliably by the end of training. This schedule of partial reinforcement is known to elicit more robust responding than FR schedules when reinforcement is withheld (Mowrer and Jones, 1945). After the last day of VR-5 training, rats underwent daily 30-minute extinction sessions, where neither food nor the light-tone CS were presented after operant responding. Extinction sessions continued for three consecutive days. After the last extinction day, rats underwent cue-induced reinstatement procedures. Rats were subjected to two days of 30 minute VR-5 schedule reinstatement test sessions. When rats pressed the lever, this elicited the presentation of the light-tone CS, but without the food reinforcement.

**Results**

Simple repeated measures ANOVA's were used to analyze the results of this study. Across acquisition in the VR5 task (figure 2), the NBM lesion group made



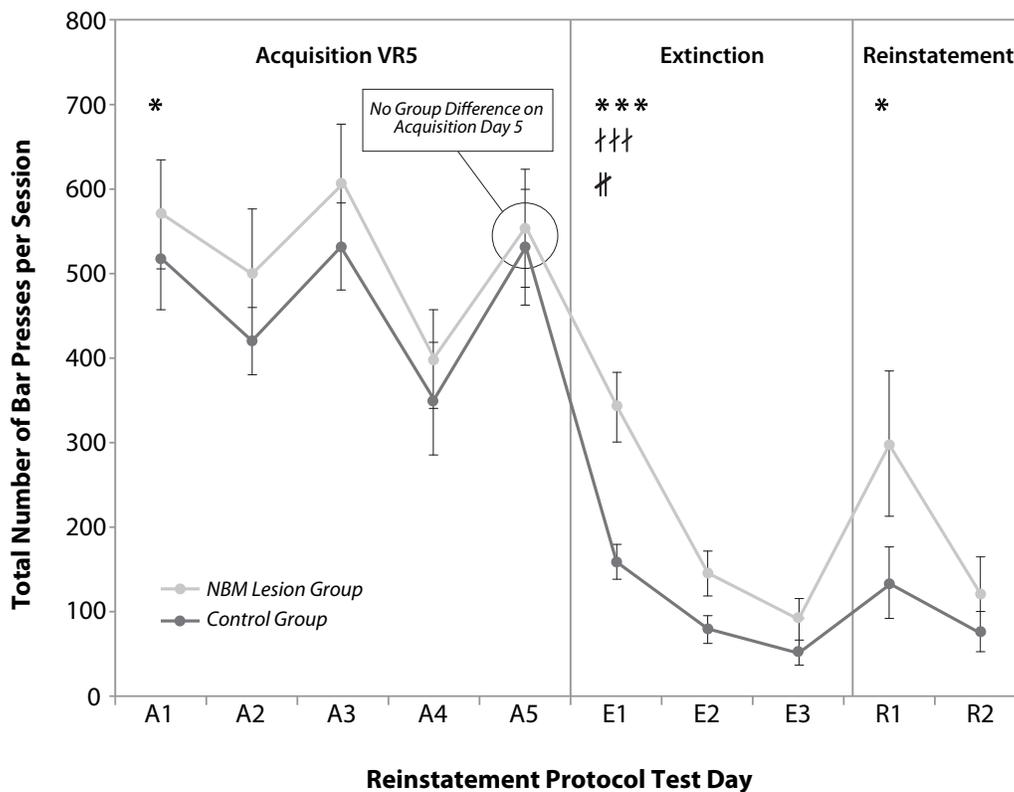
significantly more bar-presses than the saline group  $F(4,99) = 3.22, p < 0.05$ . By the end of VR5 acquisition, however, NBM lesion and control groups did not differ in operant output  $F(1,18) = 0.05, p > 0.05$ , suggesting both groups had equal levels of acquisition. During extinction (figure 2), where the compound conditioned reinforcer and primary food reinforcers were withheld, the NBM lesion group made significantly more responses than controls  $F(2,59) = 28.81, p < .001$ . The higher level of responding observed in the NBM lesion group during early extinction trials contributed to a group by extinction day interaction effect  $F(2,59) = 4.69, p < .05$ , although both groups demonstrated extinction over the three days of testing  $F(1,59) = 22.83, p$

$< .001$ . During reinstatement testing (figure 2), the NBM lesion group showed greater levels of cue-induced reinstatement than controls  $F(1,39) = 4.75, p < .05$ .

## Discussion

NBM lesions caused an increase in operant responding associated with an apparent increase in the effective reward magnitude of sucrose reinforcement during all stages of the reinstatement paradigm (VR5 acquisition, extinction, and cue-induced reinstatement). These results support our original hypothesis of an increased reinstatement effect following NBM cholinergic lesions, and additionally demonstrate an exaggerated response to sucrose reward both during acquisition on

**Figure 2.** Total number of bar-presses made during the cue-induced reinstatement protocol in the control and NBM lesion groups. Across acquisition in the VR5 task (A1-A5), the NBM lesion group made more bar-presses than the controls ( $* p < .05$ ). By the end of VR5 acquisition (A5), however, NBM lesion and control groups did not differ in operant output (inset: one-way ANOVA  $p > .05$ ). During extinction (E1-E3), where the compound conditioned reinforcer and primary food reinforcers were withheld, the NBM lesion group made significantly more responses than controls ( $*** p < .001$ ). The higher level of responding observed in the NBM lesion group during early extinction trials contributed to a group by extinction day interaction effect ( $\# p < .05$ ), although both groups demonstrated extinction over the three days of testing ( $\#\#\#$  within-subjects difference  $p < .001$ ). During reinstatement testing (R1-R2), the NBM lesion group showed greater levels of cue-induced reinstatement than controls ( $* p < .05$ ), with the greatest between-group difference occurring on the first day of reinstatement (R1).





the VR5 schedule and during extinction of the operant response. Findings suggest that cholinergic interactions within the dopamine reward system may play a significant role in the processes associated with drug seeking and drug addiction, where decreased cortical cholinergic tone may cause an exaggerated dopamine response to rewarding stimuli. In addition to the role of the dopaminergic ventral tegmental area and the nucleus accumbens involvement in reward processes, interactions between this dopamine reward pathway and the cholinergic NBM appear to exert a significant influence on the processes of reward seeking behavior.

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“Swiftly the brain becomes an enchanted loom, where millions of flashing shuttles weave a dissolving pattern – always a meaningful pattern – though never an abiding one.”

— Charles Sherrington



# Book Reviews

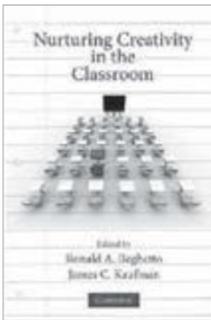
In this edition of the *Psychology Student Research Journal*, we are featuring a diverse collection of valuable psychology books that have been reviewed by Dr. Robert Ricco (Psychology Department Chair). We would like to thank Dr. Ricco for contributing to our journal in this way, and we hope that students find great value within the pages of these books.

## Nurturing Creativity in the Classroom

Beghetto, R.A. and Kaufman, J.C. (2010)

Cambridge, UK: Cambridge University Press.

This wonderful collection of essays provides much to think about regarding the psychological processes underlying creativity, and the importance of creativity to learning and development. In the process, it supplies educators with plausible ways to foster creativity within a public education system that affords little opportunity for divergence, either in students or teachers. Rigorous, evidence-based, and groundbreaking, this book helps us to appreciate the pitfalls of curricula that are too closely tied to accountability and standardization. Beghetto, Kaufman, and a host of leading figures in the field have provided



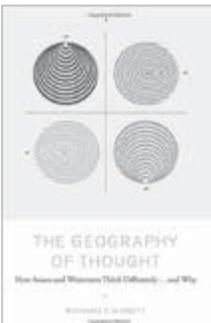
a wealth of ideas for teachers to consider and try out in their classrooms. This book represents a striking example of how research and practice in the field of education can, and should, go hand in hand.

## The Geography of Thought: How Asians and Westerners Think Differently ... and Why.

Nisbett, R.E. (2003)

New York: Simon and Schuster.

Have you ever wondered whether cultural values, social practices, and natural language influence not merely WHAT we think, but HOW we think? Richard Nisbett has spent a significant part of his career considering this question. In this very readable book, he presents a host of findings suggesting that there are non-trivial differences in the cognitive processes of Easterners and Westerners, and that these derive from broad differences in cultural value systems and ecologies and from specific



differences in educational and socialization practices. From perceptual attention to categorization and even

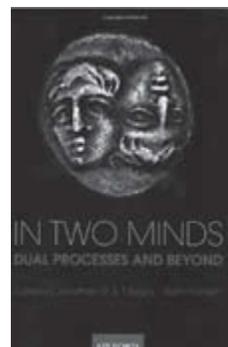
reasoning, Nisbett argues for substantial cultural influence on cognition. Perhaps surprisingly, he does not see language as a profound shaper of thought, but for a powerful argument that our native language influences the way we view the world, see Guy Deutcher's "Through the Language Glass: Why the World Looks Different in Other Languages."

## In Two Minds: Dual Processes and Beyond

Evans, J., and Frankish, K. (2009).

Oxford, UK: Oxford University Press (2009).

This collection of essays from some of the biggest names in the psychology of reasoning presents a rich and varied discussion of an especially important metatheory in cognitive psychology today – the dual process or dual systems perspective. In this view, human thinking consists of two distinct, though interacting, systems. What is typically described as heuristic, autonomous, or intuitive thinking is relatively automatic, effortless, and non-conscious, making few demands on processing capacity and attentional resources. This is our default system. In contrast, analytic, reflective



thinking is intentional, deliberative, conscious, and effortful, placing significant demands on mental resources. This is an override system. Evans, Frankish, and their colleagues show how a dual process perspective can offer plausible answers to a number of 'big questions' in the study of human cognition, including how higher order cognitive processes evolved, whether we are basically rational or irrational beings, and why children can appear smarter than adults. These discussions also make clear the limitations of this perspective and the challenges it faces from adherents of single system accounts.



# The Facebook Motivation Likert Scale

## Authors

**Leslie Hagen, Karen Grab, Kim French, and Eric Leake**

*California State University, San Bernardino*

## Abstract

With more than 800 million active users worldwide, Facebook has been established as the default option for social networking (Facebook, 2011). However, few psychometrically-sound measures of Facebook usage motivation currently exist. Therefore, the authors examined the factor structure of the motivations for Facebook use by creating the Facebook Motivation Likert (FML) scale, a newly developed scale that measures the various dimensions that motivate Facebook usage. Results from a sample of 280 respondents support a five factor model of motivation to use Facebook. Results indicate that Facebook users utilize the site for procrastination, relaxation, entertainment/information sharing, active socialization, and passive socialization. Additionally, these motivations are significantly related to time spent on Facebook, number of Facebook friends, and active engagement on Facebook.

## The Facebook Motivation Likert Scale

With more than 800 million active users, Facebook has been established as the default option for people to interact with friends, connect with groups, or seek out entertainment or information (Facebook, 2011). Facebook was founded in 2004 to help people build their social networks. After many years of steady growth, 50% of Facebook users are motivated to log on to Facebook every day. In this study, a measure was developed and tested to explore individuals' motivations to use Facebook.

Several researchers have acknowledged the importance of studying social motivations for Facebook use and have incorporated social motivations into established social media motivation scales (Ellison, Steinfeld, & Lampe, 2007; Papachrissi & Rubin, 2000; Subrahmanyam, Reich, Waechter, & Espinoza, 2008). However, these scales are often different from one another in terms of how they group the social functions or motivations for Facebook use,



## Author Interview

Leslie Hagen

**What are you majoring in?** I am majoring in Industrial/Organizational Psychology.

**What year are you in school?** I am a 2nd year graduate student.

**Which professors (if any) have helped you in your research?** Dr. Ken Shultz.

**What are your research interests?** The impact of technology in the workplace, especially in older populations.

**What are your plans after earning your degree?** I plan to work as a statistician for a human resources or marketing consulting firm.

**What is your ultimate career goal?** Ultimately, I plan to work as an independent consultant.



thereby creating different measurement categories for similar constructs and making social motivation difficult to compare (e.g. Joinson, 2008; Papachrissi & Rubin, 2000; Wise, Alhabash, & Park, 2010).

The current study seeks to rectify this situation by using a novel factorization of Facebook social motivation: active and passive social motivation. While previous researchers have not yet framed social motivation solely in terms of these two facets, there have been constructs and items created (Joinson, 2008) that touch upon these concepts. However, we feel that this model helps to simplify previous research by combining similar constructs into a single factor. Active social motivation is when individuals are motivated to log onto Facebook to communicate with online friends through interactive mediums such as commenting, liking, messaging, poking, joining groups, and sending friend requests (Subrahmanyam et al., 2008). Passive social motivation is when individuals are motivated to log onto Facebook to find out information about friends' activities and interactions by browsing profiles, walls, pictures, and events without initiating direct communication.

