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## From the Editor's Desk

Spring is in the air and so is the newest edition of the Journal of Psychological Inquiry. With this issue, we are transitioning from a predominately print journal to a journal that is primarily online. Given the high costs associated with printing and mailing as well as the societal shift in media consumption away from print to online, we here at JPI believed this was only a natural event.

So what does that mean for you the reader? In short, accessibility will be easier. All issues, including the current issue, can now be found at the JPI webpage: [www.fhsu.edu/psych/jpi](http://www.fhsu.edu/psych/jpi). The website also contains information about submitting to JPI, archived issues of JPI, and information about the editorial board. In addition, the website offers video tutorials for authors, which contain step-by-step guides on types of manuscripts that can be submitted, how to create author accounts, and how to submit manuscripts. Lastly, the tutorials also contain guides for those faculty members who wish to become reviewers.

With that being said, we are not abandoning the print version of the journal entirely! JPI will still be printed in small supply and sent to many libraries and universities around the country. Furthermore, should you wish to receive a print version of the journal, we will still be offering this option for a small fee. Please feel free to contact us via the website to make arrangements if you are interested.

Finally, given this increase in submissions, we are faced with an ever increasing need for reviewers. If you are willing to serve in this role and/or know of someone who is, please contact Jenn ([jmbondsraacke@fhsu.edu](mailto:jmbondsraacke@fhsu.edu)), John ([jdraacke@fhsu.edu](mailto:jdraacke@fhsu.edu)) or Brooke Mann ([bmzoller@mail.fhsu.edu](mailto:bmzoller@mail.fhsu.edu)) at your earliest convenience!

Be sure to look for the next issue in fall around the end of October! Keep up the good work and we look forward to reading your new manuscript soon!

Best regards,

Jenn Bonds-Raacke and John Raacke  
Managing Editors

## **Acknowledgement: Reviewers**

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The following individuals reviewed manuscripts for this volume of the *Journal of Psychological Inquiry*. We gratefully acknowledge their valuable contributions to the journal.

*Dr. Rose Danek, Columbus State University*

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### Institutions & Organizations

Avila University	Newman University
Benedictine College	Northwest Missouri State University
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Columbia University	Union College
Doane College	University of Central Missouri
Emporia State University	University of Nebraska, Kearney
Fort Hays State University	University of Nebraska, Lincoln
Kansas State University	University of San Diego
Missouri Western State University	Webster University—St. Louis
Morningside College	Washburn University
Nebraska Wesleyan University	
Association for Psychological and Educational Research in Kansas	Nebraska Psychological Society

#### Cover:

**Logo:** The creation of the graphic for the logo came about by thinking of how ideas are formed and what the process would look like if we could see into our brains. The sphere represents the brain, and the grey matter inside consists of all the thoughts in various stages of development. And finally, the white spotlight is one idea that formed into a reality to voice. The entire logo is an example of creation in the earliest stages.

Cathy Solarana, Graphic Designer

**Cover Design:** The overall design was influenced by many aspects of psychology. Much of the inspiration was developed through the use of the iconic symbol for psychology as well as the beauty of psychology in its own right.

Brittney Funk, Graphic Designer

## Conceptual and Perceptual Features in Guided Visual Search

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**Abstract**—Visual search experiments have long concluded perceptual features such as color and shape can guide visual search to efficiently locate a target object. Krueger (1984) argued manipulating conceptual features (i.e., ‘6’ is a number and ‘G’ is a letter) entails manipulating perceptual features (‘6’ and ‘G’ have different shapes) so there is no way to disentangle the influence of conceptual and perceptual features on visual search. Nevertheless, Lupyan (2008) carefully controlled for shape while manipulating letter categories, and showed conceptual features such as one letter’s identity can be used to guide search. We expanded on this by looking at numbers. Our results were largely consistent with Lupyan’s, but also revealed a surprise: participants were faster to find targets based on numerical magnitude than numerical parity (even vs. odd). This could be due to the way numbers were arranged on the number line or to the fact judgments of numerical magnitude were more familiar than judgments of numerical parity. Future experiments are described to explore the role of the mental number line and familiarity in visual search for conceptual features.

*Keywords:* visual search, conceptual features, perceptual features

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Visual search may seem like an abstract idea but is a surprisingly common activity, for example when trying to locate one car from among all the others in a crowded parking lot. For this kind of search, features such as color and shape can typically distinguish a target car from all the others. For example, if the target is a yellow sedan, there might be cars with the right color but wrong shape (e.g., yellow coupe) and other cars with the wrong color but right shape (e.g., blue sedan), but hopefully there is just one car with the right combination of color and shape. If the yellow sedan target is parked in a lot owned by a taxi company then it doesn’t have a unique combination of color and shape so search must rely on the alphanumeric characters on the license plate, which are unique. When searching for a number such as 15 does vision need to use perceptual features such as a straight shape next to a curvy shape, or can conceptual features such as the number’s parity (oddness or evenness), or magnitude (bigger than 10 but smaller than 20) be used to guide search? Although many studies have looked at how perceptual features can guide visual search (reviewed in

Wolfe, 1998), here we investigated how conceptual features might also be used to guide visual search.

To test visual search behavior in the laboratory, decades of research has relied on the paradigm developed by Treisman and Gelade (1980) in which the independent variable is the number of items in each search display and the dependent variable is response time (RT). One commonly used task in this paradigm is conjunction search in which the target (e.g., red vertical line segment) shares one feature with half the distractors (e.g., red horizontal) and another feature with the other half (e.g., green vertical) so it doesn’t have a unique feature but is unique only in its *conjunction* of features. Another common task is feature search in which the target has a unique feature such as a single red item among several green items. In conjunction searches, RTs typically increase along with the number of display items (Wolfe, Cave, & Franzel, 1989) whereas in feature searches RTs remain relatively flat across increasing numbers of display items (Theeuwes, 1992). Prominent models of visual search such as Guided Search (Wolfe, 1994) explain the disparity between conjunction

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and feature search results by appealing to neurophysiological research showing simple visual features such as color, orientation, and motion are represented in different locations in the visual cortex (e.g., De Valois, Yund, & Hepler, 1982). In this context, a feature target pops out from distractors because it can be located by examining the features registered in a single area of visual cortex, whereas conjunction search requires comparisons of features across different regions of visual cortex. If the Guided Search model describes visual search behavior, can other, non-perceptual features guide search as well?

Krueger (1984) carried out visual searches in which the distinction between target and distractor was conceptual, such as a single digit target among letter distractors or a letter target among digit distractors. Krueger argued there was no way to tell if participants used conceptual categories to guide visual search because digits are distinct from letters perceptually as well as conceptually. Wolfe and Horowitz (2004) extended Krueger's argument by noting although the difference between uppercase and lowercase letters is in terms of learned categories, they can also differ by shape. Manipulating conceptual category typically entails manipulating shape so the two kinds of features (conceptual and perceptual) are too difficult to disentangle from one another.

In light of the claim by Wolfe and Horowitz (2004) that alphanumeric category is generally confounded with shape, Lupyan (2008) was motivated to try to disentangle conceptual and perceptual features by carefully controlling shape while manipulating conceptual category. To do so, Lupyan used the thorn character from Old English, which appears to the modern eye to be a blend of a lower-case 'p' and 'b', as can be seen here: þ. Participants searched for the thorn target among same-

category distractors (B and b) or different-category distractors (B and p). Notice though the 'b' and 'p' are conceptually distinct, the *perceptual* difference between 'b' and 'þ' is the same as between 'p' and 'þ'. Response times were faster in the same-category distractor condition, suggesting participants in that condition grouped the distractor items into a single group not by shape, but by category membership. By cleverly finding a new use for an old shape Lupyan unequivocally demonstrated visual search can be driven by conceptual category, but he left unanswered the question of whether this effect occurs in our everyday lives with more familiar shapes.

To answer this question we used shapes familiar to most people: digits. We sought to extend on previous work by using targets and distractors from different conceptual categories as in Krueger (1984) and developed two strategies to control shape differences as much as possible as in Lupyan (2008). First, to reduce the shape differences between numbers in existing fonts, we constructed digits from line segments as is common on the faces of digital clocks and as depicted in Figure 1. Second, we used the same six digits (2, 3, 4, 7, 8, & 9) in all three conditions: two conceptual conditions (Sudevan, & Taylor, 1987) and one perceptual condition. In one conceptual condition targets and distractors had different numerical magnitudes (e.g., small targets: 2, 3, 4, large distractors: 7, 8, 9) and in another conceptual condition targets had a different parity (i.e., evenness) than distractors (e.g., even targets: 2, 4, 8, odd distractors: 3, 7, 9). To see if conceptual categories could be as effective at guiding search as perceptual categories, a third condition was included in which targets had a different shape feature than distractors (e.g., targets with a closed shape: 4, 8, 9, distractors with a 'flap' shape: 2, 3, 7). These two strategies (i.e., creating a

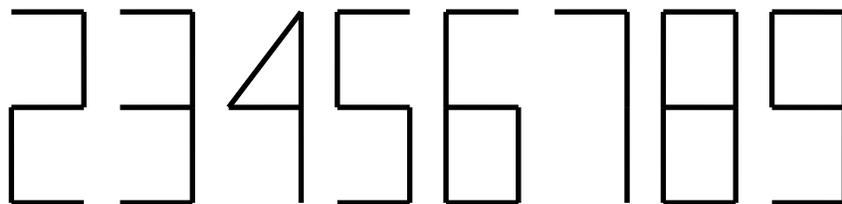


Figure 1. Digits composed of line segments used as target and distractor items.

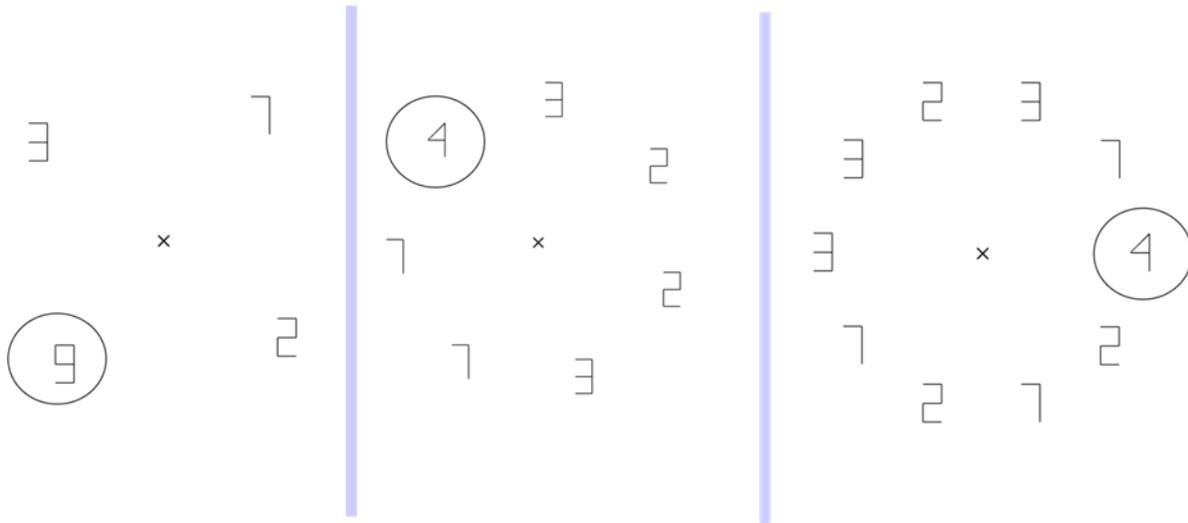


Figure 2. Example displays for each of three display sizes: 4, 7, and 10. The search task depicted here was for a target with closed shape among distractors with a flap. In the actual experiment there were no circles around the target but the circles are drawn here to show the location of the target. The correct keypress for each display is 'z' (left side of the display), 'z', and '/', respectively.

standardized font and using the same six digits in all three conditions) enabled us to carefully control shape differences, thereby eliminating the confound between conceptual and perceptual features described by Krueger (1984) and Wolfe and Horowitz (2004). Accordingly, we hypothesized our results would be consistent with those in Lupyan: digit search will require more effort than feature search so RTs will increase with display size, and conceptual features will be just as effective at guiding search as perceptual features so there will be no RT differences between the magnitude, parity, and shape conditions.

### Method

#### Participants

We obtained permission to carry out the experiment from the University of Central Arkansas Institutional Review Board before gathering any data, and treated participants in accordance with the ethical guidelines stipulated by the APA. Forty-eight undergraduate students from the University of Central Arkansas participated for course credit. Participants were randomly assigned to one of three conditions, 16 in each condition. All participants were 18 or older.

#### Apparatus

A custom-written visual search program

running on a Macintosh laptop presented visual search arrays and gathered response times.

#### Stimuli and Procedure

The experimental program began by presenting a series of screens containing written instructions; participants read each screen at their own pace then clicked a button labeled 'Next' to move to the next screen. After the instructions were finished, the program presented a series of visual search displays each containing a single target item and varying numbers (3, 6, or 9) of distractors. In each display the 4, 7, or 10 items (1 target plus distractors) were arranged on an imaginary circle around a central fixation point as depicted in Figure 2. In each trial the array appeared and remained visible until participants pressed one of two keys on the computer keyboard to report the target's location: participants pressed the 'z' key to indicate the target was on the left side of the display and the '/' key to indicate the target was on the right. For each trial the computer measured and recorded the time between the onset of the trial's display and the keypress (RT). Mistakes (i.e., the participant pressed the 'z' key when the target was actually on the right side of the display or the '/' key when the target was on the left) resulted in a pause for 1 second while the word 'Incorrect' appeared in the center of the screen.

Participants were randomly assigned to one of three numerical category conditions: magnitude, parity, or shape. The digits 2, 3, 4, 7, 8, & 9 were used for targets and distractors in all conditions. In the magnitude condition half of the participants searched for small targets (2, 3, & 4) from among larger distractors (7, 8, & 9) and vice versa for the other half of the participants. In the parity condition half of the participants searched for even targets (2, 4, & 8) from among odd distractors (3, 7, & 9) and vice versa for the other half of the participants. In the shape condition half of the participants searched for targets with a closed shape (4, 8, & 9) from among distractors with an overhanging 'flap' (2, 3, & 7) and vice versa for the other half of the participants. Although participants were told what digits to look for and what digits to ignore, they were not informed about the conceptual difference between targets and distractors (i.e., small vs. large, even vs. odd, closed vs. flap).

In each condition there were three possible targets but each search display contained just one target so a participant in the small magnitude condition might see a display containing the numbers

'2', '7', '8', and '9'. For this set of digits the participant would need to figure out which one of the four items was a member of the target set (i.e., 2, 3, or 4) then report which side of the display contained the '2' by pressing the appropriate key.

There were three levels of display sizes (3, 6, or 9 distractors), three target items, and two target locations (left or right) manipulated within-participants and replicated 20 times for a total of 360 (= 3 display sizes × 3 target items × 2 target locations × 20 replications) trials, presented in a random order. Six practice trials were given at the beginning of the experiment and another six practice trials were given after a brief period of rest halfway through the experiment. Results from practice and error trials were not analyzed. For the purposes of analysis there was one within-participants variable (display size) and one between-participants variable (numerical category).

