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In this Issue!

- Message from the President
 A Mathematician's Apology: How a Life in Mathematics has Shaped a Career in Psychology
 [by Thomas J. Faulkenberry]
- On the Necessity of Dissonance for Progress [by John A. Terrizzi Jr.]
- The Importance of Social Support for Graduate Students [by Brianna Sadighian]
- The Impact of Imposter Syndrome Among Undergraduate Students [by Madison Yarbrough]
- Join Us for SWPA 2023!
- Meet Our Sponsors!

Message From the President

A Mathematician's Apology: How a Life in Mathematics has Shaped a Career in Psychology

Ву

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After a year of planning, our 2023 SWPA convention is here, and by the time you're reading this, it will most likely have already passed. I have thoroughly enjoyed being your organization's President this year, and I hope that the convention is (or was) everything you had hoped it to be. In my last column as President, I want to give some remarks that go along with my Presidential address, which has the same title as this column.

I have studied the long list of Past Presidents of SWPA, and I think my tenure is unique in that I am the only mathematician to have occupied the office. Furthermore, I may be the only one for many years to come. In that way, I have always felt seriously underqualified to be your President, because this is the Southwestern *Psychological* Association, and you are all much better psychologists than I will ever be. But I am slowly realizing that being a mathematical psychologist has some perks. For one thing, whenever I am talking to a group of mathematicians, I can



confidently believe that I am the best psychologist in that group. Similarly, when I am talking to a group of psychologists, I can confidently believe that I am the best mathematician in that group. Thus, no matter the context, I have something on which to hang my hat of confidence.

Despite my own impostor syndrome, I do believe that my year leading SWPA will have left one important legacy. I am very proud to have broadened our submission categories to a wider array of presentation types. This year, in addition to our usual empirical submissions, we accepted many research proposals and non-empirical theoretical contributions. While the last of these categories is important to me because my own field (mathematical psychology) is often based on simulations and model building (none of which require data to be collected), the inclusion of research proposals is one I am especially proud of. The reason is that I have seen firsthand the impact that our organization has on our students; after all, students make up roughly two-thirds of our membership. By offering the ability to submit an unfinished research project as a proposal this year, we have given an additional 95 students the ability to present a poster. For many of these students, this will be their first conference presentation. These early experiences with research are ones that we should always strive to foster, as the future of our scientific discipline depends on our students. Our students are passionate and curious, and SWPA allows them to pursue that passion and develop that curiosity.

I firmly believe that we should always allow and encourage curious students to pursue their scholarly passions. Twenty-six years ago, I found my passion in a calculus class. My professor (a wonderful man named Patrick Reardon, who taught mathematics at Southeastern Oklahoma State University) taught us how to prove things about limits, which I found absolutely fascinating. One day in his office, I asked him how to prove something about the limit of a trigonometric function. He told me that he didn't know how to do it, so we should try to figure it out together. "Let's find out", he said. Over the next hour, we did lots of work, but didn't solve the problem! This is the moment that I learned about "research", and I also realized what I was going to do for the rest of my life.

That day, Patrick gave me a copy of a random journal that was sitting on his desk; it was a copy of the *American Mathematical Monthly*. This turned out to be a flashbulb event for me. Indeed, the only place I had ever seen mathematics before was in textbooks. By giving me his copy of this journal (one of many that he had lying around), Patrick opened my eyes to a whole new world. I took it home and read every page, not that I understood a lot of it at the time.

Last week, I was at a conference and happened to have dinner with Dr. Della Dumbaugh, the current Editor of the *American Mathematical Monthly*, and I told her this story. During her keynote, she surprised me by mentioning this story and expressing how much it moved her. Then she gave me a copy of the journal, just like Patrick did 26 years ago. In its 97 exquisitely typeset pages, the journal contains a lot of mathematics, but to me it is more important than that. That journal represents a quarter of a century of a life dedicated to "finding things out", all of which started as a simple gift from a professor to a curious student.

Friends, I hope that this year's convention will regenerate your scientific curiosity, and I hope that you will always look for (and reflect to others) the joy in "finding things out". I have enjoyed being your President.

2023 SWPA Convention

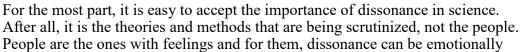
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March 31, 2023 - April 2, 2023



On the Necessity of Dissonance for Progress By John A. Terrizzi Jr. Ph.D.

Associate Professor Texas Woman's University

Dissonance is uncomfortable. Whether it is the result of friendly criticism or an existential insight, it can be unsettling. In science, acknowledgment of dissonance is the golden rule. Hypotheses must face refutation. Those that stand the many slings and arrows of the scientific process (e.g., falsification, peer review, debate, etc.) evolve into our best explanations of the natural world. It is this embrace of dissonance that enables science to progress. There is no eternal word in the scientific community. Though some theories are more revered than others, in the end, they must all face the same scrutiny. The resulting dissonance from each successive study and theoretical insight ultimately lead to a more precise explanation of our universes' natural mechanics.





messy. Regardless of the human pain that can accompany dissonance, it is no less important for personal progress than it is for scientific progress. We are, by our very nature, comparative organisms. We have dreams, hopes, and wishes. These future possibilities create a necessary dissonance. This discrepancy births both an uncomfortable recognition that we are not who we desire to be, but also awakens a motivation to resolve this discrepancy and achieve our dreams. Our dreams, however, will (fortunately) never be resolved. Each successive accomplishment gives rise to a new discrepancy. As such, we find ourselves in a never ending paradoxical inequality in which our future self always exceeds our current self. This beautiful conundrum is necessary for a progressive life.