Relaxation is another potential motivation for Facebook usage. Relaxation will be defined here as reduction in an individual's level of stress or anxiety. A number of studies have measured relaxation as a motivation for internet use (Morahan-Martin & Schumacher, 2003; Papacharissi & Rubin, 2000; Sun et al., 2008) or as a potential need fulfilled by internet usage (Flanagin & Metzger, 2001). Studies like these have demonstrated that relaxation can be a meaningful motivation for internet use, and there is a need for further investigation into relaxation as a motivation in similar contexts - such as Facebook usage.

Facebook also provides an immediate alternative to engaging in another task that needs to be completed (Lavoie and Pychyl, 2001). In other words, Facebook provides a platform to procrastinate through social interaction, games, music, and constant updates. Procrastination may be a necessary evil in a fast paced world with many obligations; people simply aren't always consistently motivated to fulfill their duties, and Facebook presents an ever-present opportunity for slacking. We intend for the FML Scale to measure the extent to which Facebook is used to encourage procrastination behaviors.

Additionally, we theorized that people will use Facebook as a method to entertain themselves and share information with others. Lin and Lu (2011) found that individuals will spend more time and attention on a social networking site when they have the abil-

ity to share photos, films, weblogs, and links in their profile. Additionally, Baek, Holton, Harp and Yaschur (2011) found that individuals were willing to share links as a motivation to satisfy their desire for gratification and enhancement in the eyes of their socially constructed communities. Based on these studies and others, we theorize that entertainment/information sharing and seeking will be a driving motivational factor for some individuals to use Facebook above the need to socialize, procrastinate, and relax.

The Facebook Intensity Scale was created by Ellison, Steinfield, and Lampe (2007) to measure the intensity of individuals' Facebook usage beyond just duration and frequency. The measure consists of eight items that look at number of Facebook friends, typical amount of time spent using Facebook daily, attitudes and emotional connectedness to Facebook, and how integrated Facebook is into individuals' everyday lives. We hypothesized that scores on this existing Facebook Intensity Scale should relate to scores on the new FML Scale, because we theorized that individuals with higher motivation to use Facebook are likely to use Facebook more and have higher intensity with regards to their Facebook attitudes and usage.

### **Current Study**

The current study focused on developing and validating a measure of Facebook motivation. We defined Facebook motivation as the driving force that initiates and perpetuates Facebook use. The measure developed in this study utilized previous measures to create a new factorization model of Facebook motivation with five facets: active socialization, passive socialization, procrastination, relaxation, and entertainment/information sharing. Because this was the development of a new measure, this study was exploratory in nature and guided by a primary research question: Do active socialization, passive socialization, relaxation, procrastination, and entertainment/information sharing serve as meaningful and distinct motives for Facebook usage? The psychometric properties of this scale were evaluated, including reliability, factor structure, and validity, to help adequately address this question.

## **Part One: Item Development and Construct Validation**

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### **Method and Results**

We developed an initial pool of fifty-nine items using a rational approach. Items were independently developed by the participating researchers for each sub-dimension of the scale: procrastination (10 items),



**Table 2.1.** FML final 29 item rotated factor loadings.\*

Factor Items	Factor Loadings**				
	1	2	3	4	5
<b>Factor 1 – Relaxation</b>					
1. I use Facebook to unwind after thinking about work.	.795	.110	-.099	-.029	-.060
2. After a stressful day, I like to use Facebook.	.760	.071	.078	.027	.027
3. Facebook helps me to feel better when I'm feeling stressed.	.719	-.152	.160	.116	-.079
4. Facebook helps me relax.	.673	-.205	.122	.149	.070
5. Facebook is a pleasant rest.	.663	-.051	.173	.086	-.020
6. I use Facebook to unwind after doing work.	.597	.170	-.076	-.057	.196
<b>Factor 2 – Procrastination</b>					
1. I use Facebook to avoid tasks for school.	-.122	.806	.071	.051	.003
2. I use Facebook to delay doing things I don't want to do.	.056	.770	-.137	.050	-.015
3. I use Facebook when I should be doing something else.	-.008	.758	.021	-.032	.125
4. I find myself distracted by Facebook.	.063	.708	-.154	.034	.013
5. I use Facebook to avoid tasks at work.	-.056	.664	.172	.040	-.043
6. Facebook keeps me from completing other tasks.	.131	.603	.122	.045	-.059
<b>Factor 3 – Entertainment/Information Sharing</b>					
1. I log into Facebook to go searching for newer applications.	-.015	-.040	.880	.007	-.126
2. I log into Facebook and the first thing I do is go to an application.	-.004	.021	.852	-.015	-.084
3. I log into Facebook to view application updates on my news feed.	.119	.037	.731	-.163	.081
4. I log into Facebook to use the gaming applications.	-.005	.091	.717	-.013	-.012
5. I log into Facebook to use the non-game applications.	.092	.034	.583	-.006	.101
6. I use Facebook to use it as a tool to share links to other websites.	-.023	-.005	.433	.132	-.026
7. I log into Facebook to get feedback on information I have found.	.069	-.095	.424	.233	.112
<b>Factor 4 – Passive Social</b>					
1. I use Facebook because it is easier to get information about people's lives.	.082	.070	-.063	.678	-.049
2. I use Facebook to virtual people watch.	-.060	.065	.040	.613	-.015
3. I use Facebook to see what people have put as their 'status'.	.173	.149	-.069	.577	.139
4. I use Facebook to hear what people have to say.	.043	-.051	.060	.576	.114
5. I use Facebook to see what my friends have been up to today.	.048	-.034	-.068	.543	.305
6. I use Facebook to check out someone I met offline.	.015	.042	.088	.525	-.105
<b>Factor 5 – Active Social</b>					
1. I use Facebook to keep in touch with friends.	-.048	-.046	-.032	.062	.845
2. I use Facebook because it's an easy way to stay in touch with people.	-.108	.021	-.031	.011	.827
3. I use Facebook to contact people I haven't seen in a while.	.050	.012	.010	.169	.504
4. I use Facebook to communicate with family.	.118	.032	.052	-.093	.414



relaxation (10 items), entertainment (13 items), active socialization (15 items), and passive socialization (11 items). Some items were adapted and re-worded from previous computer and Facebook motivation scales (Baek et al., 2011; Ellison et al., 2007; Gülnar et al., 2011; Joinson, 2008; Papachrissi & Rubin, 2000; Sun et al., 2008), while others were developed based on literature and definitions discussed above.

To establish the content validity of our scale, each item was examined for overall quality, or how well each item fit the conceptual definition for the intended corresponding subscale. Acting as subject matter experts (SMEs), we evaluated each item on a five point scale (1 = extremely low overall quality; 5 = extremely high overall quality). The scores assigned for each item were then aggregated into a mean score, of which at least 3.5 or above was needed to retain the item. Intraclass correlation, which was used to establish inter-rater reliability, showed little consistency between SME ratings (ICC = .286,  $p < .001$ ). Due to the lack of consistency in SME ratings, a rational approach was used to further evaluate the items. The SME panel discussed each item in terms of relevancy, frequency, and quality; the SMEs also revised construct definitions for clarity. Some items that were identified as high quality by some SMEs with means lower than 3.5 were revised by the group to increase its quality. In some cases, items were eliminated and replaced with new items in order to have an adequate number for each dimension. These new items were not evaluated by the SMEs on the dimension of overall quality; instead, quality was determined through collaborative revisions rather than independent development. Additionally, some items with means higher than 3.5 were also removed due to a theoretical overlapping with another dimension. From the original 59 items, 21 were retained, 8 items were rephrased, and 5 items were added for a total measure of 34 items.

## Part Two: Internal and external validation

### Method

**Participants.** Participants' pool was focused on including individuals who were least 18 years old and active Facebook users. The initial sample obtained consisted of 321 participants. After screening the data, 41 responses were removed due to outliers, patterned responses, or missing data. Our final number of participants was 280. The mean age of our sample was 27.24 years and majority female (55.4%). The single largest ethnic group was Asian (38.9%), followed by Whites (27.9%), and Mexican-American/Hispanic/Latino (18.2%), with all other groups consisting of less than 5%. A majority of our sample had some college experience: 37.1% had a Bachelors' degree, 20.4% had an Associates' degree, 18.6% had some college experience, and 13.6% had a Master's degree. Of the participants used for analysis, 27.5% ( $n = 77$ ) were recruited through the CSUSB SONA website, and 72.5% ( $n = 203$ ) were recruited through Facebook.

**Procedure.** Adults who use Facebook were recruited through Facebook. A snowball sampling technique was used to recruit participants by sharing the survey on Facebook and asking others to pass on the survey. This recruitment method focused on attracting Facebook users and aimed to become increasingly more representative of the overall population of Facebook users as it was passed along. Undergraduate psychology students were also recruited from the CSUSB SONA and were given one credit of extra credit for participating. Once users were linked to the survey, they were provided an informed consent followed by the survey containing the FML Scale, the Facebook Intensity Scale, and the demographics questionnaire. At the conclusion of the study, participants were thanked and told more about the study.

**Table 2.2.** FML final 29-item factor correlation matrix.

Factor	1	2	3	4	5
1 – Relaxation	-				
2 – Procrastination	.165	-			
3 – Entertainment/ Information Sharing	.373	.023	-		
4 – Passive Social	.323	.184	.271	-	
5 – Active Social	.324	.089	-.057	.245	-



**Table 2.3.** Convergent and Concurrent Validity Coefficients of the FML Scale.

Factor	Convergent Validity	Concurrent Validity	
	Facebook Intensity Scale	Number of Facebook friends	Time spent on Facebook
<i>Procrastination</i>	.343**	.241**	.398**
<i>Relaxation</i>	.624**	.030	.350**
<i>Active Socialization</i>	.371**	.209**	.155**
<i>Passive Socialization</i>	.491**	.120*	.242**
<i>Entertainment/Information Sharing</i>	.396**	-.135*	.220**
<i>FML Total</i>	.714**	.137*	.456**

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

**Measures**

**Facebook Motivation Likert Scale.** The 34 Likert-scale items (1= strongly disagree, 5 = strongly agree) retained from the SME ratings were intended to measure the Facebook motivation facets of socialization (active and passive), relaxation, procrastination, and entertainment/information sharing, as well as overall motivation to use Facebook. The results section describes how and why some of those items were removed to reach a final FML Scale of 29 items.

**Facebook Intensity Scale.** The Facebook Intensity Scale (8 items) was created to measure individuals' level of active engagement with Facebook. The creators of the scale, Ellison et al. (2007), reported a good level of internal consistency for this scale ( $\alpha = .83$ ). The present study found an acceptable internal consistency ( $\alpha = .75$ ).

**Results**

To examine the factor structure of the FML Scale, we analyzed the data using the exploratory factor analysis function using SPSS version 19. We also analyzed convergent validity by correlating total score on the FML Scale with scores from Ellison et al.'s (2007) Facebook Intensity Scale. Prior to analysis, the data was screened and cleaned as described in the methods portion of this paper.

Principal axis factoring extraction with direct oblimin rotation was performed using SPSS on the 34 items developed during the first content-validation study. Five factors were extracted based on the conceptual framework of the measure established in the content validation study, as well as the eigenvalues, scree plot,

and variance explained by each factor. Communality values ranged from .24 to .79, indicating shared variance among items, yet not enough shared variance to raise concerns about multicollinearity. Factor loadings were examined for cross-loadings and conceptual clarity. The five factors were consistent with the factors derived from the content-validation study: relaxation (6 items), procrastination (6 items), active social (4 items), passive social (6 items), and entertainment/information sharing (7 items). After removing cross-loaded and inconsistent items, the final scale consisted of 29 total items; factor loadings are presented in Table 2.1. The internal consistency of the 29-item scale, as a whole, was good ( $\alpha = .87$ ). The internal consistency for each subscale reached acceptable levels (active socialization,  $\alpha = .73$ ; passive socialization,  $\alpha = .78$ ; relaxation,  $\alpha = .88$ ; procrastination,  $\alpha = .87$ ; entertainment/information sharing,  $\alpha = .85$ ). The final eigenvalues for each factor were above 1.5, and the combined factors explained a total of 52.02% variance; these criteria meet acceptable factor standards (Tabachnick & Fidel, 2007), and are not practically different from the former 34 item measure.