### Results

A graph of RTs as a function of display size is depicted in Figure 3. Mean correct RTs were submitted to a mixed 3 × 3 ANOVA with display size as

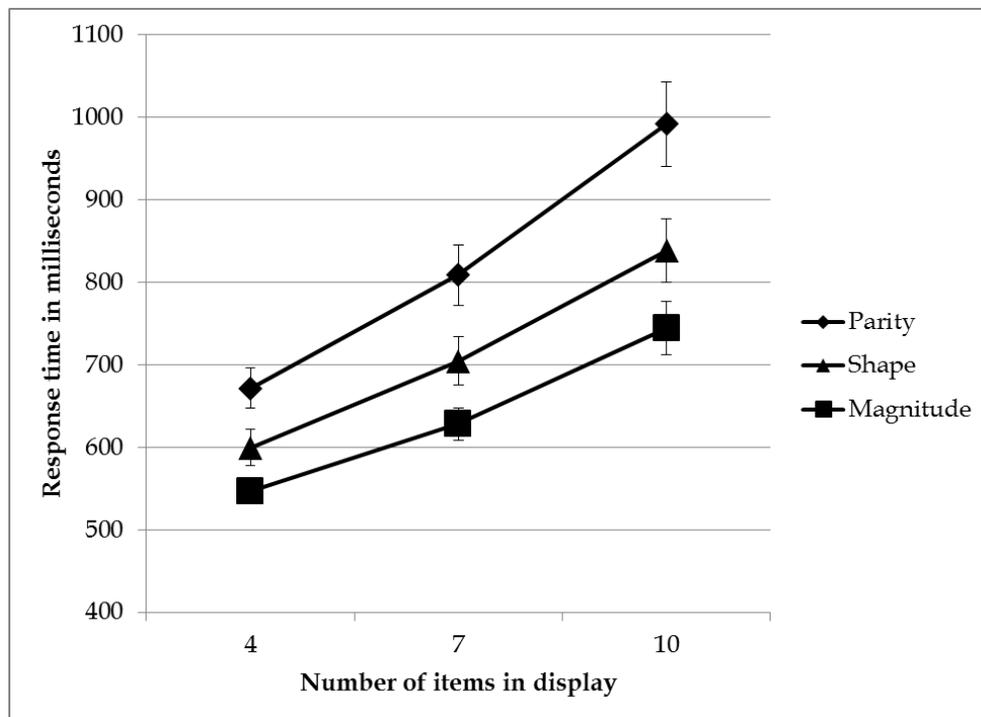


Figure 3. Mean RTs for parity, magnitude, and shape conditions as a function of display size. The error bars represent the standard error of the mean for each condition in each display.

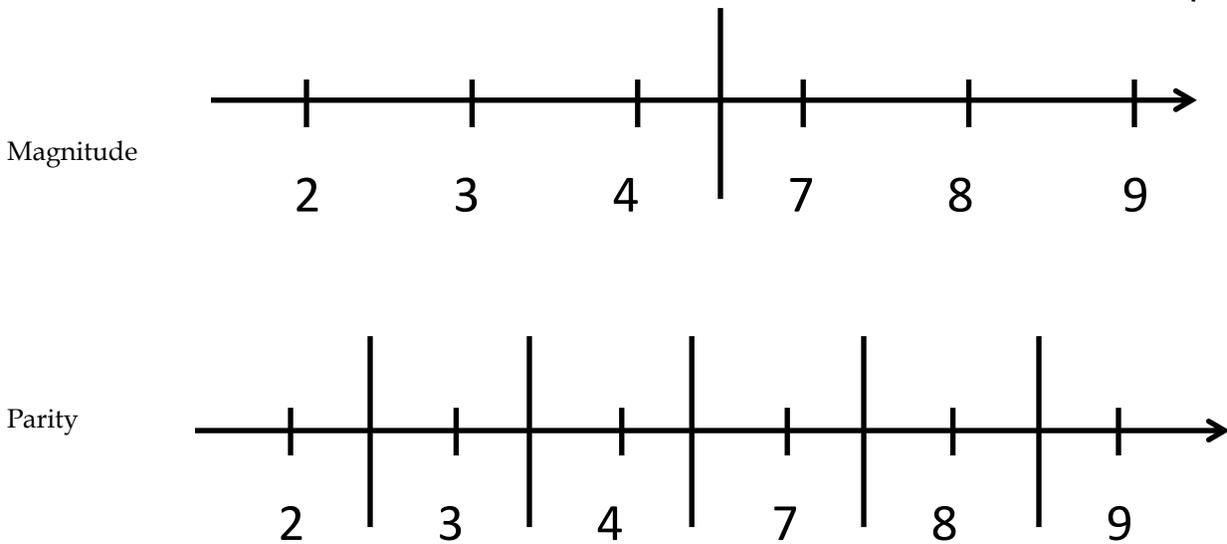


Figure 4. Mental number lines showing to separate targets from distractors based on magnitude requires just one boundary line but to separate numbers on the basis of parity requires several boundary lines.

a within-participants variable and numerical category as a between-participants variable. The ANOVA revealed the main effects of display size,  $F(2, 90) = 215, p < .001$ , and numerical category,  $F(2, 45) = 6.26, p = .004$ , were significant, and the interaction between display size and numerical category,  $F(4, 90) = 3.57, p = .009$ , was significant. A post-hoc Tukey's HSD comparison of the three numerical category conditions revealed differences between the parity condition and the magnitude condition,  $p = .003$ , but not for any other pair of conditions,  $p > .05$ . As is common in visual search experiments, the main effect of display size indicates RTs increased with display size, and the interaction indicates the slower conditions were steeper functions of display size. To further explore the main effect of display size and its interaction with numerical category we calculated the slope of each participant's line then submitted the slopes to a one-way ANOVA with numerical category as a between-participants variable. The effect of numerical category was significant,  $F(2, 45) = 3.95, p = .026$ , and a post-hoc Tukey's HSD comparison revealed the parity condition was steeper than the magnitude condition,  $p = .021$ , but none of the other pairs were significantly different,  $p > .05$ . The parity condition was not just slower but also steeper than the magnitude condition. The slope of RT as a function of display size is commonly presumed to

reflect the difficulty of search because each extra item in the display requires a finite amount of processing. That is, the parity condition is slower than the magnitude condition with four display items, then with seven display items the parity condition has three more items to process, each of which is processed slower than each of the extra three items in the magnitude condition.

### Discussion

We hypothesized our results would be consistent with those in Lupyan (2008); digit search should take more effort than feature search tasks and conceptual categories would be as effective as perceptual categories in guiding search. The main effect of display size confirmed our hypothesis RT would increase with display size, and the lack of a significant difference between the shape condition and either of the other conditions confirmed our hypothesis perceptual categories were not more effective than conceptual categories at guiding search. The observed difference between the magnitude and parity conditions was surprising and therefore requires some effort to understand and explain.

One way to explain the longer RTs in the parity condition than the magnitude condition is based on the way color can be used to guide search. Colors are presumed to be arranged in a three-

dimensional mental color space, so a visual search for a target color among several different distractor colors entails segregating one point in the color space from other points (D'Zmura, 1991). How many straight boundary fences would you need to build in color space to segregate the target color from the distractor colors? The answer depends on the colors selected for the target and distractors. If the target and distractor colors are selected so one straight fence is sufficient to segregate the target from distractors then search is faster than if more than one fence is needed. For example, on the familiar color wheel taught in elementary school, a simplified two-dimensional version of color space orange lies between red and yellow. If the target color is red and the distractors are orange and yellow then a single straight line can be drawn between target and distractors, but if the target is orange then two lines are needed to segregate it from yellow and red distractors. In other words, a red target is linearly separable from orange and yellow and thus leads to faster search than an orange target not linearly separable from red and yellow distractors.

Extending this idea to the current project, numbers are commonly presumed to occupy their own kind of mental space, specifically the number line (Pinhas, Pothos, & Tzelgov, 2013). As depicted in Figure 4, a single boundary line can segregate small numbers from large, but to segregate odd numbers from even requires several boundary lines. As with color, perhaps the magnitude condition was faster than the parity condition because targets were linearly separable from distractors. A second possibility for explaining faster RTs in the magnitude condition may be magnitude judgments are more common in our everyday lives than parity judgments. One limitation of our experiment is it can't distinguish between the linear separability and familiarity explanations, but this limitation lights the way for future research.

To explore the way linear separability in number space can influence search, we would need to manipulate mental number line locations while controlling shape differences. To do so, we can exploit the fact our digital clock face font depicted in Figure 1 the 2 is a reflection across the vertical axis of the 5. One possible experiment the target digits could be a 3 and 4. In one condition the distractors

could be 5 and 6 so targets are smaller than, and thus linearly separable from distractors. In a second condition the 5 could be replaced with its reflection, the 2. Thus the distractors in the second condition (2 and 6) would be the same shapes as the distractors in the first condition (5 and 6), but they would be positioned around the targets (3 and 4) on the number line. Although both conditions rely on magnitude judgments, in the first condition targets are linearly separable from distractors but in the second they are not.

Even if such an experiment finds evidence linear separability in number space influences search, the possibility remains *both* familiarity and linear separability contributed to the faster RTs in the magnitude condition than the parity condition. When considering the role of familiarity, a second limitation of our project becomes apparent: because we were interested in visual search performance among adults, all our participants were 18 or older. Adults not only have more developed visual processing but also have a lifetime of experience making numerical judgments. Perhaps we could replicate our experiment with participants of various ages from childhood to adulthood. If familiarity with magnitude judgments contributed to the faster RTs in the magnitude condition than the parity condition, younger children can be expected to have less experience making numerical magnitude judgments and therefore should show less difference between the magnitude and parity conditions than adults.

In summary, the results of our experiment show when controlling for shape differences between targets and distractors, perceptual features were no more effective at guiding search than conceptual features. In other words, larger numbers can be distinguished from smaller numbers not just because of any distinctive shape, but because the numerical symbols represent different numerical quantities. This result extends on Lupyan's (2008) groundbreaking work, and shows conceptual guidance of search occurs not just with unfamiliar characters such as the Old English thorn, but also with the numbers we see and use every day. The observed difference between magnitude and parity conditions was unexpected, but opened up the possibility for future research to determine whether the difference between the magnitude and

parity conditions was driven primarily by linear separability in number space, familiarity, or a combination of the two.

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## The Effects of Stress on Personal Moral Decision-Making

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**Abstract**—The purpose of this study was to examine the effects of stress and cultural orientation on moral decision-making. Previous research has shown participants under stress make less utilitarian decisions concerning personal moral dilemmas. It was expected participants would be more likely to cheat under stress. A second factor examined in this study was cultural orientation: individualism vs. collectivism. In this study, it was expected participants who scored higher on the individualist scale would be more affected if the stress was seen as personal, whereas collectivists would be more likely to be affected if the stress was seen as reflecting on the success of their group. Participants were asked to complete basic demographics, the Singelis self-construal scale to measure individualism/collectivism, and puzzles on which cheating could be observed. Participants were assigned to one of three conditions: group stress condition, individual stress condition, or control condition. A significant interaction between stress and individualism/collectivism on cheating was found. As expected, individualists were more affected by the individual stress condition and collectivists were more affected by the group stress condition.

*Keywords:* moral decision-making, cultural orientation, stress

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Previous research has found when individuals are placed under stressful conditions they make less rational decisions. This is especially true when participants are faced with personal moral dilemmas as compared to impersonal moral dilemmas (Youssef et al., 2012). Personal moral dilemmas are those in which individuals can be directly affected. Impersonal moral dilemmas are those in which individuals are not directly affected, although still involved in the situation. An example of a personal moral dilemma could occur if you were walking through a train station and the person in front of you drops a \$20 bill. Do you (a) run after them and return it, (b) keep it for yourself, or (c) leave it for the next person who comes along? An example of an impersonal moral dilemma could occur if you were walking through a train station, and someone in front of you drops a \$20 bill, and another individual picks up the \$20 bill. Do you (a) tell the individual to return the money to its proper owner (b) track down the person who dropped the \$20 bill and tell them where it is, or (c) keep walking and do not intervene? To illustrate this difference,

Youssef and colleagues found when participants were told they had to perform a mock job interview and were then given a moral dilemma task to complete, they chose less rational responses for questions concerning themselves versus questions concerning others.

Starcke, Polzer, Wolf, and Brand (2011) placed participants under stress by asking them to give a speech. After experiencing stress, experimenters gave participants a moral decision-making task. The task included both altruistic and egoistic response choices. For example, one of the items stated: "You have slightly scratched another car while parking. It is dark and nobody has seen you. Would you leave a message for the owner of the car?" (p. 213). The answer "yes" was the altruistic response whereas "no" was the egoistic choice. The results indicated there was no significant difference between the stressed and non-stressed participants in altruistic versus egoistical responses.

Research has indicated individuals under stress were more likely to make poor decisions

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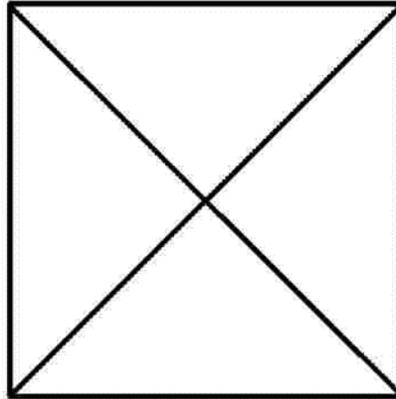


Figure 2. *One of the Euler puzzles used to measure cheating.*

when given a task (e.g. Starcke et al, 2011; Youssef et al., 2012). Youssef et al. (2012) found participants were more affected by personal moral dilemmas; therefore, if the task requires action by the participants, they should be more affected. Based on these findings, the present study reasoned if participants were given a task on which they could cheat, those under stress would be more likely to make a poor decision and cheat.

In addition to stress, the effects of culture on moral decision making were also examined in this study. A study conducted by Hofstede (1983) accessed results from a standardized questionnaire from over 40 countries. The questionnaire was used to measure attitudes and values. Hofstede analyzed the results and developed several dimensions of culture. One of the dimensions of culture identified by Hofstede was Individualism-Collectivism. He identified individualism as emphasizing goals directly involving the individual and not emphasizing goals concerning the group. Collectivism, therefore, was identified as being the opposite of individualism, with more emphasis placed on group success than on individual success.

Individualists also place an emphasis on a person's unique identity. Therefore, individualists are more likely to make personal choices, express themselves, and work toward self-actualization than collectivists. Collectivists tend to see themselves as a part of an in-group and are expected to prioritize the views, needs, and goals of the group rather than individual goals (Yu & Yang, 1994).

Individualists believe representations of the self reflect individual ability, characteristics, goals, and attributes (Markus & Kitayama, 1991). In order to define themselves, individualists tend to promote their own self-worth. One way of achieving this would be by achieving one's own goals, which could, in turn, lead to cheating if cheating is perceived as necessary for individual success. In contrast, collectivists tend to define themselves by the connection to the group and their individual worth comes through the group's achievements. Thus, achieving group success could lead to cheating if it is perceived as necessary for the group's success.

Woods and Jagers (2003) examined the relationship between cultural values and moral reasoning. The results of their study demonstrated moral reasoning of adolescents in African American cultures reflected the values of society. Specifically, they found the cultural values of affect, communalism, and spirituality were reflected in the moral reasoning of adolescents.

The work by Hofstede (1983) and Woods and Jagers (2003) led to the question of how cultural orientation may affect individuals under stress. Therefore, it was hypothesized individuals under stress would react differently based on their values. Specifically, participants who scored highly in the collectivist measure would experience more stress from the group stress condition than from the individual stress condition and as a result, cheat. Those participants who scored highly in the individualist category would experience more stress from the individual stress condition and as a

result, cheat.

In addition to the effects of stress and cultural orientation, previous research has left gaps in the study of personal moral decision-making because of the methods used in many studies. For example, the study by Youssef et. al (2012) utilized questionnaires which included some extreme examples of personal moral dilemmas. One of these extreme dilemmas described a situation in which an airplane on which you are a passenger crashes and you are stranded with several other passengers. Is it appropriate for you to kill an injured boy and eat him so you and another passenger can survive? This moral dilemma is one which most people will never encounter. Therefore, the results from this study may not apply in daily situations. The use of unlikely situations to study moral decision making is unfortunately common in the literature (e.g., Bartels & Pizarro, 2011; Broeders, van den Bos, Muller, & Ham, 2011).

The current study examined the effects of stress on personal moral decision-making and also the effects of cultural orientation on stress. The stress condition was either an individual stress condition, group stress condition, or control condition. Participants were read different instructions based on their stress condition. The cultural orientation was either individualist or collectivist. The dependent variable was the extent of cheating on a cognitive assessment test. The hypothesis was individuals under stress would be more likely to cheat, and those with an individualist cultural orientation would be more affected by an individual stress condition, whereas collectivists would be more affected by a group stress condition.