We are both propelled and repulsed by dissonance. Dissonance presents an imbalance that we are implicitly motivated to solve. When we learn a new fact that is incongruent with a deeply held belief, it is unsettling. It causes us to seek resolution. It stokes the obsessive fires of curiosity in search of resolution. In this way, the most profound, insightful learning can be stressful. At the same time, it is the most existentially rewarding.

The repulsive nature of dissonance, however, can make us vulnerable to the intoxicating lure of affirmation. We are ego defensive and will often go through elaborate cognitive gymnastics in order to avoid a blow to the ego and its accompanying dissonance. When we fail, we can make either internal or external attributions. Either something we did led us to failure or something outside of our control (i.e., the environment) was the cause. Externalization (i.e., assigning blame to something outside of the self) can be temporarily anxiolytic because it allows us to evade dissonance. However, failing to acknowledge the possibility of an internal cause can sabotage our ability to confront the dissonance that could result in a better version of our self.

In *The Ethics of Ambiguity*, the existential philosopher Simone de Beauvoir puts the inherent ambiguity of nature front and center. To be human is a conundrum. We are both caused and causative. We both affect and are affected by the world. In this way, our existence is ambiguous, paradoxical. Embracing this ambiguity and its arising dissonance is necessary for our personal progress.

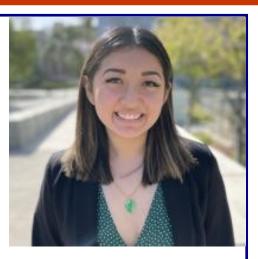
The Importance of Social Support for Graduate Students

Βv

Brianna Sadighian - SWPA Graduate Representative University of Louisiana at Lafayette

Graduate students face many stressors and challenges, such as exhaustion, decreased self-efficacy, and burnout, while working towards their degree. Finding ways to mitigate the negative effects of these stressors is important for students in order to complete their degree requirements. Research has found that social support can play a major role in diminishing the effects of stress associated with graduate school (Rigg et al., 2013; Goplerud, 1980; Jairam & Kahl, 2012; El-Ghoroury et al., 2012).

The extensive demands associated with graduate school have been found to lead to emotional exhaustion and burnout in students (Rigg et al., 2013; Goplerud, 1980). Emotional exhaustion refers to failing, wearing out, or becoming exhausted due to excessive demands on energy on an individual (Freudenberger, 1974), while burnout refers to the emotional depletion and decrease or loss in motivation as a result of interpersonal



and emotional stressors (Leiter et al., 2015). Graduate students are more susceptible to experiencing these two concepts, which can then lead to increases in depressive symptoms, psychological distress, symptoms of anxiety, and personal and professional difficulties (Rigg et al., 2013; Goplerud, 1980; El-Ghoroury et al., 2012). In a large (N=387) sample of psychology graduate students, 70% of respondents reported experiencing a professional or personal challenge or life stressor that negatively influenced their functioning (El-Ghoroury et al., 2012), which shows that these negative experiences are extremely prevalent to this population of individuals. Research has found that social support, the availability of people around you that show they care about you and your well-being, and with whom you can rely on (Sarason et al., 1983), can mitigate experiences with burnout and emotional exhaustion (Rigg et al., 2013; Goplerud, 1980). Findings suggested that students that reported higher levels of social support, especially from advisors, had an easier time coping with emotional exhaustion (Rigg et al., 2013). Increased levels of social support have also been seen to aid in successful completion of degree requirements, specifically in doctoral students (Jairam & Kahl, 2012). In this study, researchers asked participants about the behaviors from their social support networks, and how they perceived this to benefit and drawback their ability to complete their degree. Findings supported their hypothesis that, social support provided positive support towards their degree completion (Jairam & Kahl, 2012).

This research suggests that social support can be vital for graduate students to mitigate the negative effects of emotional exhaustion and burnout, aid in successful degree completion, and increase their self-efficacy. Having individuals in your life, with whom you can lean on when in need of support, is a basic human need. This is no different for individuals facing the rigor that is associated with graduate degree programs. Graduate students should be aware of when they are in need of social support, and seek that out from peers and advisors when necessary.

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The Impact of Imposter Syndrome Among Undergraduate Students

Ву

Madison Yarbrough - SWPA Undergraduate Representative University of Central Arkansas

Students are often faced with a constant battle of competition and comparison on their academic journey. Students are first placed with the challenge of being accepted to a college or fighting for scholarships to aid in paying for college. Once accepted the challenges only excel as students compete for internships, leadership positions, and graduate school admissions. Oftentimes it is assumed that students who have been successful in these endeavors will feel confident, and secure in themselves and their academic journey. However, this is not always the case as many students today are vulnerable to the phenomenon called imposter syndrome.