The factor correlation matrix for the final 29 item measure is presented in Table 2.2. As expected, many factors are moderately correlated with one another. Interestingly, procrastination did not correlate with both the active social and entertainment/information sharing factors ( $r = .089$  and  $r = .023$ , respectively). The active social factor was also unrelated to the entertainment/information sharing factor ( $r = -.057$ ).

Convergent validity for the FML Scale was examined by correlating total score on the FML Scale with a total



score from the Facebook Intensity Scale. The FML Scale was positively correlated with the Facebook Intensity Scale ( $r = .714, p > .001$ ). The factors of the FML Scale also correlated significantly and positively with the Facebook Intensity Scale (Table 2.3). The concurrent validity of the FML Scale was also studied to see how motivations to use Facebook related to practical outcomes. There was a significant, positive correlation between the FML Scale and time spent on Facebook ( $r = .456, p < .001$ ). This relationship was also consistently positive and significant for the dimensions of the FML Scale. There was also a significant, positive correlation between the FML Scale and number of friends a user had on Facebook ( $r = .137, p = .022$ ). This relationship was positive and significant only for the socialization and procrastination dimensions. The entertainment/information sharing dimension was significantly negatively related to the number of friends, and relaxation was not significant. The validity coefficients for the concurrent validity of the FML Scale are presented in Table 2.3.

### Discussion

The present research used previous literature and measures to develop a new measure of Facebook motivation, the Facebook Motivation Likert (FML) Scale. The results of the content SME ratings as well as the factor analysis supported the proposed five factor structure. Specifically, the results of the factor analysis revealed a stable and simple structure, with only 5 of 34 original items deleted due to cross loadings or conceptual inconsistency.

Interestingly, the active socialization facet was unrelated to the procrastination and entertainment/information sharing facet, and the procrastination facet was also unrelated to the entertainment/information sharing facet. These results reflect some orthogonality in Facebook motivation – individuals who primarily use Facebook for socialization purposes are unlikely to use it for entertainment/information sharing or procrastination purposes. Additionally, individuals who primarily log onto Facebook for entertainment/information sharing purposes do not wish to socialize or procrastinate, but to use Facebook to access games and applications.

The relationship between the FML Scale and the Facebook Intensity Scale provides evidence for the criterion validity of the FML Scale, as there was a large correlation between the FML Scale and the Facebook Intensity Scale. Since motivations play a part in behaviors, the significant relationship between the two scales demonstrates that the FML Scale is measuring motivation to use Facebook.

The concurrent validity of the FML Scale was analyzed by comparing FML Scale scores with time spent on Facebook and the number of friends an individual had on Facebook. The relationship between the FML Scale and the time an individual spends on Facebook was large and supports the concurrent validity of the measure. Specifically, the factors that represented motivations to relax or procrastinate had the largest correlations with time spent on Facebook. These results reveal motivation to use Facebook may be primarily driven by the desire to avoid other tasks or to take a break from other tasks – not only to socialize or be entertained. The relationship between the FML Scale and the number of friends an individual had on Facebook was small but significant, particularly for the socialization and procrastination scales. It is likely that these motivations to use Facebook increased the likelihood of adding Facebook friends.

### Limitations/Recommendations

While this study provides support for the proposed scales of Facebook motivation, there were some limitations. No pilot study was conducted with the items prior to the exploratory investigation. This issue is particularly problematic given the low inter-rater reliability between item quality SME ratings. A pilot study of the initial items might have improved our evaluations of items and allowed us to create more, higher quality items. Also, by using a convenience sample instead of a random sample of Facebook users, the results of our study potentially led to an underrepresentation of the Facebook user population.

In addition to these limitations, the creators of the Facebook Intensity Scale (Ellison et al., 2007) did not discuss their process of scale creation or psychometric characteristics beyond internal consistency. Although this scale appeared to have face validity, if the Facebook Intensity Scale is not a valid measure of frequency and intensity of Facebook use, this could limit our inferences regarding validity for the FML Scale.

Additional research should be conducted to elaborate on several unhyposthesized findings. First, future research should be conducted on the relationship between the entertainment/information sharing, active socialization, and procrastination scales. These factors demonstrated orthogonality in this study. Future research should also investigate the links between these factors and possible moderators explaining differences in Facebook motivation.

Despite the limitations of this study, we expanded on the current literature on motivations to use social networking. Currently, there are few psychometrically-



sound measures of Facebook usage motivation that exist. We contributed to the literature by creating a new measure that was built off previous research and compared to a similar scale. As social networking usage continues to rise, measures such as the FML scale will be instrumental to understanding the motivations behind social networking use and will be a valuable tool for researchers working in this area.

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"Right now, with social networks and other tools on the Internet, all of these 500 million people have a way to say what they're thinking and have their voice be heard."

—Mark Zuckerberg



# Understanding the Association of Nonverbal Cues and Environmental Factors with Patient Retention in Mental Healthcare

## Authors

**Tessy T. Pumacchua**

*Center for Multicultural Mental Health – Cambridge Health Alliance – Harvard Medical School*

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This paper was written as part of a summer research project completed at Harvard Medical School.

## Abstract

In the medical field, nonverbal communication and patient-provider rapport have been associated as important factors of patient satisfaction. Similarly, the effects of rapport have shown to be related to patient retention in the field of drug abuse therapy; however, the effect of nonverbal communication and rapport have not been specifically investigated within the field of mental health. This study used a mixed methods approach on 41 videotaped psychological intake interviews to explore the effects of nonverbal communication, environment, and rapport on patient retention in the mental health setting. Both an observational approach to code behaviors as well as theme generation from notes taken during observations were used. The resulting measures were analyzed via Bivariate Spearman correlations, cross tabulations, and statistical significance was assessed via the Fisher's exact test. Results indicate a positive relationship between levels of rapport and retention. Additionally, computer note taking, the setting where the intake takes places, as well as other provider-behaviors were found to affect patient retention.



## Author Interview

Tessy Pumacchua

**What are you majoring in?** I am majoring in Child Development.

**What year are you in school?** I am a 1st year graduate student.

## Which professors (if any) have helped you in your research?

For this specific project, Dr. Norah Mulvaney-Day and Dr. Margarita Alegria from the Center for Multicultural Mental Health Research have helped me tremendously in the development and successful completion of this project. However, the opportunity to work with these two investigators would not have been possible without the assistance from the CSUSB Minority Access to Research Careers, as well as the Harvard Catalyst Translational Research Summer Program. Aside from this project, several other professors have played a key role in my continuous development as a researcher. These professors are: Dr. James C. Kaufman, Dr. Eugene Wong, Dr. Sanders McDougall, Dr. Mark Agars, and Dr. Kelly Campbell from the CSUSB Psychology Department.

**What are your research interests?** Specifically, I am very keen to understand the developmental precursors of personality problems in children of parents with personality disorders. However, more broadly speaking, my other areas of interest are attachment, academic achievement, creativity, multicultural psychology, and of course developmental psychopathology.

## What are your plans after earning your degree?

I plan to obtain a doctoral degree in Developmental or Clinical Psychology.

**What is your ultimate career goal?** I would like to teach at a CSU! However, my main focus is on research. I would like to make a significant contribution to the field of developmental psychopathology.

## Anything else relevant you would like us to include?

I would just like to once again thank the CSUSB Minority Access to Research Careers, as well as the Ronald E. McNair program. Without their help, none of this would have been possible.



## **Understanding the Association of Nonverbal Cues and Environmental Factors with Patient Retention in Mental Healthcare**

There are many difficulties with improving health care outcomes. To begin, the healthcare system is complex and contains several logistical barriers. Secondly, in general, there appears to be a poor relationship between the patient and provider (Jacobs, 2002). However, despite these obstacles, improved physician conduct and interpersonal skills have been shown to result in better medical service outcomes. As suggested, the quality of providers' interpersonal skills can indeed affect their ability to communicate with their patients (Doyle & Ware, 1977; Fernandez, 2010; DiMatteo, 1994).

Nonverbal communication is one aspect of a provider's interpersonal skills that has been identified as an important component of interaction between patients and providers (DiMatteo & DiNicola, 1982). A current review of literature on nonverbal communication reveals that research within the medical field is limited. Existing research in this field has investigated a provider's skills (Girón, Manjón-Arce, Puerto-Barber, Sánchez-García, & Gómez-Beneyto, 1998; DiMatteo, Hays, & Prince 1986), the role of nonverbal sensitivity (Hall, Harrigan, & Rosenthal, 1995), and expressiveness between the patient and the provider (Mayo, 1979). The overall goal of these studies has focused on elucidating providers' behaviors which foster positive evaluations from patients (Hall, Harrigan, & Rosenthal 1995). While the current research is limited in scope, it does suggest that most nonverbal behaviors have a quadratic relationship with patient perceptions. In other words, too much or too little can be conceived as equally negative (Hall, Harrigan, & Rosenthal 1995).

Although nonverbal communication is a very specific type of interaction, research findings on short 30-second clips suggest that nonverbal behaviors are noticeable even after brief exposure (Ambady & Rosenthal 1993). Research demonstrates that information related to anxiety, interest, openness, and trust can be quickly communicated (Ishikawa, Hashimoto, Kinoshita, Fujimori, Shimizu, & Yano, 2006). Other studies have found that certain aspects of the physical environment can affect interpersonal communication (McGrath, Arar, & Pugh, 2007). These studies suggest that an investigation of nonverbal behaviors by using analyses of brief video clips has a practical foundation. The focus of our current study is to explore the relationship of providers' nonverbal behaviors and environmental factors within the psychological intake context.

## ***Nonverbal Communication and Mental Health***

While the effects of nonverbal behavior and environment have been studied in the medical setting, less research on these factors has been conducted in the field of mental health. Mental health practitioners treat serious conditions including psychosis, suicidal ideation, and serious character pathologies. Mental health treatment is marked by low rates of return among patients, although improved quality of care can lead to greater retention (Alegria, Atkins, Farmer, Slaton & Stelk, 2010). Research to better understand the relationship between nonverbal behaviors and patient retention in mental health care has been increasing. A study by Bedi (2006) concluded that among 11 types of body language, nonverbal gestures are most important for building clinical alliance. In a related study by Marci and Orr (2006), the effects of emotional sensitivity and response through eye contact on perceived empathy were measured. In one condition, clinicians were trained to respond to verbal and emotional cues presented to outpatients from a psychiatric hospital. In the other condition, clinicians were trained not to react to verbal or emotional cues and to avert eye contact. The results indicated that a simple shift in eye contact and attention could result in lower perceptions of empathy. Another relevant study examined the relationship between verbal and nonverbal behaviors and psychodiagnostic abilities (i.e., ability to make accurate diagnosis) (Girón, et. al 1998). The results of the study showed that greater eye contact and increased face-to-face posture were significant nonverbal predictors of good psychodiagnostic ability, while greater note taking was associated with lower levels of psychodiagnostic ability.

## ***Findings on rapport within the mental health field***

Another focus of nonverbal communication in the mental health field is the notion of established rapport between the patient and provider. Rapport has been linked with patient satisfaction, treatment compliance, and improved service outcomes (Leach, 2005; Hall, Harrigan, & Rosenthal 1995). While there is a debate on the exact definition of rapport, it is generally agreed that rapport is the quality of interaction, level of mutual understanding, and synchrony of behaviors between patient and provider (Tickle-Degnen & Rosenthal, 1990). Rapport is difficult to measure due to its complexity as a construct; however, it is typically measured through observation of emotional synchrony of behavior, sensitivity, and warmth (Duncan, 1990; Hall, Roter, Blanch & Frankel, 2009). A meta-analysis on aspects of rapport revealed that



nonverbal behaviors, such as smiling, head nodding, and forward leaning, are predictors of behavioral synchrony (Tickle-Degnen, Rosenthal, & Harrigan, 1989). Additionally, research on the subject of substance abuse has demonstrated that lower levels of rapport and clinical alliance result in low treatment completion rates (Joe, Simpson, Dansereau, & Rowan-Szal, 2001; Petry & Bickel, 1999; Kupprata, Daytona, Guschlbauer, & Halkitisb, 2009). Although the connection between rapport and patient retention has been investigated in the field of substance abuse (Petry & Bickel, 1999; Joe, et al., 2001), this relationship has not been fully investigated in context of general mental health.