## Method

### Participants

This study had 68 (59 women, 9 men) participants, between 18 and 40 years of age ( $M = 19.26$ ;  $SD = 1.33$ ). Sixty percent of the participants were Caucasian, 15% Hispanic, 10% African-American, and 15% Asian. Sixty percent were freshmen, 30% sophomores and 10% juniors. These participants were members of the Psychology Department's Human Subjects Pool, and received extra credit in their introductory psychology courses for participating in this study.

### Materials

Participants completed a basic demographics form including four questions regarding age, class designation, sex, and ethnicity.

The Singelis (1994) self-construal scale (SCS) was utilized to measure individualism/collectivism. The questionnaire had 22 questions, half of which were individualist examples (IndSC) and half of which were collectivist examples (InterSC). An example of an individualist statement was, "I enjoy being unique and different from others in many respects." An example of a collectivist statement was, "Even when I strongly disagree with group members, I avoid an argument." Participants rated each example on a scale from 1 (strongly disagree) to 7 (strongly agree). Singelis (1994) reported Cronbach's alpha reliabilities of .73 and .74 for the IndSC scale and .69 and .70 for the InterSC scale. InterSC scores predicted participants' tendency to make situational attributions for behaviors described in short vignettes, supporting the predictive validity of the SCS.

Euler puzzles were utilized to measure the amount of cheating (Chapman, 2011). For an example of an Euler puzzle, see Figure 2. Participants were given six puzzles, two of which were unsolvable without cheating. In order to complete the puzzles, the participant had to trace over every line of the puzzle without picking up his/her pencil and without tracing over a line he/she had previously traced. Cheating was observed if the participant traced over every line of the unsolvable puzzles.

### Design and Procedure

This experiment used a 2 (Cultural Orientation) x 3 (Stress Condition) factorial design. Cultural orientation was divided into individualism and collectivism. Stress types were individual stress, group stress, and a no stress control condition. Permission from the IRB was obtained prior to conducting the study.

Each group of participants was randomly assigned to a stress condition. The conditions included an individual stress condition, group stress condition and control condition. Upon arrival, the participants were asked to take a seat and to provide informed consent. A packet including basic demographics, the Singelis self-construal scale, and the Euler puzzles was given to each participant to

complete. Each participant received the same packet of materials in the same order.

The experimenter read instructions to the participants based on which group they were assigned to. The participants in the individual stress condition were told

“Please complete the basic demographics, questionnaires and puzzles. Your ability to solve the puzzles serves as an indication of how well you will do in college. At the conclusion of the study, the results and full purpose will be displayed on the bulletin board next to the psychology offices. When you are finished, you are free to leave. Thank you for your participation.”

Those in the group stress condition were told,

“Please complete the basic demographics, questionnaires and puzzles. Your ability to solve the puzzles will determine whether the caliber of students at UNK is sufficiently high enough for us to qualify for a grant from the Susan Buffet Foundation. At the conclusion of the study, the results and full purpose will be displayed on the bulletin board next to the psychology offices. When you are finished, you are free to leave. Thank you for

your participation.”

Participants in the control condition were told, “Please complete the basic demographics, questionnaires and puzzles. At the conclusion of the study, the results and full purpose will be displayed on the bulletin board next to the psychology offices. When you are finished, you are free to leave. Thank you for your participation.”

Participants then completed basic demographic questions, the Singelis Self-Construal Scale, and six Euler Puzzles. After the participants completed the packet, they handed it to the experimenter and exited the room. The experiment lasted approximately 20 minutes.

### Results

Participants were divided into the Individualist/Collectivist categories by calculating the total ratings given to Individualist/Collectivist statements. These scores were calculated by summing the ratings for the Individualism questions and summing the ratings for the Collectivism questions and comparing the two. The section with the higher score determined whether the participant was

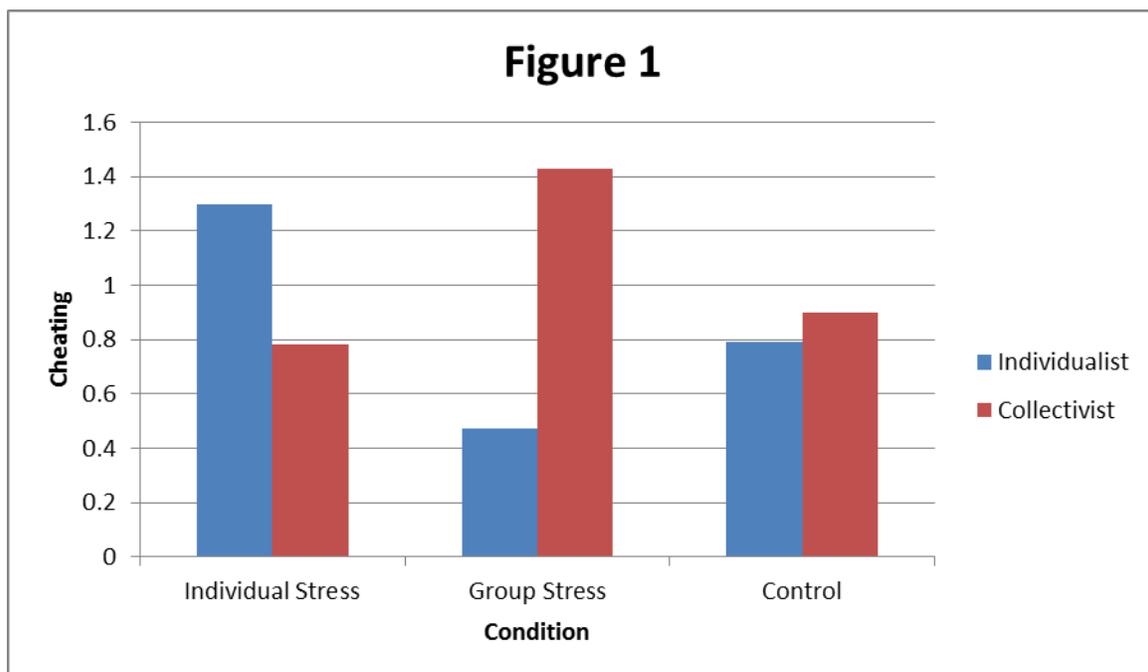


Figure 1. *Interaction of stress and individualism/collectivism on cheating.*

designated as an Individualist or a Collectivist. Overall, there were 41 Individualists and 26 Collectivists; one participant scored evenly for cultural orientation. Cheating was measured by whether participants traced over every line in the unsolvable puzzles; scores 0-2 were given for cheating. A one-way ANOVA was performed. No significant main effect of stress on cheating was found,  $F(2, 61) = 0.76, p = 0.93$ . No significant main effect of individualism/collectivism on cheating was found,  $F(2, 61) = 0.19, p = 0.70$ . However, the results did show a significant interaction of stress and individualism/collectivism on cheating,  $F(2, 61) = 3.64, p = .032$  (see Figure 1). Individualists in the individual stress condition had a higher rate of cheating ( $M = 1.30, SD = .27$ ) than collectivists in the individual stress condition ( $M = .78, SD = .29$ ). Collectivists in the group stress condition had a higher rate of cheating ( $M = 1.43, SD = .32$ ) than individualists in the group stress condition ( $M = .47, SD = .21$ ). No significant difference was found between individualists and collectivists in the no-stress control condition  $F(2, 61) = .08, p = .93$ .

### Discussion

The original hypothesis was groups under stress would be more likely to cheat. The results of the current study did not support this hypothesis. Starcke et al. (2011) also did not find significant effects of stress on responses to moral dilemmas. It was also hypothesized individualists would be more affected by the individual stress condition than collectivists would be. The results of the study supported this hypothesis. The final hypothesis was collectivists would be more affected by a group stress condition than individualists would be. The results of the current study also support this hypothesis. This agrees with the research by Youssef et al. (2012), which found participants under stress made less utilitarian judgments when given personal moral dilemmas.

Interestingly, the results also showed individualists in the group stress condition had a mean rate of cheating lower than individualists in the control condition. Collectivists in the individual stress condition also had a lower rate of cheating than collectivists in the control condition. This suggests when an individualist is told their performance affects the success of the overall group the

individualist is less affected. Also, when a collectivist is told their ability will determine their personal success, the collectivist is less affected. One possible explanation for this may be because in the control condition, the participants were not told how their ability would determine their success. Therefore, those participants who were individualists were allowed to think their personal success could be affected, and collectivists were allowed to think their group success might be affected.

The implications of the current research are factors, such as cultural orientation, can affect personal moral decision-making. Individuals under stress may be more likely to cheat when given a task on which they feel pressure to perform well. When a task is framed in a manner threatening the success of a group or individual, certain people may be more affected than others. This could be important in the work force, where people often work on projects both individually and in groups.

Previous research on moral decision-making has utilized scenarios, whereas the current study looked at participants' performance when placed in a real life situation. Therefore, the results of the current are more generalizable to the actions of individuals in everyday stress situations. Also, previous studies using utilized moral dilemmas may not have provoked real stress in participants, as there was nothing at stake. The current study placed individuals in a situation in which something was at stake, making the stress more real and more likely to have an effect.

One of the limitations of the current study was very few men participated so the results may be seen as reflective of the moral decision making of women rather than people in general. Future research could recruit more male participants and analyze any possible gender differences concerning stress and personal moral decision-making.

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## The Relationship between Success Modeling and Fear of Success in College Students

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**Abstract**—This study examined fear of success (FOS) in relation to biological sex and success modeling. Students ( $N = 108$ ) from a small, liberal arts college completed self-report measures of FOS, success modeling, and demographic factors. It was hypothesized that: (a) no sex differences would be found for FOS and (b) success modeling would be negatively related to FOS. Results indicated female participants reported higher levels of FOS than male participants and success modeling by parents but not by peers was negatively related to FOS. Thus, despite recent societal evidence of equitable achievement, women may still experience higher levels of FOS than men. Also, parental success modeling may be more influential than peer success modeling among college students.

*Keywords:* fear of success, success modeling, college students, sex differences

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Fear of success (FOS) is based on the expectation that being successful will have negative consequences. Horney (1936) proposed FOS stems from the belief that being successful will result in dislike and resentment from others and thereby loss of affection and approval. Horner (1972) specifically conceptualized FOS as resulting from the gender role stereotype that being competitive is a positive trait in men, but a negative trait in women, resulting in a fear among women that being successful may result in true or perceived loss of femininity. This belief causes an inner conflict between the desire for success and the fear of challenging a social norm about who can achieve success or what it means to achieve success (Tomkiewicz & Bass, 1999). Horner (1972) conceptualized FOS as resulting from a stable, enduring, internalized motive. Researchers since have been divided in considering FOS a stable personality disposition of early origin, versus a situationally determined factor (Bremer & Wittig, 1980).

Ultimately, FOS may involve avoiding success and sacrificing personal goals. Those high in FOS may minimize their chances of success by avoiding competition, minimizing their efforts,

belittling themselves, or trying to appear less intelligent and capable than they are. Research has linked high FOS to diminished performance, especially in competitive situations (Horner, 1972; Zuckerman & Allison, 1976). Therefore, this concept is particularly relevant to college students among whom FOS can result in avoidance of achievement in competitive academic environments. FOS could explain why some students maintain educational and career goals beneath their abilities or engage in self-sabotaging academic behavior. It is important to examine correlates of FOS, as they have the potential to influence success and achievement.

Whereas Horner (1972) proposed gender was a main factor contributing to FOS, we find it important to reexamine FOS in light of important historical and societal changes that have occurred. For example, in recent times, the majority of associate's, bachelor's, master's and doctoral degrees were earned by female students (U.S. Department of Education, 2010) and the number of businesses owned by women is increasing (U.S. Census Bureau, 2007). Compared to the more male-dominated society in which Horner conceptualized FOS, achievement among male and

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female workers and students within society has become more equitable. Thus, it may be that FOS among women has decreased in proportion to the increased numbers of women with advanced degrees and positions of power within the workforce (Santucci, Terzian, & Kayson, 1989; Tomkiewicz & Bass, 1999). One possible explanation of women's increased achievement is offered by McCrea, Hirt, and Milner (2008), who found women value effort more than men and are therefore less likely to engage in self-handicapping behaviors. Another possible explanation is the growing number of female graduates and employees has increased the amount of real or perceived social support available to successful women and thereby decreased the "trade-off dilemma" that characterizes FOS (Ivers & Downes, 2012, p. 385).

Many researchers have focused on sex and gender as predictors of FOS, seeking to question or confirm Horner's (1972) conceptualization of FOS as more prevalent in female participants. However, the results have been inconsistent (Levine & Crumrine, 1975). Like Horner (1972), Santucci et al. (1989) found female students experienced more FOS than male students in the college setting. Ishiyama and Chabassol (1984) found the same pattern among high school students. Conversely, Mandal (2008) found FOS was more prevalent among college-age male students than female students. Similarly, André and Metzler (2011) found male elite athletes endorsed more FOS than female elite athletes. Finally, some studies found no significant differences between male and female participants on scores of FOS in an academic setting (Levine & Crumrine, 1975; Thomson, 1990).

In order to better understand FOS and to promote success-seeking behaviors among students, it is necessary to examine factors other than sex and gender that may predict FOS more accurately and consistently. Considering the emphasis on gender roles and social stereotypes in definitions of FOS, it seems plausible that FOS is related to social modeling of success. Few studies have specifically examined the effect of success modeling on FOS. The idea that peer and parental success modeling is a predictor of FOS has been implied, but rarely examined by extant research.

The present study aims to contribute to the limited knowledge base on this topic.

The concept of success modeling was inspired by three studies in which Balkin (Balkin, 1986; Balkin, 1987; Balkin & Donaruma, 1978) examined the influence of family and friends on FOS scores in female and male college students. Levels of FOS among male students were negatively correlated with college enrollment of peers and parents (Balkin, 1986; Balkin & Donaruma, 1978). Likewise, levels of FOS among female students were negatively correlated with college enrollment of peers (Balkin, 1987). To our knowledge, no other research has examined the relationship between parental and peer success modeling and FOS. However, the importance of success modeling has been implicitly acknowledged. For example, Thomson (1990) found the surprisingly high FOS scores of a subsample of South African high school students could be accounted for by the attitudes and behaviors of their peers. Interviews with participants revealed successful students were physically harassed by their peers, thereby establishing a negative model of success.

The present study examined sex differences and success modeling in relation to FOS in college students. We operationalized success modeling as the number of one's parents and peers "who have gone, are going, or are expecting to go to college" and the number of one's parents and peers believing college is "admirable and important" (as reported by the participant). The findings of this study may be useful for creating programs to promote success-seeking behaviors because, unlike biological factors such as sex, success modeling can be modified. Interventions utilizing exposure to successful role models could help decrease FOS, and in turn promote success-seeking beliefs and behaviors. Our specific hypotheses were that (a) based on greater equity in achievement between male and female workers and students in current society, there would be no difference between male and female participants in levels of FOS, and (b) for both female and male participants, lower levels of success modeling (meaning lower levels of college enrollment and college interest of peers and parents) would predict higher levels of FOS.

## Method

### Participants

The sample consisted of 108 undergraduate students from a religiously-affiliated, private liberal arts college. Participants were recruited from introductory psychology courses. Seventy-one participants were female, 36 were male, and one declined to state. The sample was 56.5% Caucasian, 10.2% African American, 10.2% Hispanic, 3.7% Native American, 13.9% Asian, and 4.6% other or multiple ethnicities (0.9% declined to state). In regards to their family's socioeconomic status, 3.7% of participants described their status as lower, 11.1% as lower-middle, 26.9% as middle, 45.4% as upper-middle, and 12% as upper (0.9% declined to state). The sample was 58.3% freshmen, 15.7% sophomores, 18.5% juniors, 4.6% seniors, and 1.9% other (0.9% declined to state). All participants were between 18 and 24 years of age ( $M = 18.76, SD = 1.14$ ).

### Measures

**Demographic factors.** Biological sex, age, major, year in school, ethnicity, and socioeconomic status were assessed using a six-item demographic questionnaire. Biological sex, year in school, ethnicity, and socioeconomic status were closed-response items. Age and major were open-response items.