Imposter syndrome is described as, "High-achieving individuals who, despite their objective successes, fail to internalize their accomplishments and have persistent self-doubt and fear of being exposed as a



fraud or impostor" (Bravata et al., 2020). This phenomenon was first described in a 1978 study that showed extremely high-achieving and accomplished women felt inferior and like their success was due solely to luck (Clance & Imes, 1978). Recent studies have shown that this is not unique to women as it is estimated that 70% of people will have thoughts and feelings of imposter syndrome at least once in their life (Sakulkul & Alexander, 2011). While some demographics of people are more likely to be subjective to these feelings it is not exclusive to any gender, background, or success level.

Some factors can contribute to a greater likelihood of developing imposter syndrome. A systematic review of imposter syndrome done by the National Institute of Health (NIH) found that students from minority groups that face negative stereotypes or discrimination, are the first in their family to get an education, or are financially dependent can predispose them to feelings of inferiority; this can further lead students to continue to feel less than average despite having large success. Similarly, students with imposter syndrome were significantly higher in traits of pessimism, perfectionism, low-self esteem, and testing anxiety. While imposter syndrome is not acknowledged as a disease or a medical condition, left unattended to it can still have detrimental impacts. There is a very high and harmful association found between imposter syndrome and performance, satisfaction, and burnout in education and workplaces. Additionally, there are correlations between imposter syndrome and depression, anxiety, and suicidal ideations (Bravata et. al, 2019). These studies show that imposter syndrome is not only prevalent among all kinds of students but also that trying to find methods to combat the effects is more important than ever in our student populations.

There are many ways that campuses can work to minimize their students' feelings of being an imposter. The first is to incorporate the recognition of the phenomenon in freshman orientations, mentoring sessions, and other campus resources. Many students are unaware of this and assume they are alone in the feeling of not-belonging or being a "fraud" in their education. Making students aware of this before it happens can help them understand what they are feeling and how to overcome it. Additionally, it can be important to provide students with tips to combat these feelings before they occur. Some of these tips could include celebrating successes, staying humble, and sometimes faking it till you make it (Robinson, 2017). Regardless of how you received awards and honors, it is important to celebrate getting them. Additionally, it is human nature to not always feel confident, however, if you fake it often it leads to a higher sense of confidence.

In conclusion, imposter syndrome is a prevalent issue that many undergraduate students face in their academic journey. If universities do not emphasize caring for these students it can lead to lower satisfaction with their education, lower performances, and extreme burnout. This phenomenon is extremely common, however, rarely talked about. It is important now more than ever for universities to teach their students about it and instill in them the tools to overcome these feelings. It is human nature for every student to feel inadequate at some point along their journey. However, these feelings should never be permanent or undermine the hard work that it takes for students to be successful. Every student deserves to see and feel pride in their work and accomplishments as an undergraduate student.

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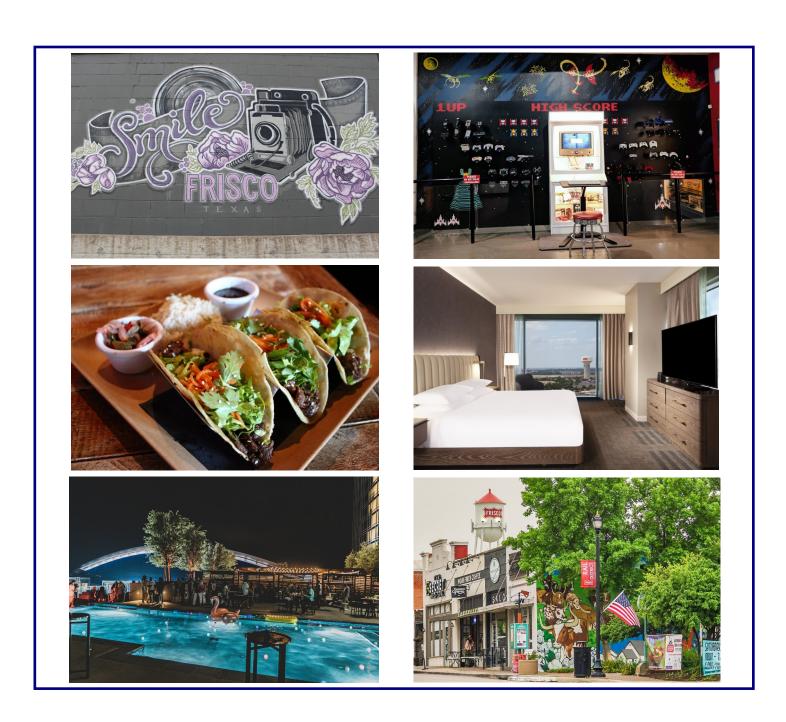
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