### **Environmental factors affecting patient-provider communication within the medical setting**

**Impact of computer placement.** Another important factor that influences communication between a patient and provider is the environment in which the interview occurs (Hall, Harrigan, & Rosenthal 1995). In an experimental study, healthcare providers' nonverbal positioning and eye contact were manipulated by placement of a computer in three different conditions (McGrath, Arar, & Pugh 2007). The resulting patterns of computer use demonstrated differences in physical orientation and eye contact. Skilled physicians were able to maintain conversations with clients while accessing the computers, and physicians in the first condition (this group had the computer placed in a manner so that physicians could see both the patient and the computer) had the greatest amount of eye contact and face-to-face posture. However, less-skilled physicians were unable to maintain conversations, which prompted at least one client to comment on a physician's "fixation" on the computer. A similar result was found among clinicians with excessive note taking (Girón, Manjón-Arce, Puerto-Barber, Sánchez-García, & Gómez-Beneyto, 1998). These results show that nonverbal behaviors, such as eye contact and body positioning, can be affected by the placement of tools in the environment.

### **Purpose of the study**

A paucity of research has investigated the relationship of nonverbal communication and rapport with patient retention in the mental health setting, which is the focus of this study. By using an observational approach, qualitative factors associated with rapport will be identified and categorized. Similar procedures have been used to identify components of clinical alliance (Bedi, 2006). The overall objective of this study is to explore the relationship of providers' nonverbal behavior and environmental factors with

patient retention in the mental health setting. Specifically, the goal of the analyses is to explore the effects as well as the interaction of providers' eye contact and patient-provider rapport on patient retention.

## **Methods**

### **Participants**

For this analysis, a series of videotaped psychological intakes (n= 47) were randomly selected from a sample of 129 videotaped mental health intakes conducted in eight mental health clinics; indicators of nonverbal communication, environment, and rapport were coded. The proportions of videotapes from each of the six clinics ranged from 30-40% per clinic. For the purposes of this study, no demographic information from patients or providers was considered (for a review on patient-provider characteristics and race concordance, see Cooper & Powe, 2004). The providers in this subsample included eight psychologists (20%), sixteen psychiatrists (39%), fourteen social workers (34%), and three nurses (7%). Consent from patients was obtained in a written format, and Institutional Review Boards at each clinic approved the study prior to data collection. Six cases were dropped from analysis due to absence of video or audio without video, yielding a final total of 41 videotaped initial psychological intakes for analysis.

### **Measures**

**Coding for environmental factors and non-verbal communication.** The development of a coding system for environmental and non-verbal communication variables was executed in a mixed methods fashion via both quantitative and qualitative approaches. Variables were selected based on theories and empirical studies from the literature reviews (e.g., Hall, 1995), as well as qualitatively by the investigators based on their perceived potential effect on the patient-provider relationship. The main categories that were explored included: environmental noise, physical objects in a setting, patient and provider awareness of being recorded, potential distractions (e.g., taking notes), positioning and distance, patient and provider eye contact patterns, providers' behaviors during computer access, and perceived rapport. We further characterize patterns of changes in provider eye contact over two time segments as follows: no change, low eye contact group; no change, high eye contact group; increase; and decrease. To assess reliability of the quantitative variables, four cases were double-coded by an independent coder and compared. We obtained a 79% agreement between the independent coder and the primary investigator's coding.



### **Patient – Provider Encounter Study variables.**

Two separate outcome indicator variables of retention were used in this analysis. The first variable was a patient's answer to the question "do you think you will come back?" The second variable was the patient's actual retention, which was determined by whether or not patients returned for the second appointment. This was collected through contact with the administrative staff in order to evaluate retention rates following the intake.

**Indicators and coding of rapport.** Indicators of rapport were extracted from the notes field on all 41 cases. Appendix 1 shows a list of the most salient indicators. Although this data was initially collected in a qualitative manner, a later review of literature supported most indicators (Bedi, 2006; Hall & Rosenthal, 1995; DiMatteo, Taranta, Friedman, & Prince, 1980; Rosenthal, Vannicelli, & Blanck, 1984; Hall, Roter, & Rand, 1981; Fernandez, 2010; Marci & Orr, 2006; McGrath et al., 2007; Giron et al., 1998; Maguire & Pitceantly, 2002). Following the identification of indicators, each case was assigned a level of rapport value (1 = poor rapport, 2 = moderate, 3 = good, 4 = excellent) by the investigator, who was a Hispanic female with previous training in psychology.

Additionally, we performed a sensitivity analysis of the rapport measures with two independent coders and double-coded all 41 videos. Coder 1 was a Caucasian male with previous training in psychology and coded all English-speaking videos ( $n = 27$ ); coder 2 was a Hispanic female with no previous training in psychology and coded all remaining Spanish-speaking videos ( $n = 14$ ). We saw the same trends arise with Coder 1 and the primary investigator's rapport coding and its relationship with retention. Further, when performing a Spearman's rho correlation between Coder 1 and the primary investigator's coding, we observed a positive relationship ( $r = .543$ ,  $n = 27$ ,  $p = .003$ ). We did not observe the same relationship between Coder 2 and the primary investigator.

### **Procedure**

The initial Patient Provider Encounter Study (Alegria, Nakash, & Lapatin, 2008), from which our data originates, was conducted between March 2006 and March 2008. All patients were told the study aimed to "understand how patients and doctors arrive at a mental health diagnosis," while providers were told that the study aimed to "learn about your experiences with diagnostic interviews." After obtaining consent from patients and providers, research personnel placed a camera inside the intake room for the duration of the session (no research personnel

were present during the session). Upon completion, the camera was removed, and the patient and provider were separately given a semi-structured post-diagnostic research interview. These in-depth interviews were audio taped and later transcribed.

Three 5-minute segments throughout the intake were selected for analysis, for a total of 15 minutes of video per intake. The videos ranged from 30 to 80 minutes in length. The first segment was composed of the first five minutes of the psychological intake, defined as when the provider and patient had their first interaction (e.g., provider talked with the patient). The timing for the start of the second segment was determined by subtracting the start time of the intake from the exact end time and dividing it in half. Finally, the last five minutes of the intake composed the third segment.

### **Data analyses**

The relationship between all non-verbal and environmental variables with patient retention was examined via cross-tabulations. Secondly, the association between rapport and patient retention was examined by the use of a Bivariate Spearman correlation, as well as cross-tabulations. Lastly, to examine the interaction between rapport and provider eye contact on patient retention, we looked at the cross-tabulation between patterns of change in provider eye contact from segment two to segment three and patient retention within low and high rapport groups separately. Fisher's exact test was used to assess statistical significance.

## **Results**

Provider acknowledgment of the video camera was significantly associated with higher patient retention. If a provider spoke about the camera with the aim of making the patient feel at ease (e.g., "let's ignore the camera;" "let me know if you feel uncomfortable at any moment and we can stop recording"), patients were more likely to return for care. While the presence of computers in the intake setting did not appear to affect retention rates, retention was lower when providers took notes using the computer rather than using paper. Moreover, providers who fixated on the computer screen had lower retention rates. Further, providers who used the computer and did not smile were marginally associated with lower retention rates.

Location of interview was also marginally associated with higher retention in patients who were interviewed in an interview room rather than in an office. Although we did not see an association between provider eye contact and retention in time segment 1, we saw trends of increasing provider eye



contact and higher retention rates in segments two and three, although that association was only marginally significant in segment two. Our data showed a moderate positive correlation between rapport and patient retention, ( $r = .344, n = 41, p < .05$ ). However, in the high rapport group, there was no relationship between provider eye contact and retention. When

there is good patient-provider rapport, patients tend to return for care. On the contrary, when rapport is poor, there is a marginal significant association between provider eye contact and patient retention.

**Appendix 1.** *Indicators of rapport.*

<ol style="list-style-type: none"> <li>1. Appropriate (not excessive) use of “mm-hmm”, “of course”, “that makes sense” or indications that suggest the provider was listening and level of attentiveness (e.g., nodded, eye contact, body leaning forward).</li> <li>2. Provider and patient talked at the same speed</li> <li>3. The conversation seemed to flow naturally.</li> <li>4. Provider’s and patient’s tone suggested engagement.</li> <li>5. Positive demeanor of provider (e.g., understanding, warm, welcoming; not judgmental or critical).</li> <li>6. Provider rephrased statements to ensure understanding (e.g., provider engaged in active communication).</li> <li>7. Provider’s use of positive statements (e.g., “it is really good you came”).</li> <li>8. Provider gave appropriate level of feedback to patient.</li> <li>9. Overall perceived comfort of patient, comparing it from start to finish (e.g., patient appeared less emotionally distant).</li> <li>10. Patient appeared to be receptive to provider’s engagement efforts.</li> <li>11. The intake felt more as a conversation than an interview.</li> <li>12. Provider spoke in a sincere tone, and seemed to demonstrate genuine concern for patient.</li> </ol>	<ol style="list-style-type: none"> <li>13. Patient expressed her/his connection with provider (e.g., “I feel I can talk to you”, patient expressed gratitude or an eagerness to come back).</li> <li>14. Presence of patient or provider laughter.</li> <li>15. Provider was empathetic and listened well to the patient.</li> <li>16. If provider used a computer, whether she/he maintained eye contact with the patient by switching back and forth between typing and looking at the patient.</li> <li>17. If provider was writing notes on paper, whether she/he maintained eye contact with the patient by switching back and forth between writing notes and looking at the patient.</li> <li>18. Provider gave an adequate amount of eye contact throughout therapy (e.g., more than half the time).</li> <li>19. Provider asked the patient what the patient was looking for in a therapy session and whether it the intake matched the patient’s expectation.</li> <li>20. Patients seemed comfortable during sudden pauses (e.g., silence)</li> <li>21. Provider responded to emotionality of the patient (e.g., offering tissues and support if the patient starts crying).</li> <li>22. Provider did not appear distracted but rather focused and attentive to the patient (e.g., steady eye contact and signs of interest).</li> </ol>
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## Discussion

This study examined the association of providers' nonverbal behavior and environmental factors with patient retention in the mental health setting. We found that note-taking using paper was associated with higher retention, while note-taking using a computer was associated with lower retention. Previous studies have not compared the effects of types of note-taking behavior and retention; however, computer use during intake has been shown to negatively affect patient-provider relationships among novice providers (McGrath, Arar, & Pugh, 2007).

Another finding was the association between the setting where the intake takes place and retention rates. We saw that patients who were interviewed in an interview setting versus an office setting were more likely to return. Although both settings contained a table and chairs, the office space contained additional distracters, such as a computer and decorative objects. While the mere presence of a computer did not significantly effect retention rates, perhaps the combined effect of distractors present in the office setting explain the observed association of lower retention rates. Although this was only a marginal finding ( $p = .06$ ), it seems that providers who are less distracted while assessing their patients needs convey a stronger sense of rapport by comparison to providers who may become distracted by objects in their office.

Our study also revealed findings on the impact of provider eye contact on patient retention. We did not find an association between provider eye contact and retention in the beginning of the intake. The administrative activities that tend to take place during the first few minutes of an intake (e.g., paperwork) may interfere with establishing the patient-provider connection. However, the results suggest that nonverbal communication, such as eye contact, beyond the first few minutes of the intake, may be critical in improving patient retention. Additionally, patient-provider rapport and its relationship to patient retention were explored. Rapport and retention were shown to have a moderate positive relationship ( $r = .344$ ,  $n = 41$ ,  $p = .028$ ). The level of rapport also demonstrated a positive trend with retention. When rapport was poor or moderate, 44-50% of patients returned; conversely, when rapport was good or excellent, 81-85.7% of patients returned.

These findings on providers' level of eye contact in segments 2 and 3, as well as the findings on rapport, led to further exploration of the interaction between these two variables. For eye contact, we used the variable change in provider's eye contact from segments 2 to

3. Results demonstrated that within the low rapport group, providers who maintained low eye contact were associated with 0 % patient retention, in comparison to providers who maintained high levels of eye contact, who had 100% retention. In contrast, within the high rapport group, the quantity of eye contact did not matter as much as rapport. Little variability was present; overall, those within this group (i.e., low eye contact/high rapport) showed 92.3% retention.

A possible reason for this finding could be that the rapport between a patient and provider is more important than the effects of eye contact. Since rapport is a broader construct, it is assumed to account for more than the simpler construct of eye contact. Among the high rapport group, eye contact did not matter as much; those with low eye contact showed high retention rates, demonstrating that the connection of rapport between patient and provider is clearly an important factor. Additionally, among the low group, it would appear that if rapport cannot be provided, at the very least, providing more eye contact during the middle and end of the intake interview would be of benefit to patients.