**Fear of success.** Fear of success was assessed with 14 items from Zuckerman and Allison's 27-item Fear of Success Scale (1976). The original scale correlates positively with Horner's (1972) projective measure of FOS, showing good convergent validity. The original scale has also shown acceptable levels of reliability, yielding coefficient alphas of .69 among male participants and .73 among female participants (Zuckerman & Allison, 1976). In the current study, participants completed the full 27-items, which yielded a coefficient alpha of .60. Item analysis was conducted to eliminate items negatively affecting internal consistency, and only the remaining 14 items ( $\alpha = .77$ ) were used in subsequent analyses. Of the 14 items, three were keyed positively (agreement reflecting high FOS, e.g., "When competing against another person, I sometimes feel better if I lose than if I win."), while the remaining 11 were keyed negatively (agreement

reflecting low FOS, e.g., "Achievement commands respect."). All items followed a 7-point Likert scale response format (1 = strong disagreement, 7 = strong agreement). Possible scores on the 14-item FOS scale range from 14 to 98, with higher scores indicating higher levels of FOS. In the present study, actual scores ranged from 30 to 77 ( $M = 52.81, SD = 11.06$ ). The 14-item version of the FOS scale has not been examined in relation to other measures of FOS.

**Success modeling.** We assessed success modeling with items inspired by a series of studies done by Balkin (Balkin, 1986; Balkin, 1987; Balkin & Donaruma, 1978). The survey consisted of five items, four of which assessed the four types of success modeling (college enrollment of peers, college interest of peers, college enrollment of parents, and college interest of parents), while the fifth item asked participants to clarify who they would be thinking about when answering the parent success modeling items. In the present study, 88% of participants indicated they were thinking about their biological mother and father, 5.6% indicated they were thinking about their single mother, 1.9% indicated they were thinking about their stepmother and father, 2.8% indicated they were thinking about their mother and stepfather, and 0.9% indicated they were thinking about their two adoptive parents (0.9% declined to state). The peer college enrollment item asked, "Of your peers, how many have gone, are going, or are expecting to go to college?" and the peer college interest item asked, "Of your peers, how many believe that going to college is admirable and important?" Response options for the peer success modeling items were: none, few, some, about half, many, most, or all. The parent college enrollment item asked, "Of your parent(s), how many have gone, are going, or are expecting to go to college?" and the parent college interest item asked, "Of your parent(s), how many believe that going to college is admirable and important?" The response options for the parent success modeling items were: none, one, or both.

### Procedures

The following procedures were approved by the Institutional Review Board of the university where this study was conducted. Participants were

presented with an informed consent form emphasizing participation was entirely voluntary; they indicated they had read and agreed to this form before beginning the survey. Each participant completed the surveys online in the following order: informed consent form, demographic questionnaire, Fear of Success Scale, and success modeling survey. The entire survey took approximately 10 minutes. Course credit in undergraduate psychology courses was offered as an incentive to participate. Each participant provided her or his name, email address, and course information in order to receive credit. Participants ( $n = 7$ ) who failed to complete all items on the Fear of Success Scale were contacted individually via email and invited to complete the survey. Participant's identifying information was removed from the data file after these email invitations were sent and course credit was awarded. Statistical analyses were conducted with de-identified data.

### Results

The first hypothesis was not supported. FOS was correlated with biological sex,  $r(105) = .34$ ,  $p < .001$  and a t-test revealed a significant sex difference in FOS within the sample. Female participants had significantly higher FOS scores ( $M = 55.61$ ,  $SD = 54.8^1$ ) than male participants ( $M = 47.58$ ,  $SD = 10.38$ ),  $t(105) = -3.76$ ,  $p < .001$ . Cohen's  $d$  was 0.77, representing a medium to large effect size. No other demographic variables were significantly related to FOS.

The second hypothesis was partially supported. FOS was correlated with parent college enrollment,  $r(106) = -.19$ ,  $p = .05$ . A simultaneous

regression analysis including all four success modeling variables indicated parent college enrollment was the only significant predictor of FOS (see Table 1). A separate regression analysis including parent college enrollment as the only independent variable showed parent college enrollment explained 2.7% of the variance in FOS scores,  $F(1, 106) = 3.94$ ,  $p = .05$ .

### Discussion

The present study investigated FOS using 14 items from Zuckerman and Alison's Fear of Success Scale (1976). Even though past research has shown sex differences in FOS based on socialized gender roles (Horner, 1972; Santucci et al. 1989), we hypothesized the current sample would not show significant sex differences due to more equitable achievement between women and men within society (U.S. Department of Education, 2010; U.S. Census Bureau, 2007). Nevertheless, biological sex was significantly related to FOS in the current sample, with female participants scoring significantly higher than male participants. This is consistent with some early studies (Horner, 1972; Zuckerman & Allison, 1976) but inconsistent with more recent studies (André & Metzler, 2008; Mandal, 2008; Thomson, 1990). One possible explanation for this finding involves the difference between beliefs and behaviors. That is, although women may hold more negative beliefs about success, they may engage in similar success-seeking behaviors (such as pursuing higher education or owning a business) as men. These behaviors may be influenced by other beliefs, such as the value one places on effort (McCrea et al., 2008). It is also possible the present sex difference

Table 1. Simultaneous Regression of Success Modeling on Fear of Success

Success Modeling	$B$	$SE B$	$\beta$	$t$
Peer college enrollment	.06	1.13	.01	.05
Peer college interest	1.75	1.38	.14	1.27
Parent college enrollment	-3.89	1.95	-.22	-2.00*
Parent college interest	-1.91	5.59	-.04	-.34

\* $p < .05$

was found due to characteristics of the sample. Because participants were recruited from a religiously-affiliated private college, it is possible they were more likely to endorse traditional sex role stereotypes, resulting in higher FOS scores among female participants. This possibility suggests FOS may be more prevalent among women only in certain segments of society.

Based on Balkin (1986, 1987) and Balkin and Donaruma's (1978) findings, our second hypothesis was higher levels of success modeling would predict lower levels of FOS. According to the correlation and regression analyses, parent college enrollment was the only domain of success-modeling related to FOS. Parent college enrollment negatively predicted FOS, meaning that having fewer parents who had gone, were going, or were planning to go to college was associated with having higher FOS scores. Parent college enrollment accounted for a small, but significant proportion of the variance in FOS. This offers insight into one situational rather than dispositional factor related to FOS.

Peer success modeling was unrelated to FOS. This suggests parental modeling of success may be more influential in FOS among college students than peer modeling, which was not significantly related to FOS in this study. This is a surprising finding considering that the strength of peer influence has been well-established in other areas, such as the decision to use drugs (Allen, Donohue, Griffin, Ryan, & Turner, 2003). One possibility is that peer influence was minimized within the present sample because the majority of participants were first-year college students. Thus, these students were in a transitional peer phase, leaving old friends and making new friends, and as a result may have experienced a temporary decrease in peer influence and a temporary increase in parental influence.

### Implications

Though societal evidence shows achievement inequality has decreased in recent years, the present findings suggest female college students may still be inhibited by higher FOS than male college students. Given the nature of the current sample, it may be that FOS is particularly prevalent among women in religiously or

politically conservative circles. Interventions highlighting successful female role models might help ensure that women are performing and achieving at their full potential. Furthermore, the predictive significance of parent college enrollment suggests FOS is influenced by parents, but not by peers. Therefore, success-promoting interventions should recognize the important role parents play in modeling success-seeking behaviors for their children.

### Limitations and Directions for Future Research

Caution should be used in generalizing the results of this study to populations other than that represented by the sample. Participants were recruited from a small, religiously-affiliated private school in a suburban setting and were mainly Caucasian, first-year students from two-parent, upper-middle class homes. Although the present study suggests biological sex and parent success modeling were related to FOS within this population, it is possible other correlates and predictors of FOS might be found within different or more diverse populations.

Because parent college enrollment was the only domain of success modeling predictive of FOS, and only accounted for a small amount of variance, it may be that FOS is more strongly related to personality factors than to environmental factors such as success modeling. It is possible FOS (or a personality conducive to FOS) is genetically-influenced, since FOS was predicted by success modeling behaviors of parents, but not peers. However, it is also possible parents are simply more influential than peers in terms of the gender roles and social stereotypes that one ascribes to. An explanation of FOS incorporating other personality factors could also help explain the inconsistent findings with regard to biological factors (i.e., sex). For example, future research could examine the relationship between FOS and the personality dimension of cooperation (typically construed as feminine) versus competition (typically construed as masculine) to bring clarity to the inconsistencies. Recent research has suggested women and men may experience different types of fears about success, and have criticized existing FOS measures, including the scale used in this study (André & Metzler, 2011;

Metzler & Conroy, 2004). Overall, the results of this study suggest FOS may still be inhibitory for some groups within an academic setting and is worthy of continued research.

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## The Effects of Self-Talk on Catching Mistakes in Writing

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**Abstract**—The practice of self-talk, also known as self-reflection, is a common technique than can be used to aid in problem solving. This study explores the relationship between self-talk and problem solving – specifically identifying grammatical errors. It was hypothesized that participants who engaged in self-talk would make fewer mistakes than those in the silent group or the control group. Results of the experiment suggest self-talk might be a useful technique for maintaining attention during a problem solving task .

*Keywords:* self-talk, problem solving, grammatical errors, maintaining attention

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Self-talk is defined by *Jonas: Mosby's Dictionary of Complementary and Alternative Medicine* as “internal monologues that can have a positive or negative influence upon the individual” (*self-talk*, 6449). Another definition provided in *Collins English Dictionary* describes self-talk as “the act or practice of talking to oneself, either aloud or silently and mentally” (*self-talk*). A third definition given by *Dictionary.com's 21st Century Lexicon* describes self-talk as being “anything said to oneself for encouragement or motivation, such as phrases or mantras; also one's constant internal conversation” (*self-talk*). In order to gain insight into possible benefits of self-talk, research into the broader effects of self-talk was examined.

Many people engage in self-talk; however, children engage in self-talk with more frequency, in part because they are more comfortable with articulating their thoughts aloud (Stonecypher, 2012). Jean Piaget (1959) worked extensively with children to gain insight into their use of self-talk, described by him as private speech. Piaget explained young children, up to roughly the age of seven years old, were seemingly unable to keep their thoughts to themselves. They constantly narrated their thoughts and behaviors to themselves and anyone around them. He described the private speech of a child as a precursor to the socialized inner monologue of an adult. For an adult private speech “calls into being an inner speech addressed throughout to a hypothetical

opponent, whom the imagination often pictures as one of flesh and blood” (p. 39). The purpose of this private speech allows a socialized adult to compare a thought to the mental image of another person for further analyzation and refinement. For children private speech “is [directed] first and foremost to himself, and that speech, before it can be used to socialize thought, serves to accompany and reinforce individual activity” (p. 38-39). In essence, Piaget theorized children use private speech in order to self-regulate specific behaviors before achieving a more social form of private speech.

The reason why self-talk declines as children age is not fully understood, but one possibility may be they learn to internalize the thought monologue as they get older, as evidenced by the adaptive use of self-talk in aging children. Young children use external/verbal self-talk frequently in order to review information or make choices, older children in preschool use self talk more selectively and much more quietly as they learn to internalize the process (Berger, 2008; Winsler et al., 2000). By adulthood the use of external/verbal self-talk has diminished significantly, whereas the use of internal or nonverbal forms of self-talk take precedence (Berger, 2008; Stonecypher, 2012). Although further theories have sought to clarify or even challenge Piaget's theories on the subject of private speech, it remains clear its use and change from an external to an internal form of communication is

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an important part of the developmental process.

Social feedback may also factor into the role of effective self-talk in the developmental process. Morin (2005) describes self-talk as a means of gathering information about the self, which can then be used to make connections about the self relative to the rest of the world. Burnett (1999) provides support for this description, as it was found the type of feedback teachers gave to middle school students influenced their self-talk and performance. Students who received positive feedback from teachers were more likely to utilize positive self-talk. This positive self-talk resulted in development of positive self-concepts related to specific academic skills, which lead children to believe they performed well and enjoyed using the skills. However people who engage in self-talk must remain objective and attentive to the task at hand in order to benefit from it. If self-talk is not relevant to the task, then it serves as a distraction rather than an aid (Morin, 1995). Participants in the study by Burnett (1999) were observed as engaging in self-talk focused specifically towards reviewing their actions and evaluating their personal sense of competency. The results of Morin (1995) indicate self-talk may not need to be so specific and that initial benefits stem from self-talk being relevant to the task.

Studies exploring the effects of manipulating self-talk were not as common as studies exploring the effects of concepts linked to self-talk, such as self-reflection. The Broca area, the region of the brain responsible for articulating and organizing speech in human beings (Broca Area, 2012), is also responsible for producing both inner (internal monologue/self-talk) and outer speech (words and language). Morin (2011) found the Broca area became more active in individuals who were engaging in self reflection or internal monolog. In a separate study, Xu (2011) had participants determine if a random sentence was meaningful or just gibberish. It was found participants with a higher level of personal insight into their cognitive skills were able to distinguish between the two with greater speed and accuracy than participants who had a lower level of insight. It was also expected participants who reported a lower need for self-reflection would perform better at similar tasks than participants who reported a higher need for reflection. Results indicated the need for reflection and level of insight did not have a strong correlation in performance, indicating the level of personal insight may not have been influenced by self-reflection/self-talk. However, it was suggested

introspection and its potential effects on performance should be examined separately from insight and its effects.

Much of the previous research sought to examine the effects of self-talk; however, many of these effects were as responses or reactions to other variables. Though we know steps can be taken to elicit self-talk or modify it, very little of the previous research was dedicated to manipulating self-talk itself. Research indicated positive feedback elicited positive self-talk and resulted in an improved self-concept of academic skills (Burnett, 1999), but it remains to be seen whether directly influencing self-talk would have resulted in similar effects. Similarly Xu (2011) indicated high personal insight resulted in proficiency with language-based tasks without being able to clearly determine whether self-reflection had any influence on the results. By examining self-talk directly, the goal of this experiment was to better understand the direct influences of self-talk on other cognitive skills. Specifically, how manipulating self-talk affected the abilities of participants to recognize and correct mistakes in a written passage. It was hypothesized that participants who spoke to themselves out loud while performing a writing exercise would make fewer mistakes than participants who remained silent or worked normally.

## **Method**

### **Participants**

All participants were provided with informed consent prior to participation in the experiment. Students were recruited for this study through the psychology department subject pool. Participants included 46 adults consisting of men (28.3%) and women (71.7%) between the ages of 18 to 51 ( $M = 21.9$ ,  $SD = 6.99$ ). Participants included Caucasians (60.9%), African Americans (23.9%), Asians (8.7%), Hispanics (4.3%), and Indians (2.2%). The Institutional Review Board at Kennesaw State University approved all experimental procedures before the study was initiated.

### **Materials and Procedure**

Participants were randomly assigned to one of three groups and instructed to complete a basic writing task. All three groups participated in the experiment in a private lab located away from observers. Each of the three groups received different instructions that reflected one of three levels of the independent variable; a) engaging in

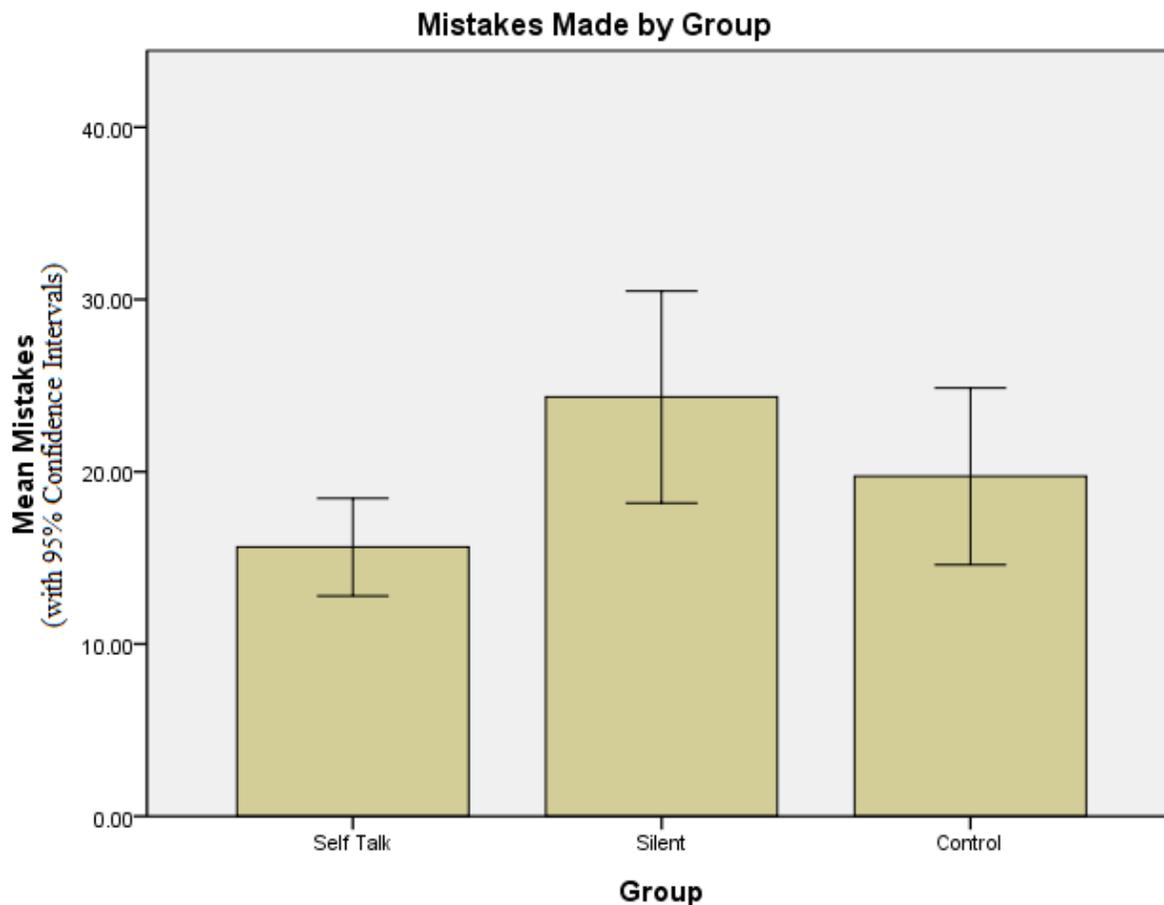


Figure 1. Bar Chart of Mean Mistakes Made by Group

self talk, b) remaining silent, or c) receiving no special instructions (control). For the purposes of this study, self-talk was defined as any behavior that met the following criteria: verbal or nonverbal communication directed at the self, and having desired or intended meaning (as opposed to speaking nonsense or simply creating noise). Participants were instructed to carefully read the unique instructions provided. The self-talk group received instructions directing them to speak to themselves out loud as they worked and to refrain from any sort of internal monologue. Their thoughts did not have to be related to the task, as long as they were vocalized. The silent group received instructions directing them to remain silent throughout the experiment, refraining from any forms of vocal communication. Such vocalizations included sighing, humming, or even mouthing the words silently (as such processes may have been distracting to the internal thought process or otherwise influenced it). The control

group was instructed to vocalize at a level they felt comfortable with, and to behave as they normally do in private. Participants in all groups were given permission to ask the experimenter any questions they had.

Participants were instructed to proofread three written passages (included in Appendix A) while identifying and marking common writing errors (i.e., spelling, grammar). Once all errors had been identified, participants were instructed to rewrite the corrected passages by hand on provided sheets of paper. Participants were also instructed to only correct specific categories of errors within the passages. Passage A focused on correcting 15 spelling errors while leaving 5 grammatical errors uncorrected. Passage B focused on correcting 15 grammatical errors while leaving 4 spelling errors uncorrected. Passage C focused on correcting all spelling and grammatical errors numbering 15 in total.

To measure the dependent variable,

performance on a cognitive task, the rewritten passages completed by participants were reviewed to determine how many known mistakes (those already present in the passages) remained. Between the three passages there were 45 known mistakes to be corrected, and 9 mistakes to be identified and left unaltered resulting in a sum of 54 total known mistakes. Any new mistakes made by participants when rewriting each passage were also counted and measured. The number of mistakes left uncorrected in each passage was added to the number of new mistakes made, and the totals for each of the three passages were added together to obtain the final number of mistakes made. This total represented the dependent variable. The corrected passages used to evaluate participant scores are included in Appendix B.

It is important to note that the three passages were all part of the same condition. Three distinct passages were used for the experiment instead of one large passage because the purpose of the experiment was to examine the influence of self-talk on catching mistakes, not how well participants could proofread. The purpose of instructing participants to only correct spelling errors in one passage and only correct grammatical errors in another was to require participants to not only identify an error, but to actively decide whether to correct it or to rewrite it incorrectly (in addition to remembering their choice when it came time to rewriting each passage). The intended result was to create an increased need for self-reflection and decision making in participants that would not be present if they were merely proofreading and rewriting each passage. It is also important to note participants were not aware of the number of errors contained within each passage, only that errors were present.

## Results

The hypothesis of this experiment predicted participants who engaged in self-talk while working on language tasks would make fewer mistakes than participants who were silent. A single factor ANOVA test was used to determine whether the results had any significance. A post-hoc Tukey test was conducted to determine the effectiveness of each level of the variable. The number of mistakes made differed significantly across each of the three groups,  $F(2, 43) = 3.762, p = .031$ . Post-hoc Tukey test shows that between the three groups, the self-talk group ( $M = 15.62, 95\% \text{ CI } [12.79, 18.46]$ ) made fewer mistakes overall,

performing significantly better than the silent group ( $M = 24.33, 95\% \text{ CI } [18.18, 30.49]$ ). The control group ( $M = 19.73, 95\% \text{ CI } [14.60, 24.87]$ ) did not score significantly higher or lower than the other groups. The self-talk group did make fewer mistakes than the control group, however the results between the two were not significant. It is of interest to note that the control group was not significantly different from either the self-talk or the silent group, though the self-talk group did experience a significant benefit over the silent group. See Figure 1 for a visual representation of results.

## Discussion

Some limitations may have had minor effects on the study. Some participants attempted to reword entire sentences in order to accommodate an error or attempted to remove an error entirely instead of changing it. Future instructions should be clearer about how errors occur in a given sentence, and the only part of a sentence requiring change is the error itself. In order to minimize the effects of this confusion during scoring, a corrected mistake that did not match the scoring guide was considered acceptable as long as the changes made corrected the mistake without changing the meaning of a sentence.

Another potential limitation was whether the sample accurately represented variation in the examined population. Because recruitment was done through the psychology subject pool, participants tended to come from similar backgrounds. With a sample size of 71.7% females, 60.9% Caucasians, and 56.5% between the ages of 18 and 19 years old, the distribution of participants could have presented a limited bias.

A third potential limitation involved how fluent participants were in English. Although participants were not asked to reveal such information, it is possible some of the participants were not native English speakers or writers and would have experienced specific difficulty in identifying errors in English spelling and grammar. However, due to participants being recruited through a university provided subject pool, the fluency of participants may not have actually been a significantly limiting factor.

A number of conclusions can be drawn from this study. Participants in the self-talk group were able to catch more mistakes and made fewer mistakes overall without the need for training in the technique of self-talk. It is possible participants are already trained in creating and guiding self-

thought as they have done throughout their lives. The development of private speech from a constant verbal stream to an internalized monolog would have provided the framework for self-talk utilized by all participants (Piaget, 1959). The self-talk group was the only group given instructions to talk out loud. The control group and the silent group would have at least utilized an internalized self-talk while they worked. The improvements experienced by the self-talk group can still be explained, even though all three groups were engaged in some type of self-talk.

One explanation is involving more of the brain allowed for increased focus in participants who engaged in self-talk. By using the Broca area to organize thoughts into functional words and speech the reflection process may have been treated like a conversation with the self, requiring more mental activity (Morin, 2011; Piaget, 1959). In addition, this kind of self-talk would naturally aid in focusing on a problem as long as the self-talk was relevant to the task (Morin, 1995). Results provided by participants suggested those who were engaged in self-talk were more focused on the details of the tasks they were completing and made fewer mistakes as a result.

The primary benefit of this study was the insight gained from the direct manipulation of self-talk as a variable, allowing the conclusion that self-talk did provide an influence in the participants. As discussed by Xu (2011), reporting a low need for introspection did not correlate with having a high level of personal insight and performing well on a language task. It was suggested there was a need to determine whether there is a correlation between self-reflection and personal insight. The results of the current study did not provide direct evidence of such a correlation, however they did provide evidence that self-talk had an influence on performance of a specific task. The conclusions of Burnett (1999) suggested positive feedback to students resulted in positive self-talk, leading to increased self-concept and performance in academic skills such as math and reading. Results of the current study also suggested that manipulating self-talk itself resulted in increased academic performance in a language based task involving both reading and writing.

Although the nature of the self-talk in each of these experiments was different, there may be some level of overlap between them worth examining. For example, is positive self-talk/self-evaluation still effective without the initial praise? Would undirected self-talk provide similar

improvements to self-concepts in students? Will these same effects be present after some form of delay between using self-talk and the completion of a problem? Because self-talk requires no specific training or instruction, it would also be beneficial to examine whether self-talk presents the same benefits when applied to solving mathematical or other cognitive tasks. The results of this study suggested self-talk can provide immediate benefits to problem solving and language skills. Though the full extent of these benefits cannot be determined without further examination, the hypothesis of this study has been supported by the results of the experiment.

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### Appendix A

#### Included Passages

##### Passage 1:

Please read the following passage carefully. As you read, be sure to note any **spelling** errors included within. The passage may include other types of errors, however for this passage you are only required to note **spelling** errors. When you are finished reading, please rewrite the passage with any necessary corrections made in the space below. If there are any non-specified errors in the passage, please rewrite them as they are. Correct only **spelling** errors.

For example: The sentence "They're dog ran after the rsuty truck." Would be corrected as "They're dog ran after the rusty truck." As "they're" is a grammatical error, not a spelling error.

##### Passage 1:

"With the internet becoming commonplace in the homes of people all over the world, many people have been taken up the practce of blogging. There are many benefits to strating your own blog. Blogging serrves as a type of virtual journal or news letter were you can share ideas, opnions, and even works of art with others. Starting a blog is easy, and many websutes will provide step by step instructions to help you create you're blog. Once your blog is up, you should decide on a theme or subiect you will cover. While your blog can cover a variety of subjects, it is sometimes a better idea to focus primarilly on one. Next you should ad some content such as picture's or custom entreis so that people have something to read when they visit your blog. And finaly, you need to have a way to attract readers. Try telling freinds or family about your blog, or asking other blog owners if you could write a submission for them so they can credit it back to you. Most inportant, dont forget to keep it updated!"

Please retype the corrected passage into the space below:

Passage 2:

Please read the following passage carefully. As you read, be sure to note any **grammatical** errors included within. The passage may include other types of errors, however for this passage you are only required to note **grammatical** errors. When you are finished reading, please rewrite the passage with any necessary corrections made in the space below. If there are any non-specified errors in the passage, please rewrite them as they are. Correct only **grammatical** errors.

For example: The sentence "They're dog ran after the rsuty truck" would be corrected as "Their dog ran after the rsuty truck" as "rsuty" is a spelling error, not a grammatical error.

Passage 2:

"Long ago there lives a scarecrow, standing tall and lonely over a field of wheat. The scarecrow did not like that he had no one to talk to, and so he tried to make friend with the creatures of the field. The scarecrow first tried to speak with the locust, but the locust was wary of the scarecrows' tall shape looming overhead. When the scarecrow came near, the locust quickly flies away. Undeterred, the scarecrow tried spoken with a family of mice who lived and fed in the field. But when the scarecrow came near, they mistaken the rustling of his movement for the slither of a snake. Fearing for they're lives, the family of mice quickly running away. The scarecrow was felt unhappy, but wanted to make one last attempt at finding a friend. He gazed overhead and see a flock of crows flying past. The scarecrow waves at them and cheered for them to swoop down and rest there wings, but the crows mistook him for a man. The scarecrow was very sad until the farmer come over and congratulated him. The farmer comented that he had watched the scarecrow's efforts in keeping the field safe from pests. The farmer reward the scarecrow with a new hat and a friendly smile, and the scarecrow felt better in knowing that he had be helping a freind after all."

Please retype the corrected passage into the space below:

Passage 3:

Please read the following passage carefully. As you read, be sure to note **any errors** included within. The passage will include multiple types of errors, and you will be required to correct all that you can find. When you are finished reading, please rewrite the passage with any relevant corrections made in the space below. Remember, for this passage you must correct **all errors**. If you are unsure of how to correct a mistake, you are permitted to go with your best guess.

For example: The sentence "They're dog ran after the rsuty truck" would be corrected as "Their dog ran after the rusty truck."

Passage 3:

"The importance of a healthy lifestyle has always been a prioritie through human history. While standards of health medicine and hygiene have changed overtime, people have always made attempts at taking care of themselves. These days we have a much clearer understanding of what it takes to be healthy? Exercise is a obvious first choice. Activities such as jogging or weight lifting will increase your strength and stamina, as well as helping you maintains a healthy physique. Eating fresh Fruits and vegetables in home cooked meals will give you the nutrients you need to grow stonger and even avoid disease. Personal grooming and bathing also help to maintain you're health, as well as making you more presentable. Physical health is not the only health too consider, however. Mental health should never be overlook! Maintaining a positive attitudes on life will help you learn to deal with stress, or even avoid it alltogether. Try not to think negative thoughts about yourself, as they will undermine your self-esteem. Its never shameful to express your emotions as well, and getting bad emotions out of your head will help bring you closer to a good mood again. Keep these things in mind: and staying healthy will be no sweat."

Please retype the corrected passage into the space below:

## Appendix B

## Corrected Passages

Passages included have the relevant mistakes corrected in bold, and the non relevant mistakes corrected in italics.

## Passage 1: Spelling

With the **internet** becoming commonplace in the homes of people all over the world, many people have been *taking* up the **practice** of blogging. There are many benefits to **starting** your own blog. Blogging **serves** as a type of virtual journal or news letter *were* you can share ideas, **opinions**, and even works of art with others. Starting a blog is easy, and many **websites** will provide step by step instructions to help you create *your* blog. Once your blog is up, you should decide on a theme or **subject** you will cover. While your blog can cover a variety of subjects, it is sometimes a better idea to focus **primarily** on one. Next you should **add** some content such as *pictures* or custom **entries** so that people have **something** to read when they visit your blog. And **finally**, you need to have a way to attract readers. Try telling **friends** or family about your blog, or asking other blog owners if you could write a **submission** for them so they can credit it back to you. Most **important**, *don't* forget to keep it updated!

## Passage 2: Grammar

Long ago there **lived** a scarecrow, standing tall and lonely over a field of wheat. The scarecrow did not like that he had no one to talk to, and so he tried to make **friends** with the creatures of the field. The *scarecrow* first tried to speak with the locust, but the locust was wary of the **scarecrow's** tall shape looming overhead. When the scarecrow came near, the locust quickly **flew** away. Undeterred, the scarecrow tried **speaking** with a family of mice who lived and fed in the field. But when the scarecrow came near, they **mistook** the rustling of his movement for the *slither* of a snake. Fearing for **their** lives, the family of mice quickly **ran** away. The scarecrow was **feeling** unhappy, but wanted to make one last attempt at finding a friend. He gazed overhead and **saw** a flock of crows flying past. The scarecrow **waved** at them and cheered for them to swoop down and rest **their** wings, but the crows mistook him for a man. The scarecrow was very sad until the farmer **came** over and congratulated him.

The farmer *commented* that he had watched the scarecrow's efforts in keeping the field safe from pests. The farmer **rewarded** the scarecrow with a new hat and a friendly smile, and the scarecrow felt better in knowing that he had **been** helping a *friend* after all.