### Limitations

There were several limitations to our study. First, our sample only consisted of 41 cases. Although this number is similar to past studies (e.g., Penner et al., 2007), our sample size was further reduced when we analyzed variables that had missing information. Second, we did not obtain very good inter-rater reliability for the rapport measure. Part of the reason could be due to the clinical research backgrounds of the coders. In our sensitivity analysis, we found similar patterns of results, which lend confidence to the idea that our findings may be robust against coder subjectivity. Lastly, we used a rapport measure that emerged from a qualitative analysis of our data, rather an established rapport measure. The construct of our rapport measure is consistent with the construct of other published measures of rapport (Joe et. al 2001; Hall, Roter, Blanch, & Frankel, 2009), but further research is required to establish the validity of our measure.

### Future studies

The limitations of our study give rise to many ideas for future investigation. The interaction between patient and providers' eye contact throughout the complete psychological intake was not explored in this study. A preliminary analysis suggested a positive correlation between the two; however, a more in-depth exploration of this relationship was beyond the scope of this



study. Lastly, our study only explored overall levels of rapport and its relationship to retention; it would be of interest to investigate the relationship between each of the individual indicators of rapport and patient retention to examine whether some rapport indicators are more predictive of patient retention.

### Implications

Despite the limitations of our study, the findings suggest that aspects of the intake environment, as well as providers' nonverbal communication, could affect patient retention and are worth further exploration. Rapport between patient and provider was significantly associated with patient retention, which highlights the importance of a provider's interpersonal skills. Further, it suggests that eye contact during the intake session, especially after the initial few minutes, could be crucial in improving the likelihood of patient retention, particularly in light of poor patient-provider rapport. The lack of association between a provider's specialty and patient retention suggests that patient retention has less to do with the provider's profession and more to do with patient-provider communication. It pushes us to consider the importance of incorporating communication training in the provider-training curriculum.

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*Understanding the Association of Nonverbal Cues and Environmental Factors with Patient Retention in Mental Healthcare*

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“Your vision will become clear only when you look into your heart.  
Who looks outside, dreams. Who looks inside, awakens.”

— Carl Jung



# Top 10 Unethical Psychological Experiments

*These studies are among many that indicate the power of the psychologist in their position of authority. Some of them show the darker side of human nature and its possible consequences, while others illustrate the vulnerabilities that we have and how they may be exploited. All of them demonstrate the need to police psychology and adhere to a standard of ethics in order to promote well-being and minimize harm.*

**10 The Monster Study (1939)**  
In Davenport, Iowa, Wendell Johnson conducted an experiment to prove his hypothesis that stuttering in children was not due to biological differences (as was believed at the time), but rather was due to the upbringing of the child. Twenty-two orphaned children were put into groups: one control group, where they received positive speech therapy and were praised, and an experimental group, where they were constantly criticized. Though there were stutterers and speech non-impaired children in both groups, those in the experimental group suffered negative psychological outcomes, and some even had speech problems throughout their lives. These children were used as a convenience sample, deceived as to the true nature of the experiment, never properly debriefed, and were not given any real follow-up care in order to reverse any negative effects. The experiment was never published because of fear of reprisal during the time when information of Nazi experimentation came to light, but in 2001, an investigative journalist brought the matter to light, and the University of Iowa formally apologized.

**9 The Aversion Project (1970s and 1980s)**  
In South Africa, homosexual soldiers were victimized in an effort to exterminate the homosexual presence from the army. Army psychiatrists and chaplains were used to identify those suspected of homosexuality and sent these soldiers to psychiatric units in order to 'cure' them. Those who were not 'cured' through drugs, shock treatment, aversion therapy, or hormone treatments were forced into experimental 'sex-change' operations and chemical castration. The exact number of victims is not known, but is estimated to be around 900; this includes some botched surgeries. Though there are documented cases of lesbian soldiers enduring this treatment, the targets seemed to be young white males.

**8 Stanford Prison Experiment (1971)**  
This study is included not because of its complete disregard of ethical standards, but rather because of its notoriety in the field of psychology. Zimbardo conducted this experiment in order to illustrate the power of the role and norms on behavior in the context of certain situations. Even he did not expect the magnitude of the results that he found. Students who were placed in either a guard role or prisoner role conformed to these so intensely that, even without specific instruction, they mirrored roles and behaviors seen in the problematic situations of today. Though the students knew they were free to leave the study at any time, they became so entrenched in their roles, they forgot all else. Both the guards and prisoners started to experience negative psychological outcomes, such as paranoia, depression, and learned helplessness...all in only a matter of five days.

**7 Monkey Drug Trials (1969)**  
Though there are many benefits to animal experimentation, there does need to be standards and ethical practices that apply to these experiments, as well. There are limits to what is acceptable, and a balance needs to be found between harm to the animals and benefits to humans. In this study, the investigators went far beyond the balance and entered into a realm of unnecessary animal cruelty. In order to determine the effects of drug use and addiction, monkeys and rats were trained to self-administer a wide assortment of drugs and then were left with a large supply of the drugs in order to determine what they would do. The animals suffered from a myriad of consequences: breaking their own arms trying to escape the cages, tearing off their fur, and even dying from overdoses. This experiment really illustrated that animal testing, like human testing, needed to have set limits, and that one could go too far and learn too little to justify such horrendous treatment.



## 6 Landis' Facial Expressions Experiment (1924)

At the University of Minnesota, an experiment was conducted in order to determine whether there were universal facial expressions for certain human emotions. Participants were taken to a lab and had lines drawn on their face to study their muscle movements. They were then subjected to various stimuli. The problem was with the last stimuli. Participants were given a live rat and told to decapitate it. A full third of them complied and their inexperience caused many of the animals to suffer. For those who refused to do so, the investigator did so in front of them. This experiment was a precursor to others about the power of authority on obedience and went far beyond the needs for the experiment that it was actually intended.

## 5 Little Albert (1920)

In another particularly famous study, Watson's intent was to determine the origins of fear. Little Albert, his subject, was allowed to play with a white mouse. He was then conditioned to be afraid of the white mouse using classical conditioning with a loud noise as a stimulus. His fear of the mouse, then the generalization of that fear, was observed. The most problematic aspect of this experiment was the lack of desensitization of this fear before Little Albert could leave the hospital.

## 4 Learned Helplessness (1965)

Three groups of dogs were used for this experiment; one group that was restrained and then released with nothing done to them, another group that was restrained and then subjected to electric shock which could be ended by pushing a lever, and the third group, which was restrained and submitted to electric shock that could not be ended by the dogs in any way. Eventually, the dogs in the third group experienced what is called "learned helplessness," where they had been taught that there was nothing that they could do to stop the pain; this group started showing symptoms of depression. When this group of dogs was later introduced to a situation where they could end electrical shocks by simply jumping out of the box, they did nothing.

## 3 Milgram Study (1974)

In a widely known study, Milgram set up an experiment where the participants thought they were administering electric shocks to another participant in order to promote learning. However, the "teachers" were the only true subjects in this experiment. They could only hear the "learner," but when the learner started making mistakes and complaining about the effect of the electric shocks they were receiving as punishment, the "teachers" would continue to administer said electric shocks at increasing increments at the encouragement of an authority figure. Many of the "teachers" did not stop until they reached the maximum level of shock, even though the "student" had long since stopped responding to the shock. Though there were many debates of the ethical implications of this study, 84% of the participants reported that they were glad to have participated.

## 2 The Well of Despair (1960)

Though Harlow has been associated with experiments that have garnered much knowledge using rhesus monkeys, there were some experiments that were ethically questionable and went far beyond the scope of scientific inquiry. One of the most controversial is one of his experiments on social isolation. He took baby rhesus monkeys that had already formed an attachment to their mothers and placed them in a chamber with no contact for up to a year. Many of the subjects became psychotic, and some never recovered. His point was that even a happy childhood was not completely protective against depression, and his point was well made.

## 1 David Reimer (1965 - 2004)

A Canadian baby suffered a botched circumcision, and a psychologist suggested that the boy undergo a sex change. The psychologist in question was trying to prove that nurture, not nature, was the primary determinant of gender identity, and was actually using the boy as a case study without disclosing so to the parents. The result was disastrous. The "girl" was confused about a number of topics and behaved like a stereotypical boy. The whole family suffered from psychological distress, and at the age of 14, "Brenda" was informed that she was actually a he. At that time, he decided to stop the estrogen therapy to undergo yet another sex change operation. At 38 years old, he committed suicide.

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# Creative Achievement and Regulation of Motivation for Creative Behaviors

## Authors

**Ryan Holt**

*California State University, San Bernardino*

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## Abstract

Previous literature on the study of creativity has indicated support for a domain-specific approach to the creative performance. Individuals tend to identify an area of interest to be creative. To better understand the development of future programs involving the growth of creative skills, this study explored the domains of creative interests among college students through a creativity task preference assessment. Specifically, after individuals are instructed to indicate a personal domain of creativity, they are expected to choose an analogous creative task. Participants ( $n = 274$ ) completed measures of creative self-identity, measures of achievement (creative writing/humor, scientific inquiry/inventions, general/academic), followed by a choice of a creative writing task, creative science task, or general test of psychological preferences. It is expected that the connection between creative self-identity, as well as measure of achievement and preference of test, will be maintained. This choice of creative task is expected to occur more frequently among participants who value their creative self-identity compared to those who do not. These results are expected to provide a greater understanding of how creative individuals make different patterns of decisions as well as how to foster creative motivation.



## Author Interview

Ryan Holt

**What are you majoring in?** I am majoring in General Experimental Psychology.

**What year are you in school?** I just graduated with my M.A.

**Which professors (if any) have helped you in your research?** James Kaufman for primary assistance, Matt Riggs for statistical assistance, and Allen Butt for assistance in developing the experiment.

**What are your research interests?** I am primarily interested in the constructs of motivation and creativity.

**What are your plans after earning your degree?** I plan on earning another Degree; a Ph.D., to be specific.

**What is your ultimate career goal?** To be a professor at a university teaching and conducting research on a variety of my research interests.



### **Creative Achievement and Regulation of Motivation for Creative Behaviors**

Creativity research investigates the production of novel ideas or products that are useful and relevant to the task (Sternberg, 2003; Sternberg & Lubart, 1993; Kaufman & Sternberg, 2006). Creativity is typically measured along four different dimensions: the person, the process, the product, and the pressures of the environment (Rhodes, 1962). In terms of ability, creativity has been shown to be fairly consistent across a variety of demographics, including ethnicity and gender (Stricker, Rock & Bennett, 2001; Kaufman, Baer, & Gentile 2004; Baer & Kaufman 2008). It is a quality that exists in all persons, but varies from individual to individual in terms of realization and development (Runco, 2003). Creativity is an important construct that can result in innovation, which can ultimately lead to better performance, lower cost of products, and improved happiness (Utterback, 1996; Feurer, Chaharbaghi, & Wargin, 1996; Giacinto, Ferrante, & Vistocco, 2007). Although creativity is mostly investigated at the level of the individual, creativity has broad effects on the global social arena through its influence on innovation and industry (Grimm, Faeth, Golubiewski, Redman, Wu, Bai, & Briggs 2008). Even wide-reaching innovations began as prototypes based on a novel idea.

Novelty, or the quality of being new, is a part of creativity and has been demonstrated to function as a reward (Bevins, 2001). Novelty seeking behaviors have been investigated both in consumer behavior and learning theory. The conclusion among consumer behaviorists is that individuals have varying levels of novelty seeking behavior, which reflects a need for stimulation (Hoyer & Ridgway, 1984). Models of consumer behavior are based on the idea that repeated use of a brand or product will result in a loss of utility due to a "satiation" effect (Jeuland, 1978, McAlister, 1979). Learning theory has shown that humans on variable schedules of reinforcement enjoy the reinforcement more quickly on fixed schedules of reinforcement. It has been demonstrated that adults who predictably received their preferred liquid showed decreased levels of brain activation: the authors suggest that the reliable rates of reward are not as exciting as the unpredictable rate (Berns, McClure, Panoni, & Montague, 2001). The axiom "Variety is the Spice of Life" seems to be exemplified through the available research on novelty seeking behavior, product switching, unexpected juice drinking, and creativity.

While variety may be reinforcing, reliability and conventionality can become aversive, which can be demonstrated through boredom, adherence to routine,

and employee burnout (Ford & Giola, 2000; Maslach & Jackson 1981; Weissinger, Caldwell, & Bandalos, 1992). These factors that reflect a predictable schedule can lead to a decrease in motivation to stay on a task, but may also lead to increasing creativity in another task (Harris, 2000). Additionally, it has been demonstrated that creative persons show a greater sensitivity to repetition and are motivated to seek out novelty (Martindale, Anderson, Moore, & West, 1995).