## Passage 3: All Errors

The importance of a healthy lifestyle has always been a **priority** through human history. While standards of health medicine and hygiene have changed **over time**, people have always made attempts at taking care of themselves. These days we have a much clearer understanding of what it takes to be **healthy**. Exercise is **an** obvious first choice. Activities such as jogging or weight lifting will increase your strength and stamina, as well as helping you **maintain** a healthy physique. Eating fresh **fruits** and vegetables in home cooked meals will give you the nutrients you need to grow **stronger** and even avoid disease. Personal grooming and bathing also help to maintain **your** health, as well as making you more presentable. Physical health is not the only health **to** consider, however. Mental health should never be **overlooked!** Maintaining a positive **attitude** on life will help you learn to deal with stress, or even avoid it **altogether**. Try not to think negative **thoughts** about yourself, as they will undermine your self-esteem. **It's** never shameful to express your emotions as well, and getting bad emotions out of your head will help bring you closer to a good mood again. Keep these things in **mind**, and staying healthy will be no sweat.

## Special Features

### ***Conducting Psychological Analysis: Dramatic***

## **The Personality of Damon Salvatore from *The Vampire Diaries***

**Chelsey Snyder & Wind Goodfriend \***  
***Buena Vista University***

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**Abstract**—Vampires are compelling characters, and vampire legends have endured for centuries. Modern versions of vampires are quite popular in today's pop culture; this paper analyzes the personality of one of the most popular vampire characters on television today.

*Keywords:* vampires, pop culture, personality

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*The Vampire Diaries* is a best-selling novel series written by L. J. Smith and was adapted into the number one show on the CW Network in 2013, out rating other shows on ABC and NBC for 18-34 year olds (Bibel, 2013). What makes this show any different than all of the other vampire-related TV shows, like *True Blood*, *Angel*, *Buffy the Vampire Slayer*, *Moonlight*, or *Being Human*, just to name a few? This paper analyses the character of Damon Salvatore from psychoanalytic and new-Freudian perspectives.

*The Vampire Diaries* (TVD) centers on the lives of orphaned Elena Gilbert and two very handsome vampire brothers, Stefan and Damon Salvatore. The Salvatore brothers have been vampires since 1864, when Katherine Pierce seduced both brothers who were shot and killed trying to save Katherine. In most vampire lore, when a person dies with vampire blood in his/her system, it causes him/her to become a vampire. TVD focuses on the relationship developing among Elena, Stefan, and Damon, and how that relationship is built and torn down through various other characters in the series. Although the relationship between these three characters does change from season to

season, the one constant character personality through it all is Damon.

#### **Psychoanalytic Theory**

From a psychological perspective, Damon is a fascinating creature. The first personality characteristic revealed about Damon is proposed by Alfred Adler in the concept of the inferiority complex (cited in Ansbacher & Ansbacher, 1956). The inferiority complex is characterized as an individual who is trying to compensate for feelings of inferiority, starting from the helplessness at birth. In the show's pilot episode, we are introduced to Damon when he surprises Stefan in his room at the Salvatore Mansion in Mystic Falls. Damon is dressed in an all-black ensemble, with jagged black hair and a demeaning grin on his face. Stefan turns to notice Damon and states simply, "Damon." Damon, looking back at Stefan, responds with, "Hello, brother" (SinempSenemp, 2010). Later on during the seasons, we learn Damon has been resenting Stefan since the day his true love Katherine was killed in the church, resulting in approximately two centuries worth of hate and anger.

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Throughout season one, the audience sees how Damon struggles with feeling inferior to his brother, Stefan. Damon feels as though Stefan's entire existence has been a result of handouts from those around him. Damon feels the need to compensate for his Adlerian inferiority complex (Ansbacher & Ansbacher, 1956) and one way he attempts to do so is by getting close to Elena through her friends. He begins this task by seducing Elena's friend Caroline through "mind-compulsion." Mind-compulsion can be described as when a vampire looks into people's eyes and can cause them to forget previous events or otherwise manipulate them. Caroline has no idea Damon is doing this to her. Caroline becomes a "doll" to Damon. He can feed on her, have sex with her, and do whatever he wants to her without having to suffer any consequences. This allows Damon to feel some of the superiority he craves.

Another interesting contribution Adler made to the field of psychology was through his idea of parental influence (Ansbacher & Ansbacher, 1956). Parental influence can lead to two problems, if not watched carefully. These two issues are caused by either parental pampering or neglect. Pampering is when parents give their children too much attention or are overprotective. Neglect, on the other hand, is when children aren't given enough attention. For individuals who suffer from pampering, it can cause children to lose all sense of independence. However, if children feel neglected, they become incapable of developing strong interpersonal relationships.

These patterns are also seen in Damon's character throughout much of the series. During a number of episodes, the creators of TVD give viewers glimpses into the past. In season one, we are given a glimpse into the relationship Damon and Stefan had with their father. It is completely obvious that their father thought Stefan was the pride and joy of the Salvatore name, whereas Damon was like scum on the bottom of their father's shoe that he just can't scrape off. In getting this feeling of Damon's past, it makes the audience think Damon suffered from neglect as a child. He had so little attention from his father Damon began to have feelings of suspicion, and these feelings of suspicion could have caused Damon to have low levels of intimacy and poor relationships.

The results of Damon's neglect are pervasive through TVD series. Damon doesn't build relationships. Damon uses people to get what he wants and then when he is done with them, they either end up dead or having to deal with Damon's unfortunate personality complex. For example, Caroline was being used by Damon to get to Elena. Once Caroline started to ask about where the bite marks on her body were coming from, Caroline realized Damon was no longer the person she thought he was. To deal with Caroline's realization of the situation, Damon attacked Caroline and had her forget anything had ever happened.

Damon also shows signs of Alfred Adler's idea of birth order. Adler argued that the order of birth for us and our siblings affects our personality (cited in Ansbacher & Ansbacher, 1956). In the case of Damon, Adler would say because Damon is the first born, he would become a "problem-child, neurotic, criminal, drunkard, and/or pervert" (Burger, 2011, p. 99). Adler goes on to say first-borns who have siblings also suffer from feelings of inferiority because they feel as if they are being "dethroned" in some way. After watching TVD from its first to fourth season, the audience would have a clear view that Damon fits Adler's birth order description. Damon definitely likes to drink a lot. Whenever we see Damon drinking anything besides blood, it is alcohol. Supposedly drinking helps with the cravings for blood in vampires. Damon could also be classified as someone who is neurotic (McCrae & Costa, 1997, 2008). Damon, specifically, is emotionally unstable because the person he loves has been stuck in a tomb. For twenty-five years, Damon has never taken the time to grieve for the loss he felt when Katherine was in the tomb. Another example of Damon's emotional instability is found when Damon gets drunk and shows up in Elena's room and forces himself on her by kissing her.

Sigmund Freud's followers would describe Damon Salvatore as someone who is suffering from the association between frustration and aggression (cited in Dollard, Doob, Miller, Mowrer, & Sears, 1939). Freud originally thought the cause for aggressive tendencies was due to the fact that the individual has a blocked libido, or sex drive. However, after Freud watched the devastation of World War I, he proposed a death instinct, Thanatos.

Thanatos is the concept that people have a desire to destroy themselves. Since a fully-functioning person cannot self-destruct, all of the aggression is turned on others. Damon shows prime examples of aggression within a variety of scenes in TVD.

One scene in which Damon shows his desire to control himself is during season two. Freud would explain Damon's tendency for aggression using the frustration-aggression hypothesis which states, "aggression is always a consequence of frustration...that the occurrence of aggressive behavior always presupposes the existence of frustration and, contrariwise, the existence of frustration always leads to some form of aggression" (Dollard et al., 1939, p. 1). Damon is frustrated by the fact that he wants to have Elena all to himself at this point in the television series (season two; TVDxClipsHD, 2012), and the only way he thinks he can do that is to get her to become a vampire like himself. Because Damon is frustrated, he is responding with aggression. Researchers state that the only way to get the aggression to stop is when the individual goes through catharsis, or emotional release (Dollard et al., 1939). Damon goes through this cathartic period in season four when Elena becomes a vampire and Damon and Elena explain how they are in love with each other. With his cathartic release, viewers are left hopeful Damon will be unaggressive when season five begins.

At the end of season four, Damon is in a happy place. He has finally been able to get the girl, even though he feels bad for his brother. This makes the viewers wonder if Damon's newfound love for Elena will end up changing his personality going into season five (the upcoming season at the time this article was written). TVD is built on a number of different characters, each with their own personalities, but Damon is one of the characters who definitely wears his personality on his sleeve. However, Damon is also a character who has many inner demons that need to be addressed. If a psychologist were to treat Damon from the psychoanalytic perspective, it would be a rich and detailed analysis.

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## ***Psychologically Speaking***

### **Intelligence, Love, Creativity, and Leadership: An Interview with Robert J. Sternberg**

**Chelsea Atkins<sup>1</sup>, Majken Berglund<sup>2</sup>, Kirsty Kuhlanek<sup>1</sup>, & Richard L. Miller<sup>1</sup>**

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**Background**—Robert Sternberg is an American psychologist, who soon after this interview, took up his duties as the new President of the University of Wyoming. Formerly, Dr. Sternberg was a Professor of Psychology and Provost at Oklahoma State University and before that, Dean of Arts and Sciences at Tufts University, IBM Professor of Psychology and Education at Yale University, and the President of the American Psychological Association (APA). He is a member of the editorial boards of numerous journals, including the American Psychologist. Sternberg has a B.A. from Yale University and a Ph.D. from Stanford University. He holds thirteen honorary doctorates and an honorary professorship at the University of Heidelberg, Germany. He is currently a Distinguished Associate of The Psychometrics Centre at the University of Cambridge. Among his major contributions to psychology are the Triarchic Theory of Intelligence, the Triangular Theory of Love, and several influential theories related to creativity, wisdom, and thinking styles. He is the author of over 1500 articles, book chapters, and books. Sternberg has won numerous awards including the Distinguished Scholar Award from the National Association for Gifted Children in 1985, the James McKeen Cattell Award from the American Psychological Society in 1999 and the E. L. Thorndike Award for Achievement in Educational Psychology from the APA in 2003.

The interview took place in Denver, Colorado on April 12, 2013 during the 83rd annual meeting of the Rocky Mountain Psychological Association. At the conference, Dr. Sternberg gave the Psi Chi Distinguished Lecture and afterwards participated in a Question and Answer session with students and faculty. Conducting the interview were Chelsea Atkins, Majken Berglund and Kirsty Kuhlanek. Chelsea is completing her junior year at the University of Nebraska at Kearney where she enrolled in the honors program, majoring in psychology and minoring in English. After graduation, she plans on attending graduate school to study in social psychology. Majken Berglund is a student at Metropolitan State University of Denver who is majoring in psychology with a minor in hospitality, tourism and events. Following graduation, she plans on pursuing a Ph.D. in social psychology. A month after this interview, Kirsty Kuhlanek graduated summa cum laude from the University of Nebraska at Kearney where she majored in psychology with a minor in sociology. She is now engaged in graduate study in experimental psychology at Missouri State University, where she holds a teaching assistantship.

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**Miller:**

As a part of this Psi Chi sponsored Question and Answer session, a group of students will be conducting an interview to be published in the Journal of Psychological Inquiry. The journal publishes undergraduate student

research and in addition, there is a Special Features section that serves a variety of purposes. It is a forum for student essays on topical issues and also features, from time to time, articles that provide information of interest to both faculty and students related

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to the research process. We have asked you for this interview in order to explore your thoughts on the role of undergraduate research in teaching. The audience the interview is primarily designed for is students, and secondarily for faculty. Particular emphasis is on the scholarly component of teaching and learning and how that relates to students conducting research and subsequently presenting and publishing the results of that research. The three students who will be conducting this interview are Chelsea Atkins, Majken Berglund, and Kirsty Kuhlnek. In addition, we will open up the session for questions from the audience.

**Atkins:**

I want to know what may have influenced you to choose the profession of psychology. Were there any significant teachers or childhood experiences that played a role in your choosing psychology?

**Sternberg:**

Yes, I think that the childhood experience that kind of determined my career in psychology was early failure on IQ tests, and trying to figure out why I was so stupid. And I'm still working on it. So it's a lifetime quest. I think my fourth grade teacher, Mrs. Alexa, had a big influence because if I hadn't had her, if I hadn't had someone who believed in me, I don't think I would have amounted to much of anything. Then in seventh grade when I got in trouble for giving IQ tests to my classmates, my seventh grade teacher, Mr. Adams, stood up for me, and I think that

was very influential. And of course I've had three really good mentors in my career. Endel Tulving, when I was at Yale as an undergraduate, Gordon Bower at Stanford as a graduate student, and Wendell Garner at Yale when I was a faculty member. The one other thing I'd say is that my mentors have not all been older than I am. If you look at my research, it's almost all collaborative with students. I've learned as much from my students as they've learned from me and maybe I've gotten the better end of the deal. When I've collaborated with students I have always looked at it as very much a two-way street. I think as a teacher if you're not learning as much from your students as they're learning from you, then you're doing something wrong.

**Berglund:**

What was the reaction of your family and friends to your choice of being a psychologist?

**Sternberg:**

My mother wanted me to be a lawyer and when I graduated from college she was very disappointed I didn't go to law school because she just had my brother go to law school. I could've also been a medical doctor; that would have been okay. So I disappointed her by going to graduate school and then when I got a Ph.D. my mother pointed out to me that the president of Rutgers University had both a psychology Ph.D. and a law degree. And I said, "Mom, I really don't think I want to be a lawyer." I actually took a pre-law course as an undergrad and just didn't really take to it. When I got tenure she said to me, "You know, now you've proved that you can do an academic career; you still could go to law school." But I said, "Mom, I don't think so." I just talked to her very recently, she's now 92, and I think she's finally accepted that I'm not going to go to law school.

**Kuhlnek:**

Having faced the struggles that you have

faced through school, is there advice you would give to students that are struggling with their undergraduate studies?

**Sternberg:**

Yes. One of the things you do a lot of when you're a dean and some as a provost is fundraise. You fundraise from people who have been very financially successful and most of them are not people who were great students. And if you look at people who succeed in leadership positions, some of them were really great students but others weren't. And when you're in college you tend to think that your grades matter a whole heck of a lot; but after you apply for your first job, I doubt anyone will ever ask you about your grades again. So the important thing is getting through college, and getting the degree; that's what matters. Your GPA as long as you get through—it really doesn't make all that much difference. It might for your first job, but after your first job, nobody's going to care so my advice would be, even if you're struggling, get the degree. Get yourself a first job and after that, nobody's going to ask about your grades again. Did you want to know my grades in college, by the way? No, I'm kidding. No one's ever asked me, you know, it's just over. So, just get the degree.

**Audience Member:** Okay, I want to know and I'll confess mine if you confess yours.

**Sternberg:**

Well, as you know, I got a C in introductory psychology, and it went up after that. My first test grade was an F, but I did much better in the upper level courses because I think in the upper level courses there's much more room for your creativity and doing research. So I really enjoyed the upper level courses very much. The intro course—the way it was taught – was very memory oriented and my memory stinks, as you might have noticed when I was giving the talk. I just gave a talk, didn't I? Yeah, okay, any other questions?

**INTELLIGENCE, LOVE, CREATIVITY, & LEADERSHIP**

**Atkins:**

Since you've had so many different research interests, dealing with intelligence testing, creativity, love and hate; did any of that have any influence on your parenting style?

**Sternberg:**

Maybe a little, but not much. I once, way back, had an argument with another assistant professor who was raising his kids according to Piaget, and I said, "Well, you know, I just do what I think is right." And I've found that as a parent I just go by my common sense. You know all our kids have been tested at various points and I can't tell you how little the tests tell me. I mean it's really embarrassing. Here's my field, psychology, and the testing isn't very predictive of future outcomes. So I've pretty much just raised them the way I think I should. Fortunately my wife, Karin, and I have very similar parenting styles. You know occasionally we'll let the kids out of the closet, but... I'm only kidding, we don't really put them in the closet.