Boekarts, Pintrich, and Zeidner (2000) argue that an individual who is motivated and who can selfregulate is more likely to maintain their motivation to pursue an activity. Selfregulation is the ability to make decisions through selfcontrol provided by executive functions. It has been studied in a variety of contexts, including academic and organizational settings, and has been established as a means of maintaining the pursuit of an activity (Hong, 1999; Vohs et al., 2008; Zimmerman, 1989; Zimmerman & Bandura, 1994). However, few studies have been done on selfregulation and creativity.

Current research conducted on moral selfregulation has shown a paradoxical relationship between positive feelings and subsequent motivation. Individuals primed to feel increased states of moral selfworth inhibit prosocial behaviors, whereas persons primed to feel decreased states of moral selfworth promoted prosocial behaviors. It was demonstrated that when participants were instructed to write positive traits about themselves or someone they knew, these participants indicated they would donate less money than participants instructed to write negative traits about themselves or someone they knew (Sachdeva, Illiev, & Medin, 2009). When moral selfconcept is threatened, compensatory behaviors become activated to make up for the loss of value (i.e., moral cleansing). When moral selfconcept is praised, however, compensatory behaviors become activated, resulting in people passing on opportunities because they have an excess value (i.e., moral licensing). Thus, an individual may feel excessively satisfied with their selfconcept after feeling good about an achievement and decline an opportunity to continue increasing his or her level of selfconcept (Sachdeva, Illiev, & Medin, 2009). It is expected that the manipulation of creative selfconcept will provide similar results to those found within the field of moral selfregulation.

In order to understand the role of motivation and how it functions as a result of selfregulation, the experiment focuses on experimentally manipulating sources of creative selfconcept and assessing motivation to determine methods of creative selfregulation. The purpose of this experiment is to explore this balancing



act of creative selfconcept, creative achievement, and the resulting behaviors of motivation through a true experimental design. There are several hypotheses for the proposed experiment which examine aspects of the overall relationship individually, and then as a whole.

The first hypothesis is that differential levels of identification with creative identity will result in a difference of motivation/decision making. Specifically, when the participants with lower levels of creative identity are exposed to an easy (inflated) achievement questionnaire, they are expected to favor a same domain task, while when exposed to a hard (deflated) achievement questionnaire, they are expected to favor a different domain task. Additionally, when those participants with high levels of creative identity are exposed to an easy (inflated) achievement questionnaire, they will favor a different domain task rather than same domain, but when exposed to a hard (deflated) achievement task, they will favor a same domain task over a different domain task.

### Methods

#### Participants

A total of 274 (77 male, 194 female, and 3 declined to report) students from California State University, San Bernardino University (CSUSB) were recruited from lower division and upper division psychology courses. The higher creative self-identity group was determined by those who scored in the top 33% of the Creative Identity Measure, while those who were in the lower creative identity group were those who scored in the bottom 33%. Incentive for participation was 2 extra credit points for psychology classes.

All participants were treated in accordance with the "Ethical Principles of Psychologists and Code of Conduct" (American Psychological Association, 1992).

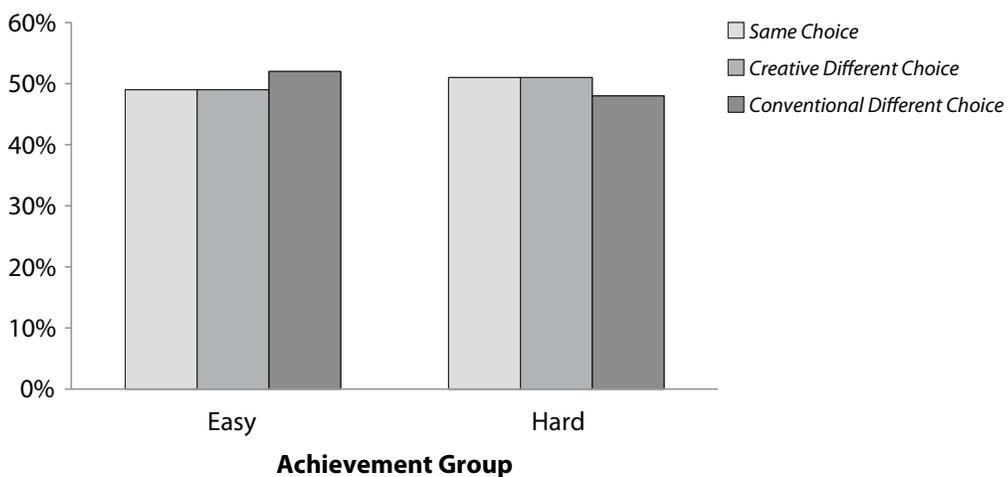
#### Materials

A Creative Identity Measure was created by adapting the existing 12 item Multigroup Ethnic Identity Measure (Roberts et al., 1999). This scale was created by changing mentions of "ethnic identity" to "creative domain" in order to measure how individuals valued their creative identities. Questions were rated on a scale of 14 (1 = Strongly Disagree; 4 = Strongly Agree); e.g., "I have a clear sense of my creative identity and what it means for me."

Materials included six different surveys to prime for inflated and deflated levels of achievement in three different domains of artistic creativity, scientific creativity, and academic/conventional achievement for the control group. The purpose of the control group is to rule out the possibility that appraisal of general/academic achievement will result in increased motivation to perform a creative task.

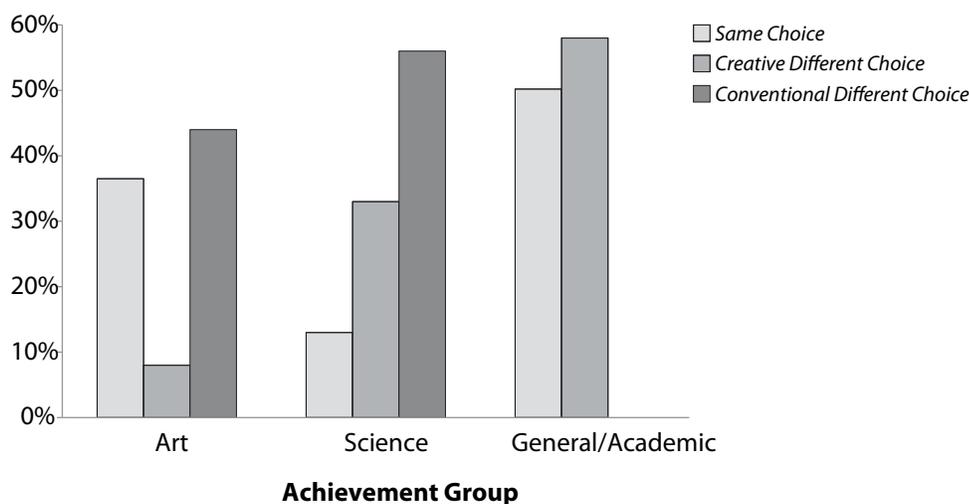
Creative achievement was operationalized through the modified combination of the Creative Achievement Questionnaire (CAQ) and individually developed items (Carson, Peterson & Higgins, 2005). The CAQ was developed to separate and give weight to different levels of achievement. The CAQ is an 80 item selfreport checklist divided into 10 domains of creative achievement in the arts and sciences based on a review of previous literature (Hocevar, 1979; Taylor & Ellison, 1967; Torrance 1972). The domains used in the study (Creative Writing/Humor Achievement,

Figure 1. Results of Domain Task Choice after Exposure to Either an Easy or Hard Type of Achievement Questionnaire.





**Figure 2.** Results of Type of Task Choice after Exposure to Either an Art, Science, or General/Academic Type of Achievement Questionnaire.



Creative Science/Innovation Achievement, General/Academic Achievement) were adapted from the CAQ, Student Self-Concept Scale, and the Achievement Goal Questionnaire (Finney, Pieper, & Barron, 2004; Young, 1998). Each of the three domains for this study were composed of 12 mid-level achievement questions and an additional 12 easily-obtainable achievement questions for the High Creative Achievement Survey, or 12 rarely-obtainable achievements for the Low Creative Achievement Survey, for a total of 24 items for each survey. Participants indicated whether they had obtained each achievement through a yes or no response. The scoring of the tests was not the particular interest of this study; rather, these tests are being used as primes to evoke different states of creative achievement.

All measures and tests were displayed through a computer program written in Python capable of random assignment and storage of inputted data. In addition to the measures and tests, the debriefing statement was also displayed through the computer program (Hetland, 2010).

### Procedure

Participants were seated in a computer room with two computers per table for a total of eight available stations. A copy of the informed consent was provided to each participant at their stations.

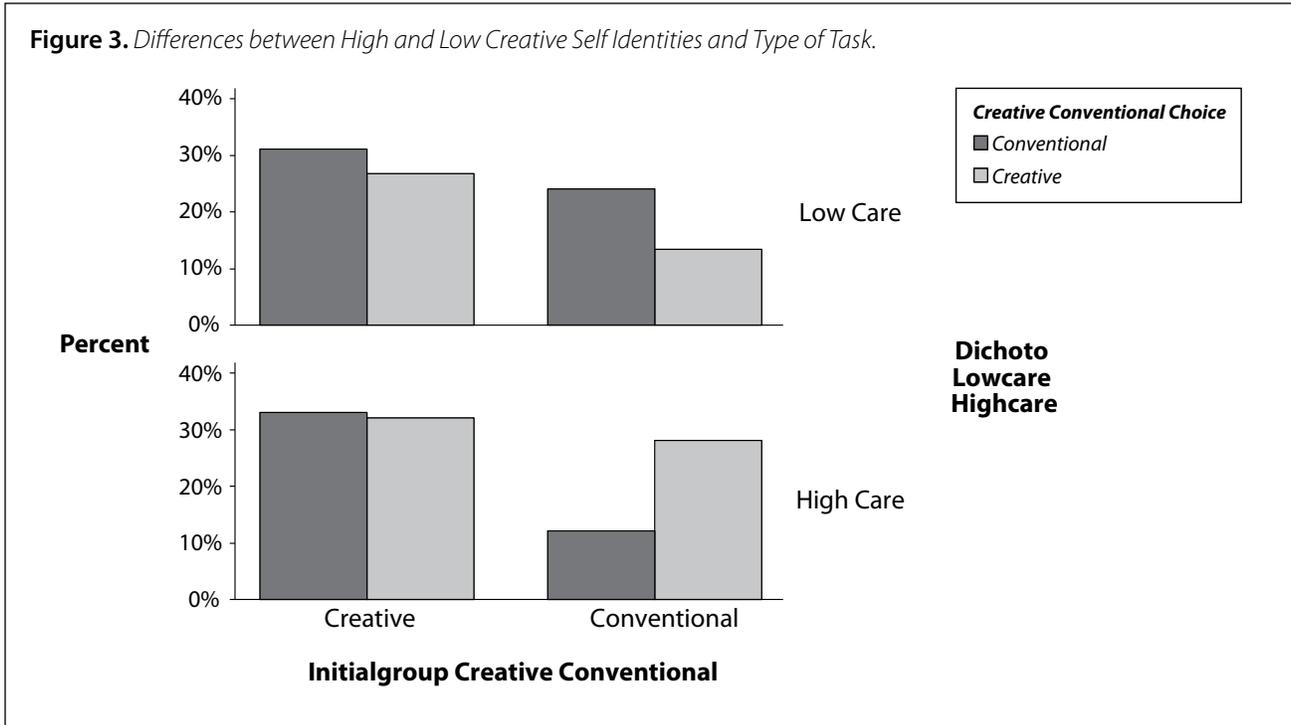
After indicating their consent, participants were asked to indicate their gender. Participants began the Creative Identity Measure by first responding to indicate the domain they considered themselves to be the most

creative in. Upon completion of the Creative Identity Measure, participants were randomly assigned to one of six groups (high achievement creative writing/humor, high achievement scientific inquiry/inventions, high achievement general/academic, low achievement creative writing/humor, low achievement scientific inquiry/inventions, low achievement general/academic). After answering all 24 achievement-related questions, each participant was presented with an achievement score (ranging from 0 to 24) which represented the sum of their indicated achievements; greater numbers indicated higher levels of achievement.

Participants were then instructed that they were to choose from three brief psychological assessments: a creative writing and humor creativity task, a scientific and inventive creativity task, or a general psychological test of preferences. Regardless of indicated choice, all participants were then instructed to complete an Unusual Uses item for one minute. After the time expired on the Torrance Test of unusual uses, participants were then displayed information relevant to their debriefing and thanked for their participation. The participants were informed that the intent of the experiment was to examine the roles that self-concept, achievement, self-regulation, and have on motivation to engage in creative behaviors.

### Statistical Analysis

Verification of the absence of gender differences across the developed Creative Self-identity measure and the Creative Achievement measures was assessed



through the use of an independent samples t test. All statistical analyses were conducted using the SPSS package with the use of a significance value of  $p < .05$ . Chisquare test of Independence was used to compare differences in responses based on different levels of the independent variables (easy/inflated sense of achievement vs. hard/deflated sense of achievement and creative domains vs. conventional domains).

### Results

For the first part of the first hypothesis, a comparison of the frequency of making a same domain choice, a creative different domain choice, or a conventional domain choice by starting in an easy/inflated achievement group or a hard/deflated achievement group was conducted. The chisquare test of independence indicated that the choice of domain was not associated with either easy or hard achievement group  $\chi^2(2, N = 274) = 0.68, p < .05$ . The results for this finding can be observed in Figure 1.

For the second part of the first hypothesis, a comparison of the frequency of making a same domain choice, a creative different domain choice, or a conventional domain choice by starting in creative writing/humor domain, scientific inquiry/inventions domain, or general/academic domain was conducted. The chisquare test of independence indicated that choice of domain was associated with the type of initial domain achieve-

ment questionnaire  $\chi^2(4, N = 274) = 102.103, p < .05$ . A comparison of standardized residuals demonstrates that those initially in the art and science groups most frequently chose a conventional different choice, while individuals who were initially in the general group tended to make a creative different choice, as seen in Figure 2.

An additional hypothesis was created based on the results from the second part of the first hypothesis, which demonstrated a trend among participants with high levels of creative selfidentity to choose a conventional task when exposed to a creative achievement questionnaire and to choose a creative task when exposed to a general/academic achievement questionnaire. A comparison of frequency of making creative choices or conventional choices was then conducted based on exposure to a creative or general achievement questionnaire. This was further divided among the higher and lower level groups of creative selfidentity. The chisquare test of independence indicated that the choice of creative or conventional domain was associated with type of initial creative or general/academic achievement questionnaire for participants with higher creative selfidentity scores ( $\chi^2(1, N = 175) = 3.88, p < .05$ ), but not among participants with lower creative selfidentity scores ( $\chi^2(1, N = 175) = 0.86, p > .05$ ) see Figure 3. The difference in standardized residuals among participants with the higher levels of creative selfidentity in the



conventional group and the creative group demonstrates a difference in behavior trends, see Table 1.

**Discussion**

The first hypothesis, that exposure to different achievement questionnaires would result in different patterns of choices for similar domain activities, creative different activities or conventional different activities, was not supported. It would appear that the manipulation of an individual's perception of their achievement did not occur. While a statistical difference was observed between the easy and hard achievement scores, this did not translate into an actual difference in perception of achievement. Since the manipulation of achievement for both the hard and easy groups resulted in only an

achievement sum score and a range, my attempt at an implicit manipulation of achievement may have not been effective without providing a comparison to a peer group's level of achievement. Bandura and Cervone (1983) state in reference to the self-evaluative process of evaluating one's performance, that the activation of this process requires knowledge of personal standards and level of others' performances. Without this knowledge, there is no basis for "self-evaluative reactions" and no motivation to change.

The second component of the first hypothesis was that exposure to a different domain of questionnaires would result in different patterns of choices for similar domain activities, creative different activities, or conventional different activities. This hypothesis was supported.

**Choice after Exposure to Either a Creative or Conventional Type of Achievement Questionnaire**

**Table 1.** Standardized Residuals and Counts for H2.

			Choice		Total
			Conventional	Creative	
Low Care	Creative	Count	31	20	51
		Expected Count	33	18	51
		Std. Residual	-0.3	0.5	
	Conventional	Count	24	10	34
		Expected Count	22	12	34
		Std. Residual	0.4	-0.6	
	Total	Count	55	30	85
		Expected Count	55	30	85
	High Care	Creative	Count	33	24
Expected Count			28.5	28.5	57
Std. Residual			0.8	-0.8	
Conventional		Count	12	21	33
		Expected Count	16.5	16.5	33
		Std. Residual	-1.1	1.1	
Total		Count	45	45	90
		Expected Count	45	45	90
Total		Creative	Count	64	44
	Expected Count		61.7	46.3	108
	Std. Residual		0.3	-0.3	
	Conventional	Count	36	31	67
		Expected Count	38.3	28.7	67
		Std. Residual	-0.4	0.4	
	Total	Count	100	75	175
		Expected Count	100	75	175



The manipulation of type of domain of questionnaire that my participants received did cause a motivational difference in task choice. For example, all participants chose a creative art task or general psychological test of preferences more often than a creative science task. The pattern of choices from the science domain seems to reflect an exodus of participants who were motivated to choose something that was potentially easier. The pattern of choices from the creative writing/humor domain seems to reflect an aversion to choosing a creative science approach, while the pattern of choices from the general academic domain seems to reflect no particular preference or motivation. These patterns of choices seem to reflect a phobic outlook on the sciences among college undergraduates.

The second hypothesis tested whether or not exposure to conventional tasks (general/academic achievement questionnaire) would result in different choices of behavior among participants in the top and bottom 33% of creative selfidentity. The achievement questionnaires allow participants to selfreflect upon their past levels of creative achievement, and an interesting trend has been differentiated among those who value their creative identities and those who do not. Among participants who value their creative identity and are exposed to creative selfreflection, the motivation to pursue subsequent creative behaviors is appeased rather than spurred on. On the other hand, when participants who value their creative identity are prompted to reflect upon general/academic achievement and then have the opportunity to choose between a conventional and creative task, these individuals are motivated to seek opportunities for creativity. The immediate selffeedback of a creative selfreflective experience appears to satiate the drive for flexing one's creative muscles, while the deprivation of creativity results in a stronger urge to pursue the immediate chance to engage in a creative activity.

The difference in motivation between the participants with the lowest and highest creative selfidentity scores is that the lower-scoring individuals have a smaller threshold of creative satiation, and higher-scoring individuals will seek to relieve creative deprivation. Sachdeva, Iliev, and Medin (2009) described moral selfregulation as a regression to the mean. When moral selfconcept had been inflated, participants would engage in fewer moral behaviors due to the pretense of moral satisfaction. Conversely, when moral selfconcept had been threatened, participants would engage in greater rates of moral behaviors to atone. Similarly, individuals who value creativity and engage in creative selfreflection may potentially exceed their baseline for creative motivation. On the other hand,

when individuals who value creativity have not had opportunities to be creative, they may experience a decrease below their baseline for creative motivation. The subsequent behavior is a reflection of selfregulating these perceived changes in baseline.

### **Limitations and General Discussion**

There are several limitations that influence the interpretation of the results. Although great efforts were made to recruit from general requirement classes, a majority of participants were undergraduate psychology students, which may have affected the large pool of participants who chose the general psychological test of preferences. Problems with the achievement manipulation could also be a limitation to this study. Although the different domain achievement questionnaires were shown to have different effects on creative motivation/decision making, the attempts to manipulate achievement based on taking an easy or hard questionnaire did not work. As stated previously, without a point of reference to make an internal comparison, there is no motivation for change; a more meaningful form of feedback would have been the individual's achievement score contrasted with a peer mean achievement score.

While many studies have examined feedback on creative performance, the intent of this study was to examine how individuals examined their personal history of achievements and the effect of this examination on motivation for obtaining additional creative achievements. A manipulation of performance may have affected immediate decision making without a specific reference to an individual's history of performance. Evidence suggests that the selfregulatory processes used by individuals to make decisions are largely unconscious and automatic (Bargh & Cartrahnd, 1999). This process leads individuals to becoming governed by selfregulatory habits developed earlier in life. Despite the influence that this automatic selfregulation has on individuals in regard to personal beliefs about efficacy, it is still possible to influence decision making by providing external feedback (Pajares, 1996; Pajares, & Valiante, 1997).

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“Curiosity about life in all of its aspects, I think, is still the secret of great creative people.”

— Leo Burnett



# Childhood Abuse History as a Predictor of Intimate Partner Violence

## Authors

**Evelyn E. Ayala and David V. Chavez, Ph.D.**

*California State University, San Bernardino*

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## Abstract

Child abuse victims face environmental, psychological, and social issues that may contribute to re-victimization in adulthood, specifically as survivors of intimate partner violence (IPV). While there are many factors that place child abuse survivors at risk of being re-victimized, the additive hypothesis suggests that when multiple types of childhood abuse (emotional, verbal, and physical) are experienced, the likelihood of being re-victimized is increased. This study analyzed predictors of IPV to test the hypothesis that this additive effect would predict higher levels of IPV than any one type of abuse. Participants consisted of 634 women, who ranged in age from 18-68. Measures utilized were the Childhood Trauma Questionnaire (CTQ) and the Revised Conflict Tactics Scales (CTS2); these were selected from an archival dataset that included measures of other abuse outcomes and resiliency factors. Additive childhood abuse was found to be positively correlated with all types of abuse in intimate partner relationships. However, previous findings that sexually abused women are especially vulnerable to IPV were not confirmed in this study, nor was there any significant relationship to any later abuse in intimate partner relationship. The results suggest that an additive childhood abuse factor lowers survivors' ability to avoid intimate relationships with interpersonal violence. On the other hand, sexually abused women may be more careful in choosing non-aggressive partners or may tend to avoid intimate relationships. Future research is necessary to further understand the nature of interpersonal conflicts that survivors face in relationships so that more effective intervention and prevention programs can be developed.



## Author Interview

Evelyn Ayala

**What are you majoring in?** I am majoring in Psychology and Human Development.

**What year are you in school?** I am a 5th year senior.

**Which professors (if any) have helped you in your research?** Dr. David V. Chavez

**What are your research interests?** Over the past few years, I have become most interested in childhood abuse and how it relates to maladaptive behaviors that affect health as a result of stressors related to trauma experience. I am particularly interested in studying aspects of human development and adjustment that are affected by the inequalities and create barriers that exist and impact access to mental health, as well as other resources in my own community and in many other ethnic minority group communities. The aforementioned areas of clinical psychology, along with the study of treatment approaches that not only take into account a person's symptoms, but also their individual, social, and cultural background, have formed the basis for my decision to seek a career in the field of Psychology.

**What are your plans after earning your degree?** After earning a B.A., I would like to gain acceptance to a graduate program to further pursue my long term professional goals.

**What is your ultimate career goal?** My long term professional goals are to receive Ph.D. training in Clinical Psychology and become a scientist-practitioner. I would like to become a professor at a minority-serving institution researching areas of mental health disparities among minority groups as they relate to childhood abuse and trauma. By studying these areas, I would like to develop and implement culturally-appropriate intervention and prevention programs that reduce mental health disparities among Latinos.



### **Childhood Abuse History as a Predictor of Intimate Partner Violence**

Intimate Partner Violence (IPV) is a major problem in the United States; past research estimates that 1-14% of women experience IPV in the annually (Lipsky, Caetano, Field, & Larkin, 2006). Twenty-five percent of women reported abuse from an intimate partner in the survey of The National Violence Against Women Survey (Bassuk, Dawson, & Huntington, 2006). IPV has been found to have negative consequences regardless of type of abuse (e.g., psychological, physical, and/or sexual) (Enander, 2010). Experiencing childhood abuse has been shown to increase the chance of such re-victimization as IPV. While experiencing any type of child abuse, whether psychological, physical or sexual, has been shown to have this effect, there has been indication of an additive effect of abuse in which there is an incremental increase in re-victimization based on the number of different types of abuse experienced (Jankowski, Leitenberg, Henning, & Coffey, 2002).

Victims of IPV face environmental factors that may influence underreporting, such as influence by significant others, economic dependence, concerns about child custody, and legal issues (Griffing, Lewis, Chu, Sage, Jospitre, Madry, & Primm, 2006). Victims often feel shame related to abuse and disclosure about abuse (Enander, 2010). Victims also face psychological and social issues, including attachment to the abuser and emotional commitment to a relationship, as well as cognitive factors like low self-esteem and learned helplessness (Griffing et al., 2006). Depression is associated with social withdrawal, which leads victims with limited social networks to provide emotional support and resources (Lindhorst, Beadnell, Jackson, Fieland, & Lee, 2009). Thus, survivors of IPV with depression may stay in abusive relationships longer and may experience more difficulty obtaining help and support. All of the aforementioned factors influence women's decisions to stay in abusive relationships and deny that they are abused in order to avoid facing environmental factors.