**Berglund:**

What were your early research interests?

**Sternberg:**

Well, my earliest research interests were in intelligence. I told you about the 7th grade project where I created the Sternberg Test of Mental Abilities, the STOMA; you've probably heard about it. It's widely used by nobody. Then when I was in 10th grade, I had attended a summer program and did a study on the effects of distractions on mental test performance. The distractions were either listening to the Beatles (1964) sing, "She's Got the Devil in Her Heart" and "Please Mr. Postman", having a car headlamp shine in your eyes, listening to a metronome ticking, or no distractions for the control group. And the only significant difference was that kids who were listening to the Beatles sing, "She's Got the Devil in Her Heart" did better. So I'm sure there is something to be learned from that. As an undergraduate with Endel Tulving, I did research on memory, and it

was okay but it just wasn't me. That's why I say you really have to do what's you, because if you do what's somebody else, you can do a good job but you'll never do a great job. You really have to figure out who you are. It's the same in relationships. What was a struggle for me was finding somebody who really loves me for who I am, and I really love them for who they are, and not some kind of image you have, and that's hard to do. What I think is the most important thing is finding someone who really values you for who you are and you value them for who they are.

**Kulhanek:**

Of all the research projects that you've done during your career, do you have one that stands out as your favorite?

**Sternberg:**

Do I have a favorite research project? I think that the Rainbow Project I did at the end of my time at Yale maybe is the favorite because that really changed my whole life. It showed me what I really wanted to do in my life. I've published a lot in my life but it was never really about publishing, but rather about changing the world. And one of the reasons I became an administrator is that I felt like I had written all these articles and I had given all these talks, and I had written many books, and nothing was changing. In terms of standardized testing, things actually were going backward and getting more oriented toward often mindless standardized tests. The Rainbow Project showed me and other people that the kind of work I was doing really had a practical application, that it really could change the way college admissions were done in a way that helped students. It demonstrated that there are students who are qualified to go to college, not just by virtue of their SAT scores. When I went to Tufts and then at Oklahoma State, we accepted many kids for their leadership qualities—their creative skills, their analytical skills, their practical skills, and their wisdom-based skills. That project was part of

the reason I went into academic leadership and so maybe that was my favorite. But I had a lot of projects I enjoyed. All of them really; if I didn't like something I just didn't do it. I would encourage you to figure out what you really like to do and do that. As I said, I don't think you can do a great job if you're not really excited about what you're doing. Sometimes people tell you what they think you should; it might be your advisor or your parents, but you really have to figure out what you want to do.

**Atkins:**

Some of your research focuses changed a little bit. Was that because of what you became more interested in, or more what you wanted to do? Or was there a different reason for the change?

**Sternberg:**

Well my interests changed because I kept following my failures. I started doing research when I did poorly on IQ tests. Something similar happened to lead me to study creativity. When I was in my first year of graduate school I did a project on part-whole/whole-part free recall, and it was very successful. It was published as the lead article in a top journal in the field, but it was so successful that it kind of closed down the field; it answered the question. So I didn't know what I wanted to do next because that field was done for. I knew that I wanted to study intelligence and I was trying to figure out a creative idea. Endel Tulving, my undergraduate advisor, came to the Center for Advanced Study in the Behavioral Sciences at Stanford. He took me out to lunch with a bunch of hotshots and he asked me what I wanted to do, and I said, "Well, I want to study intelligence, but I don't know what to do." I could tell they thought, "Well, he's only finished his first year of graduate school and his career is already over." I was embarrassed because I seemed to the people there to be a one-shot wonder, but it was shortly after feeling like I didn't have any creative ideas that I got a good idea. So for me, the

motivating factor has always been trying to do what I'm bad at. I went into academic leadership because I thought I didn't have leadership skills. I studied love because I was failing at love. I mean it's a weird way to choose your field, but I never studied things I'm good at. I find writing very easy, so I don't study writing because I don't understand what's hard about it. It's easier to study things you're bad at because you know what the struggle is – you understand it better. The things that you do automatically you don't understand well because you do them automatically without thinking about them. So I've found it easier to study things that are challenges for me.

**Berglund:**

Did your early undergraduate experiences shape the way you taught undergraduate students?

**Sternberg:**

Yes! My experience with my introductory psychology class has affected the way I have taught and has also affected my research because, as I said, I study things I'm bad at so I've done a lot of studies on teaching of psychology, and on teaching in general. I think the really important thing is to realize that kids learn in different ways, and you want to teach to their strengths some of the time, and some of the time teach to their weaknesses.

Once, I was teaching multivariate data analysis, which is an advanced statistics course, and there were some kids who were really good and there were some kids who were really not good. And I would have said the kids that were really good were the smart ones and the kids who weren't good were not so smart. And then one day I read a book by a guy whose last name was Child on how you could teach factor analysis geometrically as well as algebraically. I'm an algebraic thinker. I'm not a geometric thinker; I'm not spatially oriented. So one day just for the heck of it, I went into my multivariate class,

and I tried to teach factor analysis geometrically. And I didn't do a great job at it, because it's not the way I think. But what was amazing is that some of the kids that I had written off as bad students, when I taught factor analysis geometrically, just immediately caught on. And some of the kids who had been very good when I taught it algebraically weren't getting it. And what I realized is that I was confusing who is good with just how well they happened to learn in the way I taught. So I really think it's important to believe in your students, and for the students to believe in themselves, because the biggest obstacle to success is giving up and thinking, well I can't do it. And I just see so many cases in which kids don't get good grades or their teachers tell them they are dumb and they give up.

At Oklahoma State, one of the things we are very concerned about is increasing first year retention. So we started a center, the Learning and Student Success Opportunity Center, or LASSO Center, you know, cowboys use lassos. A lot of the focus has been on first-year students who come to college who, for one reason or another, are just not ready. Their high school background may have been spotty or they don't have the tacit knowledge of what it means to be a college student. When I started college, I didn't know what I was doing. I just didn't know how to study for college. Some of the students get a bad grade, like I did, when I got an F on my first test, and they lose their sense of self-efficacy. They stop believing in themselves. Or some of them end up lacking self-regulation skills; but there are very few students who I think really just don't have the intellectual capacity to succeed. I think there are so many things that can get in the way of your success and that there are very few people for whom you can say, well, they failed because they're not smart enough. I think if you learn to regulate yourself, and you pick up the test, not with a hidden agenda of what a college student is, or a graduate student, there's an awful lot that you can do,

even if you don't test well. When I was young, I did really badly on standardized tests, and when I was older, I did really well. And one day I had this brilliant realization. I'm still the same person. I mean which am I, the really big dope on the IQ test or the person who got really good SATs? I'm still the same person, and I realized all that stuff didn't matter a whole lot.

The potential tyranny of standardized testing applies from an early age. Our two-year old triplets were born prematurely, as triplets tend to be. Triplets tend to form their own language. They talk to each other in this language that you don't understand. So they had some developmental delays when they were infants, and we had them tested by a psychologist. The psychologist gave us a really grave prognosis. I'm too old to take that stuff all so seriously; I think Karin was more worried about it than I was. I took the results as meaning that we just had to do more intervention with them. These are kids that we can't just let be on their own. Now they're caught up and the psychologist was wrong. I mean, she just was wrong. Other parents, who are laypeople who don't realize how wrong all this stuff can be, might have given up on their kids.

I saw it happen with my son Seth when he was in school. He moved from one school to another, and they gave him a reading test on his first day in the new school. In general, common sense would tell you that it is not a good idea to give kids a high-stakes test on their first day in a new school. They have too much else on their minds. Seth didn't do so well on the reading test, so they moved him to the bottom reading group because of the test score, even though he'd been in the top reading group at the previous school. Then when they saw his reading was better than that of the kids in the bottom group, they gave him the reading test again. He did better so they moved him to the middle reading group. Then, when they saw he was reading better than the kids in the middle group,

they retested him, and he scored at the level of the top group. So what they should have done was move him to the top group, right? But they didn't. And we asked them why, and they said, "well that's because he's now a full year behind the kids in the top group." I said, "well, yeah, of course, that's because you put him in the bottom reading group." So they created a situation in which he fell behind, and it was just because of some stupid reading test he took his first day in a new school, in a new home, in a new environment, with new kids.

The context of testing is so important. Kids come from families that are bilingual, or English isn't their first language; they grow up in diverse kinds of environments. A good psychologist takes these things into account. But there are some who just mechanically give a test, get a score, and don't think adequately about the context.

**Kulhanek:**

What would you say was your best moment or experience as a professor?

**Sternberg:**

I think that when I see students succeed, that's the best it gets. Eric Amsel, a former postdoc of mine, said to me this morning at breakfast "you don't have an effect just through your own kids, but you also have an effect through your students," and that's really true. I've collaborated with a lot of students, and the overwhelming majority of them have been very successful. And every student I've had is on my vita with his or her first job. That's what I think I'm most proud of. They're not all academics, and I don't even care if they're academics. I just care that they find what's right for them to do and that they succeed in that. Some of them have gone into consulting, into sales, into every imaginable thing. But having successful students and successful children, it's the best you're going to do. I wrote an article on immortality, and I said that's how you become immortal. It's not through anything you do;

it's through what people after you do.

**Atkins:**

Do you have an experience that would be your worst moment as a professor?

**Sternberg:**

Yes. Unfortunately, quite a few of them. I think that one of the worst moments was that humiliating letter I had to write to withdraw from tenure consideration. It was just rock bottom, you know I just wanted to die. It was so embarrassing when I thought I had tenure at this other place, and I didn't. With the Rainbow Project, when they cut off our funding, that was a really bad time, because I had been planning to spend much of my future career doing that. Here I was in my mid-fifties, and this whole career I had imagined for myself wasn't going to happen. So that was pretty bad. I think a third bad time was when once I fired someone who just wasn't doing a good job, and a few weeks later, the University received an anonymous letter complaining about me. I knew who wrote it but, you know, you have to go through this whole process to make sure you're not a bad guy. It ended up fine. I guess the person didn't take so well to being fired. Some people don't. You will have very bad experiences in your life. You will, even if you haven't yet, and the big thing is to remember, when you have these bad experiences, you will get over them. The only experience in my life that was bad that I haven't gotten over it, is that we had twins die during a pregnancy. But other than that, I've gotten over everything. I think there are some things you never get over, but for the most part, you'll move on. So you just think, in a few years this is going to not look so important.

**Berglund:**

What are the advantages for faculty in working with undergraduate students?

**Sternberg:**

The biggest advantage is that you're not only going to help them, but they're going to help

you. One of the early studies I did with a grad student named Peter French was on the costs of expertise. We had experts and novices in bridge play on a computer but we changed the bridge game with either a trivial change or a structural change. We made a trivial change in that the name of the suits, like clubs, diamonds, hearts, spades we changed to gleebs, fricks, things like that. And then we had a group where we made deep structural change so that instead of the high bidder going first on the next round, the low bidder did. What we found is that when you make a trivial structural change, the novices and experts are hurt about the same. But when you make a major deep structural change, the experts were hurt more than the novices. In other words, the cost of expertise is entrenchment – you get stuck in ways of thinking. It becomes hard over time to get out of the ruts you create for yourself, and undergraduates don't have any of those ruts, because they haven't studied a subject for so long. I wouldn't have done a quarter of the empirical work I did if it weren't for students I've worked with, both undergraduate and graduate. I was one of the few deans at Tufts, I think the only dean, who still taught. And as a provost I taught, and I didn't have to. I had no teaching requirement at all, but I taught undergraduates because I still think they are important to my understanding of myself and life and what a university is like. What can happen to you as you get older and go into administration, is you lose track of the people you are administering. You just get disconnected and so it's really important to stay in contact with undergraduates and graduate students, because those are essentially your customers. Those are the people who keep the university working. If you didn't have students, you wouldn't have a university. And if you aren't staying in touch with them and collaborating with them, they'll have many good ideas you'll never have, because they know the university much better than you do. You know, they live it. I've been actively involved with undergraduate student organizations as dean

and as a provost to stay in touch.

**Kulhanek:**

How would you advise instructors to increase the appeal of research for undergraduate students?

**Sternberg:**

Well, the main thing is to get them involved in it. If it weren't for research, I don't think I would have found my undergraduate experience in psychology so interesting. It was the research that I really enjoyed, and it's the research that teaches you how psychologists think. The most important thing you learn from undergraduate psychology is not the facts. I took undergraduate psychology in 1931, and if you look, I'm only kidding. If you look at the facts in the textbook I used in 1968 versus the facts in a textbook today, there's almost no overlap. It's just a different field. I mean it's just totally changed. There are only a few people who are still there: Freud, Skinner, and Piaget. What lasts is learning to think like a psychologist. So the more experience you have doing research or any kind of internship, that's the stuff that will stay with you.

**Atkins:**

What can novice educators do to improve their teaching style, especially when they're balancing tenure requirements and educational duties?

**Sternberg:**

Well, in most places, teaching does matter for tenure. At Oklahoma State, it matters a lot. At Tufts, it mattered a lot. I think at Yale maybe it mattered a little less. So even if you're always self-interested, you should pay attention to your teaching. But the other thing is that your teaching is going to be a source of ideas for your research. I think the best teachers are active researchers, because they bring their enthusiasm and their passion and their understanding of research to their teaching. And the best researchers are teachers because a lot of their ideas for re-

search come out of their teaching and their collaboration with students. So I don't see research and teaching as disconnected at all. For me they have always been very connected. Most of my research has been with students. I teach a course on leadership, and I learn stuff about my leadership as a provost and formerly as a dean from the teaching I do. So I think that if you teach, it's not only to the benefit of your students but it's to your benefit as well. And if it stops being to your benefit, then you are becoming stale.

**Berglund:**

Having been a president of both APA and Eastern Psychological Association (EPA), how have you seen psychology and education change over your career?

**Sternberg:**

I think psychology has changed a lot, in some ways for the better and in some ways, not. It's changed for the better in that there are new fields that are constantly emerging at the borderlines of disciplines like positive psychology, cognitive science, social neuroscience. I think people have recognized the importance of boundaries and of interdisciplinary thinking and of not just being drilled into a field. When I was younger, I had just published a cognitive psychology text, and a very important cognitive psychologist came to meet me. I showed him my cognitive psychology text with pride. And he said to me, "Bob, you're not a cognitive psychologist anymore." He was referring to my work on love. I felt really put-down, and then I thought about it. I thought, well, that's okay, because why should I have to limit myself by calling myself a cognitive psychologist? Then I couldn't do what I want. I'm just a psychologist, and I just do what I want to do. So I think a good thing is that people have been a little less boundary conscious. I think a thing that is not as good is that psychology is sometimes too concerned about imitating biology and physics. There are certain parts of psychology that just don't have to be studied in terms of the brain. And if you look at

the job offerings, an awful lot of them are in cognitive neuroscience, social neuroscience, and the like. I think those are fine, but I think that more areas of psychology have a lot to contribute. And sometimes when we become very reductionist, we forget that. I think that I really appreciated the kind of larger theorizing that earlier theorists did, and I think that some of that we've lost in getting very molecular about everything. I also think that there's been much less emphasis on context than I had hoped there would be. Ulric Neisser, who was a very famous psychologist of the last generation, wrote two really important books. One was called *Cognitive Psychology* and the other, *Cognition and Reality*. The first one created the field of cognitive psychology and the second one was about the importance of looking at cognitive psychology in context. But somehow the second one never caught on, and yet I think that was in a way his more important book since, for example, what people do in a laboratory is just often not what they do in their everyday lives and sometimes we lose sight of that.

**Woody:**

Okay, we are going to open it up to questions from the rest of the audience.

**Marshall:**

I'm from Salt Lake Community College. I found that one of my greatest struggles as a student is balancing schoolwork and my relationship with my wife. And I was wondering what are some strategies that you have used that have helped you kind of balance that?

**Sternberg:**

Yeah, let me say in all honesty that I haven't always been very good at it. And I think that some of the relationships that failed, I played a major role in that failure, because I was so career-oriented. It took me a long time to learn that you should put your family first, because in the long run, that's what you're going to have. When you retire, don't expect

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everybody to come and say what a great job you did. You'll be history. What you'll have left is your kids and your grandkids, your spouse, and your siblings, if they're still alive. So I would say that I haven't always balanced it so well. But at this point in my life, I would say you should really put your family first, because that's what will endure. When you're in each stage, you can say "well, I don't have time to balance my life now, but I will at the next stage." But you won't have time at the next stage either. There always will be something – wanting to get into graduate school, wanting to get a job as an assistant professor, wanting to get promoted to associate professor, wanting to get promoted to full professor, wanting to get in some national academy or another. There's always some reason you can put your family second or third or whatever, and that's a mistake. So I think at this point in my life, I've come to realize that I wasn't always very good at it, and that's my own fault.

**Audience Member:** You said that you have adult children and now you have two-year old triplets.

**Sternberg:**

Yeah.

**Audience Member:** Has being so accomplished in your career made that any less terrifying?

**Sternberg:**

Given my age, it's very terrifying. But it's having kids that's the most important thing. I'll tell you that when you get to be my age, you realize that's the main contribution you'll ever make. It really is, no matter the career stuff. You know the best you'll ever do is become a paragraph in the history book. That's for the people who do really well. For the rest of us, it's nothing. There's nothing I value more in my life than my family and the kids I've had, but as I said, I didn't always see that. When I was young, I thought I was going to change the world with my research in psychology and what I found is the world is really resistant, at least to the changes I pro-

posed! I don't know what is the matter with the world. It's so resistant to change. Here I had these fantastic, fabulous ideas that could have made the world such a better place and the cold, hard, mindless, cruel people in the world just didn't appreciate them. (Please don't take this seriously!) So that's just the way it is. Try to make the difference in the world. I think that's really what we're here for, but you can make a difference in your career, you can make a difference in your family.

**Kelpack:**

My name is Jan and I'm at Weber State University. You were talking about creativity and the different kinds of cognitive and learning styles. I'm curious about the self-awareness component, and how you think that might interact.

**Sternberg:**

I've come to think that self-awareness is really important in your life because it's sort of what guides you in what you do. It was what led me to go into Psychology. That's really where my heart was. It's what led me to leave Yale after thirty years of a career there. Most people after thirty years are sort of getting ready to call it quits and it's scary to start a whole new trajectory in your mid-50s, but it was my awareness that, that stage was just done. And it's been important in personal relationships. I think that my self-awareness in personal relationships hasn't been as good. But it was sometimes knowing that it's just not working. So I think it's tremendously important, because if you're not self-aware you're going to let other people dictate what you do and you don't want to live that kind of life. At least I don't.

**Toby:**

I'm Nicole and I was just wondering, how you distinguish between giving up and making that change onto a new trajectory.

**Sternberg:**

I never felt like I was giving up, I felt like I was moving on. So I didn't look at it that way. Sometimes things can be successful at one point of your life, and just not at another. It doesn't mean that that relationship failed or that part of your career failed; it just means you're ready for the next challenge and your life will be much more interesting if you're constantly seeking new challenges. I think a lot of people just wait for things to happen. And what I tell freshman is, to be successful in college, it's really important in your life to go after the things you want. Not just to wait for things to happen, but to actively, proactively seek. A lot of freshmen had these good high school careers and things came to them. I really valued my thirty years at Yale, and five years at Tufts, and the work I did in the past, but it's just this feeling that I had, so maybe I get bored easily or maybe I just like new challenges, so I never looked at it as bad. Even if you have a marriage that fails, if you have kids that come out of it, you have something really important that came out of it. It may have been right in those years and then at some point it stopped being right. It may be you do research on something and it was fun for a while but you sort of lose your steam. Dean Simonton has found that people who are creative have to keep changing into studying or doing new things in order to maintain their creativity. And I thought, when I spent most of my time in research and teaching, that was the right thing for me to do then, but as I became frustrated and I wanted to have more of an impact on the world, it just stopped being the right thing.

The one thing you have to distinguish between is perseverance and perseveration. You should persevere for goals that are really important to you, but you also have to ask sometimes if they are the right goals. If things aren't working out, whether it's in your research or your teaching or a relationship, maybe you've mis-set your goals, and want to think about other ways to direct your future life. There've been times I've

done that. I did some research on conflict resolution and two articles were published in the *Journal of Personality and Social Psychology*, which is a great journal, but I just felt the research wasn't going anywhere and so I left that field, even though I was getting publishing in good journals. I just didn't feel like I had a future doing that.

**Hickey:**

I'm Sean from Regis University. In your talk, you said if you're going through graduate school just trying to get good grades that you're doing it wrong. How do you suggest students get the most out of grad school?

**Sternberg:**

Well I think that graduate school, especially at the doctoral level, is a time to switch from having a consumer mentality, which is mostly what you do as an undergraduate – you're consuming knowledge – to having a producer mentality, that you're a producer of new knowledge. And that production can be through scholarly research, it can be through literature reviews, it can be through therapy, but you're creating, you're not just consuming the creations of other people. So I would concentrate on the transition from being a consumer of all knowledge to being a producer of new knowledge in whatever field you go into.

**Teagan:**

I'm from Adams State University. As an aspiring educator how do you suggest getting wisdom into students? How do you teach that?

**Sternberg:**

You can't teach wisdom, but you can teach for wisdom. And with that the main thing is role modeling. If you're acting like a fool, it doesn't matter if you're teaching wisdom, right? It's like telling people not to smoke while you're smoking. You can't do that. I think you learn wisdom through stories – either your own stories or other people's. The stories are of wise action and foolish

action. Look at the mistakes you make, and ask why did I do that and how can I get a hold of myself so I don't do it again? So I think you teach for wisdom by constantly bringing in values issues into the teaching. Some people are reluctant to do that, but I think that's really important for people to learn. A few years ago there was a professor at Harvard who got into trouble for stuff he did with his data and then there was a guy at the University of Tilburg who made up experiments. Sometimes I ask myself, how can people be so successful, you know, full professors, at really prestigious places, and then do those kinds of things. I think it's because they develop the academic smarts, but somehow the wisdom never came with it. That's something you'll learn through your whole life. It's not like, boy, now I have the wisdom. Once you think you have it, you lose because wise people don't think they're particularly wise; they realize how susceptible to foolishness they are.

Yesterday I met with some administrators at the University of Wyoming, who came here to Denver to talk to me, and I said, you know, when you start off a job as president it is so easy to put your foot in their mouth and say something wrong because people are always listening to what you say. Fortunately, in other positions they don't listen as much. So I said, tell me if I say something that's just really idiotic, and it didn't take me long to do that. Within fifteen minutes, they were suggesting that I visit a coalmine and I said, "I definitely want to do that, but I'm claustrophobic." Then they pointed out that in Wyoming it's mostly open-pit mining, it's not below ground. So I looked like I didn't know anything about coal mining in Wyoming. You should always have the attitude that you have a lot to learn, and if you stop having that attitude, you're really in trouble.

**Kitzman:**

I'm Morrie from Metro State University. We met about twenty years ago, if you remember.

**Sternberg:**

How did my hair look then? How did yours look?

**Kitzman:**

So, you obviously use humor quite well; have you ever been interested in researching humor?

**Sternberg:**

I've never studied anything that's easy for me. Actually yesterday, when I was talking to the other administrators from Wyoming, they pointed out that I tell a lot of jokes, and I say a lot of ironic things. I put this in my notes in bold print, that when you're a university president you have to really watch the jokes, because there will be people who take them seriously and those that will say, "He said this really stupid thing," because they took the joke seriously. It's easier in this kind of setting than it is when you're in your presidential setting, and you say something that you think is funny and some people don't think it's funny and some people take it seriously. That's why I insist that all jokes be excised; no, I'm only kidding.

**Bingwan:**

My name's Jenna and I am from Grand Canyon University. I was just wondering what your feelings are on the focus on assessment in higher learning and if testing isn't being drilled into us. How can psychologists be in on that debate?

**Sternberg:**

Some colleagues and I wrote a short book on that for the Association of American Colleges and Universities. If you want to know my views, we have a booth outside and we'll be selling copies of that. I'm only kidding, we're not really, we don't have copies here and I wouldn't sell them if I did. Seriously, I think that for measuring undergraduate learning, portfolios and electronic portfolios are a pretty good way of doing it, as long as you prepare the students and you start from the

time they're freshman. I'm not a keen supporter of the standardized tests, like the Collegiate Learning Assessment (CLA), Measures of Academic Process (MAP), Comprehensive Assessment Program (CAP), and (PP) and so on. The reason is that they correlate very highly with SATs and ACTs, so you don't really need to go to college to do well on them. All those tests are basically IQ tests with other names. They all correlate with general ability, and I think that those tests are very limited in terms of measuring college outcomes; I think that portfolios are probably the way to go. That's at least what I would hope for.

**Meggard:**

I'm Renee. I'm a psych B.A. from Western State University and obviously I'm non-traditional. You've had a lot of opportunity to make changes in your life. At 51 years old, I'm terrified. What's the most important thing within you that has kept you positive in moving through those transitions, and not being afraid?

**Sternberg:**

Well it's not quite the right question, because who said I'm not afraid? Every time I've made a transition I've been scared. I was scared when relationships failed and I didn't know what I'd do. I was scared when I became a dean, when I became a provost, and now that I'm becoming a president. I was scared when I was up for tenure. I interpret the fright in a positive way and say it's good to be scared. If you're never scared, then you're never taking on challenges, and if you're never taking on challenges then you're not making the most of your life. So it's to reinterpret that fear as a good thing, but not to let it paralyze you. That's what I have always done. Last night I had my first formal dinner with UW donors, and I was scared as hell. They're big donors and if I mess this up, and I haven't even started the job, I could be out before I start. The thing that worried me is after the dinner they dropped me off in an undisclosed location

and tortured me, and I just wondered if I might've done something wrong.

**Audience Member:** My question's similar to hers. You mentioned that you're never too old to make a change in your life, and so do you have some opinions or some advice for the older student that suddenly decides to take off in a new direction?

**Sternberg:**

Yeah, my advice would be to do it. When I was a freshman I took a course called History in Politics, and we learned about these two guys named Tertullian and Eusebius, and I have no recollection of who they were or what they did, but the only thing I remember about them is that one or the other of them was really concerned about the gap between thought and action, and how hard it is to translate your ideas into action. When I came up with my model of ethical reasoning, I realized that the really hard thing about ethics is not realizing the ethical thing to do; it's doing it. You know, there're eight steps in my model, and although seven of them are hard, the eighth one is translating thought into action, that's the hardest of all. There are always so many reasons just to leave things the way they are; you think about the great things you could do, or the exciting things you could do, and you chicken out. People just get comfortable with their lives and they get afraid to take on new challenges, so my view has been just to do it. Sometimes it's the family, or sometimes, it's that they're in a prestigious place and they don't want to leave. Sometimes there's a lot of inertia. When I went to Oklahoma State I thought I was taking a tremendous risk, and I had no idea how it was going to go. It was very different from Yale or Tufts, and a lot of people at Tufts thought I was crazy moving to Oklahoma. But Oklahoma State has been the best job I ever had. It was a huge risk, I mean; I might've gone nowhere. It might've been that I'd arrive in Oklahoma and people would say, throw him out, this guy's an east coaster. But they took a chance on me; I took

a chance on them. It worked out; it might not have. But I guess I've just been willing to take what I thought were sensible risks, and my advice would be, if you've really thought it through and you think you can make it work, do it. I think when you get older, what you mostly regret is the risks you didn't take, not the ones you did. Thank you very much for coming.

# Journal of Psychological Inquiry

The *Journal of Psychological Inquiry* (JPI) encourages undergraduate students to submit manuscripts for consideration. Manuscripts may include:

- *Empirical studies*
- *Literature reviews*
- *Historical articles*
- *Special Features I: Evaluating controversial issues*. Two students work together on different facets of the same issue.
  - Select a controversial issue relevant to an area of psychology (e.g., Does violence on television have harmful effects on children?—developmental psychology; Is homosexuality incompatible with the military?—human sexuality; Are repressed memories real?—cognitive psychology). Each student addresses the current empirical research and makes a persuasive case for one side of the argument.
- *Special Features II: Conducting psychological analyses- Dramatic*. This manuscript is a psychological analysis of a television program or movie.
  - Television program: select an episode from a popular, 30-60 min television program, describe the salient behaviors, activities, and/or interactions, and interpret that scene using psychological concepts and principles. The presentation should identify the title of the program and the name of the television network. Describe the episode and paraphrase the dialogue. Finally, interpret behavior using appropriate concepts and/or principles that refer to the research literature.
  - Analyze a feature film for psychological content. Discuss the major themes but try to concentrate on applying some of the more obscure psychological terms, theories, or concepts. Briefly describe the plot and then select key scenes that illustrate one or more psychological principles. Describe how the principle is illustrated in the movie and provide a critical analysis of the illustration that refers to the research literature.
- *Special Features III: Conducting psychological analyses- Current events*. By using the perspective of any content area in psychology, this manuscript analyzes a current event.
  - Example 1: Several psychological theories could be used to describe people's reactions to the destruction of the World Trade Center on September 11, 2001. Terror management research has often shown that after reminders of mortality people show greater investment in and support for groups to which they belong and tend to derogate groups that threaten their worldview (Harmon-Hones, Greenberg, Solomon, & Simon, 1996). Several studies have shown the link between mortality salience and nationalistic bias (see Greenberg, Simon, Pyszczynski, & Solomon, 1992). Consistent with these findings, the news reported that prejudice towards African Americans decreased noticeably after 9/11 as citizens began to see all Americans as more similar than different.

- Example 2: A psychological concept that could be applied to the events of September 11 would be that of bounded rationality, which is the tendency to think unclearly about environmental hazards prior to their occurrence (Slovic, Kunreuther, & White, 1974). Work in environmental psychology would help explain why we were so surprised by his terrorist act.
- *Special Features IV: Teaching techniques*- Student and faculty mentor collaborate on this manuscript regarding a teaching technique the faculty member uses that the student found particularly helpful.
  - Some examples of teaching techniques are interteaching, the use of clickers, podcasting, team-based learning, and reflective journaling. The description should contain enough information so that another teacher could use the technique and should provide reasons why you think the technique worked well. The second half of the paper should be written by the faculty member who can explain why he or she chose the technique you found to be effective, and what they hoped to accomplish in terms of learning outcomes by using the technique.

Manuscripts may cover any topical area in the psychological science. Further details for the special features submission can be found at the end of volume 18 (1), available at: <http://www.fhsu.edu/psych/jpi/>

#### Submission Details:

1. Manuscripts must have an undergraduate as the primary author. Manuscripts by graduates will be accepted if the work was completed as an undergraduate. Graduate students or faculty may be co-authors, if their role was one of teacher or mentor versus equal collaborator.
2. Manuscripts must come from students who meet the following conditions: (a) from students at institutions who are current on their financial annual support of JPI (see list on JPI website), (b) from students at institutions who are willing to pay an \$80 annual processing fee for unlimited submissions, or (c) from students who pay a one-time \$30 processing fee to have a single submission processed.
3. Submit original manuscripts only. Do not submit manuscripts that have been accepted for publication or that have been published elsewhere.
4. All manuscripts should be formatted in accordance with the APA manual (latest edition).
5. Submissions are made online at <http://www.edmgr.com/jpi>.
6. Ordinarily, the review process will be completed in 30 to 60 days.
7. If a manuscript requires revisions, the author(s) is (are) responsible for making the necessary changes and resubmitting the manuscript to the Journal. Sometimes you may have to revise manuscripts more than once.
8. For further submission guidelines, see the JPI website at <http://www.fhsu.edu/psych/jpi/> or contact Dr. Jenn Bonds-Raacke ([jmbondsraacke@fhsu.edu](mailto:jmbondsraacke@fhsu.edu)) or Dr. John Raacke ([jdraacke@fhsu.edu](mailto:jdraacke@fhsu.edu)).