Past research suggests that economically disadvantaged women with past childhood abuse are four times more likely to experience IPV in their adult life (Bassuk et al., 2006). Women that are abused during childhood usually experience feelings of shame, seclusion, and guilt (Herrenkohl & Herrenkohl, 2007). As stated by Jankowski et.al. (2002), survivors of sexual abuse often have more familial problems, such as less emotional engagement, cohesion, adaptiveness, and more conflict. Past research suggests that childhood sexual molestation is strongly correlated with experiencing IPV within the last year (Bassuk et al.,

2006). Childhood abuse in women is associated with viewing abusive relationships as something that is anticipated and acceptable (Bassuk et al., 2006). Past research has also shown that child sexual abuse is a risk factor for depression; survivors of domestic violence who experienced child sexual abuse are more likely to display more serious clinical depressive symptoms (Griffing et al., 2006). However, victimization, whether in childhood or adulthood, is associated with higher rates of re-victimization (Lindhorst et al., 2009).

Childhood sexual abuse is not the only predictor of later abuse; additive traumas such as witnessing domestic violence and physical abuse in childhood have been shown to increase the chance of revictimization (Jankowski et al., 2002). Consequently, women who experience two or more types of abuse are three times more likely to be sexually assaulted or experience revictimization later in adulthood than those who have experienced only a single type of abuse. Because there has been little research that considered the possibility of co-occurring types of abuse, and due to the additive nature of childhood abuse, it is likely that these experiences may perpetuate dysfunctions (Herrenkohl & Herrenkohl, 2007).

Research also suggests that victims of sexual abuse, both alone and in combination with other forms of abuse, experience interpersonal functional difficulties (Kim, Talbot, & Cicchetti, 2009). Past research suggests that an abusive childhood may lead to aggressive behaviors in adulthood that could lead victims to be attracted to aggressive and violent partners (Kim et al., 2009). Abused women may be more likely to lash out at partners' abusive behavior due to shame proneness, aggression, as well as anger (Kim et al., 2009). Abused women are therefore more vulnerable to being physically abused by their partners (Kim et al., 2009). Women who are sexually abused report poorer intimate partner communication than non-abused women (Kim et al., 2009). Childhood sexual abuse is associated with shame, which is also related to verbal conflict in intimate relationships (Kim et al., 2009).

Shame has a strong relationship to interpersonal impairment and psychological dysfunctions (Kim et al., 2009). A review of relevant literature suggests that victims who experience multiple incidents of abuse have higher levels of trauma related symptomatology, as well as feelings of self-blame and shame (Griffing, 2005). Past research has also shown that sexually abused women demonstrated greater shame-proneness than non-sexually abused women (Kim et al., 2009). Survivors often suffer from psychological consequences of IPV, shame, and lowered self worth,



which is closely related to insecurities of disclosure due to stigmatization, as well as to shame associated with abuse (Enander, 2010). Shame is associated with feelings of guilt, self blame, and painful feelings related to the abuse (Enander, 2010). Past research has stated that shame is related to one's stigmatization and perceived negative societal view of abuse (Enander, 2010).

The purpose of the present study was to investigate the association between childhood abuse (emotional, physical, and sexual) and types of abuse in intimate partner violence. In addition to hypothesizing positive correlations between the various types of childhood abuse and IPV, it was further predicted that childhood sexual abuse survivors would be more vulnerable to IPV compared to survivors of childhood emotional and physical abuse. Secondly, we hypothesized that there would be a significant additive nature in different types of childhood abuse, leading to greater susceptibility of later IPV.

### Method

#### Participants

Participants in the full study consisted of 977 female undergraduate students attending California State University, San Bernardino. There were 634 participants that had reported experiences of abuse sometime in their life as well as being in intimate relationships, making them eligible for this study. The mean age of participants was 25.81 years, and then total sample ranged from 18 to 68. Participants' ethnicity was mostly Latina (37%), followed by Caucasian (27%), African American (14%), Asian/Pacific Islander (7%), and American Indian (.6%). All participants were English-speaking and were given four extra credit points for their participation

in the study. Participants were treated according to Code of Conduct and the Ethical Principals of Psychologists (American Psychological Association, 2002).

#### Materials

This archival study is part of a larger ongoing study examining the relationships between abuse, resiliency factors, and outcomes being conducted at California State University of San Bernardino (CSUSB). The study's focus is on women's experiences of childhood and adulthood abuse. Participants filled out a packet containing 10 self-report measures, a demographic sheet, and an informed consent form. However, only two self-report measures were used for this study: the Childhood Trauma Questionnaire and the Conflict Tactics Scale 2.

**Childhood Abuse.** The measure used to assess Childhood Abuse was the Childhood Trauma Questionnaire (CTQ; Bernstein et al., 1994), which measured participants' exposure to childhood trauma. The questionnaire consists of 25 Likert-type questions rated on a 5 point scale from 1(never true) to 5(very often true). One example of the type of questions asked in this questionnaire is, "I got hit so hard by someone in my family that I had to see a doctor or go to the hospital." The scale has a good internal consistency with a reported alpha coefficient of .86 for the total scale (Bernstein et al., 1994). Internal consistency for subscales are as follows: sexual abuse alpha ranged from .93 to .95, physical abuse alpha ranged from .81 to .86, and emotional abuse ranged from .84 to .89.

**Intimate Partner Violence.** The Conflict Tactics Scale 2 (CTS2; Gelles & Straus, 1996) was used to assess intimate partner violence. The CTS2 measures participants' level of exposure to domestic violence as possible

Table 1. Mean and Standard Deviation of type of abuse as a function of abuse group.

Type of Abuse		Childhood Abuse	Intimate Partner Abuse
Emotional	Mean	9.38	9.35
	SD	5.00	8.87
Physical	Mean	7.48	3.52
	SD	3.86	8.09
Sexual	Mean	7.89	3.05
	SD	5.28	5.02
Additive	Median	2.00	-
	SD	1.02	-



**Table 2.** Statistical results of bivariate correlation of childhood type of abuse and intimate partner type of abuse.

	Type of Childhood Abuse			Type of Intimate Partner Abuse		
	Emotional	Physical	Sexual	Emotional	Physical	Sexual
<b>Type of Childhood Abuse</b>						
<i>Emotional</i>	-					
<i>Physical</i>	.65*	-				
<i>Sexual</i>	.41*	.36*	-			
<b>Type of Intimate Partner Abuse</b>						
<i>Emotional</i>	.13**	.19**	.10*	-		
<i>Physical</i>	.10*	.14**	.09*	.62**	-	
<i>Sexual</i>	.03	.05	.01	.42**	.52**	-

Note. \* $p < .05$ , \*\* $p < .01$

victims or perpetrators. One example of the type of question participants were asked to rate in this questionnaire is, "I twisted my partner's arm or hair." The questionnaire consists of 78 Likert-type items rated on an 8 point scale from 0 (this never has happened) to 7 (more than 20 times in the past year). The scale has good internal consistency, with a reported alpha coefficient of .86 for the total scale (Gelles & Straus, 1996).

After each participant completed the surveys, they were provided with a resource packet that contained community referrals with contact information for several agencies specializing in sexual assault, domestic violence, and assault services, so that they could discuss their experiences with a counselor if they needed to.

**Procedure**

CSUSB utilizes a SONA Research Management System where participants can sign up in an available time slot to participate in the study. Once participants showed up to the lab, they were informed of the study and tested in a quiet environment. Each participant was given an informed consent form and completed the demographic sheet. They then proceeded to read and rate each of the questionnaires. After participants completed the packet, which took 45 to 60 minutes, they were escorted out of the room and asked if they had any questions or concerns. They were then given the resource packet, thanked for participating in the study, and debriefed.

**Design**

A multiple bivariate two tailed correlation was used to analyze the relationship between childhood sexual, physical, and emotional abuse experiences and intimate partner physical, sexual, and emotional abuse. Three separate bivariate two tailed correlational analyses were used to analyze the additive nature in childhood sexual, physical, emotional abuse experiences with regard to intimate partner violence. For the analyses in this study, only participants with a cumulative score higher than five on either the CTQ or the CTS2 were used so that only those with abuse experience were analyzed. Additive abuse scores were derived by summing the number of different types of child abuse experienced and distributing them in an ordinal scale.

**Results**

For the first hypothesis, there was a total valid sample of 634 participants (for descriptive statistics refer to Table 1). The results of this first set of correlation analyses only partially supported this hypothesis, which stated that there would be a positive relationship between the various forms of childhood abuse and intimate partner abuse. As shown in Table 2, there was a positive relationship between childhood physical and emotional abuse and all three types of IPV. However, not only did childhood sexual abuse fail to be the strongest predictor, it did not correlate significantly with any of the IPV types of abuse.

For the second hypothesis, the correlation analysis of the additive nature of different types (emotional,



**Table 3.** Statistical results for relationship between additive effects of childhood abuse and later IPV. Additive Childhood Abuse.

	Types of Intimate Partner Violence		
	Emotional	Physical	Sexual
Additive abuse	.12**	.11**	.08*
N	634	634	634

Note. \* $p < .05$ , \*\* $p < .01$ .

physical, and sexual) of childhood abuse and partner violence indicated that all three forms of abuse are slightly additive in nature and indicate significant relationships (Table 3). Therefore the second hypothesis was supported. Additional analyses found there were also several significant correlations in intimate partner abuse and the following combinations of child abuse experiences: physical and emotional, sexual and emotional, and physical and sexual abuse.

### Discussion

The purpose of the present study was to investigate the association between childhood abuse (emotional, physical, sexual, and combinations thereof) and experiencing later intimate partner violence. There were small to modest associations found between emotional and physical childhood abuse and all three types of intimate partner violence. However, there were no relationships between childhood sexual abuse and IPV. The results supported the second hypothesis, in that the additive nature of different types of childhood abuse was associated with increased rates of intimate partner violence. This suggests that those who experience multiple types of abuse as children have a greater risk of being victimized by their partners later in life. This revictimization may be due to maladaptive behaviors or poor interpersonal skills that may inhibit their ability to seek out help.

The results of this study suggest that sexually abused women should be more careful in choosing non-aggressive partners or may tend to avoid intimate relationships. It is also possible that survivors of sexual abuse are more resilient to abuse. Another possibility is that survivors of sexual abuse may be under-reporting abuse due to feelings of shame related to the experience. It is even possible that survivors of childhood sexual abuse do not experience IPV later in life as the victims, but instead as the perpetrator of abuse; further research is needed in this area.

The results suggest that intervention programs should focus their attention on childhood physical abuse survivors to help them develop skills that can prevent intimate partner physical abuse. The results of this study may also be influenced by gender roles in society, where it is acceptable for males to be physically abusive and for females to be verbally abusive. However, this study did not take into account the gender of participants' partners. Because childhood physical abuse influences the development of a person, it may be that physical abuse becomes learned to be an acceptable way to deal with conflict. Survivors of childhood physical abuse may have characteristics that make them more vulnerable to intimate partner aggression; therefore, clinicians should take this into account when developing intervention programs.

The additive nature of childhood abuse suggests that the greater the types of abuse experienced during childhood, the lower the survivors' ability to avoid intimate relationships with intrapersonal violence. Clinicians can also be aware that childhood abuse often comes clustered with other types of abuse, and if a child is reporting one type of abuse, they may be experiencing multiple other types. For example, a child reporting physical abuse from a parent would be likely to have also experience verbal and emotional abuse by the perpetrator, as well. Clinicians should also focus on helping childhood abuse survivors with more than one abuse to develop more resilient characteristics and skills that can prevent negative outcomes.

There were some limitations in this study that should be taken into account in future research. Participants were not asked about contextual factors related to IPV. Understanding contextual factors would help clinicians further understand IPV. In addition, because all participants were students, it is not a sample that would necessarily represent the survivor population accurately. Successful students dealing with intimate partner sexual abuse are more likely to have dealt with



their situation and would be more likely to drop out of school if they failed to do so. Similarly, students who have experienced sexual abuse in their childhood are likely to have already coped with abuse in order to function adequately in an educational setting.

Future research is necessary to further understand the nature of interpersonal conflicts survivors face in relationships so that better intervention and prevention programs can be developed. Future research should also be done in the general population to see if childhood sexual abuse correlates with any type of intimate partner abuse, as expected. Future studies should focus on understanding the relationship between childhood physical abuse and intimate partner abuse to explore the commonality between these two factors. It is also important to further study childhood physical abuse as it correlates with intimate partner abuse and analyze whether childhood physical abuse survivors are aggressive towards their intimate partners. Finally, future research in this area should take into account the sexual orientation of the participants in context of social gender roles to further understand the correlation between childhood physical abuse and intimate partner abuse.

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"Hate is a product of the unfulfilled life."

— Erich Fromm



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