



Volume 57
Number 3
Winter 2020

Editor: ./Steven Toaddy

EDITORIALS

On Competition

./Steven Toaddy

President's Column

Eden King

On the Legal Front

Richard Tonowski

The Academics' Forum: An Interview with Dr. Lillian T. Eby: The First Female Editor of the *Journal of Applied Psychology*

Dorothy R. Carter & Nathan T. Carter

The Bridge: Connecting Science and Practice

Blended-Reality Training: A New Approach to Simulations

Michael J. Keeney

Innovative Connections Between I-O Psychology and International Relations:

The Work of Raymond Saner and Lichia Yiu

Aimee Lace and Stuart C. Carr

SIOP Award Winners:

Meet David Baker, Winner of the Distinguished Professional Contributions Award

Liberty J. Munson

SIOP Award Winners: Meet the Team Who Won the Schmidt-Hunter Meta-Analysis Award!

Liberty J. Munson

FEATURES

For All Readers

Opening Up: A Primer on Open Science for Industrial-Organizational Psychologists

Christopher M. Castille

For Practitioners

Speed Benchmarking Event Summary

Jerilyn Hayward

For Academics

Max. Classroom Capacity: Dr. Strange Grade

Loren J. Naidoo

For Graduate Students

TIPTopics: Writing Is Hard: A Discussion on Writing in Graduate School

Andrew Tenbrink, Mallory Smith, Georgia LaMarre, Laura Pineault, and Tyleen Lopez

Inside SIOP

Get Ready for SIOP 2020 in Austin! The Road to the Program and Featured Sessions You Won't Want to Miss

Elizabeth McCune

REPORTS

Where Are They Now? Re-Examining the Migration of I-O Psychologists to Business Schools

Patrick J. Lee, Nicolette A. Rainone, Juliet R. Aiken, Marcus W. Dickson, Charles A. Scherbaum, Tiancheng Chen, and Paul J. Hanges

The SIOP Ambassador Programs Helps
Conference Attendees Make a
Connection

Jenna-Lyn Roman

Searching for I-O Psychology: How
Practitioners, Academics, and
Laypeople Engage With the I-O Brand
Online

Bo Armstrong, Gordon B. Schmidt,
Sayeedul Islam, William P. Jimenez,
and Eric Knudsen

The History Corner: Reflections on the
SIOP 2019 Living History Series With
Benjamin Schneider

Margaret E. Brooks

It's Down to the Final Four

Milton D. Hakel

SIOP in Washington: Advocating for I-
O in Federal Public Policy

Alex Alonso and Bill Ruch

Advanced Professional Development:
A New SIOP Program for Experienced
Professional Members

Rob Silzer

SIOP Conference, Austin, 2020: All-
New Individual Leadership
Assessment Course

Rob Silzer, Sandra Davis, and Vicki
Vandaveer

Plan Now to Attend the 2020 SIOP
Preconference Consortia!

Debbie DiazGranados

Membership Milestones

Jayne Tegge

Members in the Media

Mariah Clawson

On Competition

./Steven Toaddy

It's American football season, which has some of the people I love glued to the television so that they can find out whether they'll be angry or just disappointed for the rest of the day. This provides many opportunities for (petulant) reflection on my part—from musing about BIRGing and CORFing to wondering just how it is that we manage to encourage young men to accumulate concussions for our amusement to, perhaps most foundationally, wonder what it is about sport that makes it make sense at all. I participate—and have participated—in my share of athletics, from tag on the playground in my youth to whatever trendy activities help me stay hip these days, but—and I'm using judgmental language here without justification—I participate in them in moderation, without, for instance, building my life, sponsorship deals, or multibillion-dollar franchises around them. Perhaps this sounds like sour grapes to you, but from where I stand, the point is more that I engage in these activities to exercise and celebrate my body, to connect with friends, and to while away the hours that stand between now and the grave; sports fandom accomplishes at best the latter two and at worst none of these objectives, plus it drives a wedge between the people of one clan and the next. What I see (or choose to see, or infer, or see but only through the lens of confirmation bias) is not so much the support and celebration of athletic and, more broadly, human excellence but the vilification of people on the basis of their uniform or fan-apparel colors, the celebration of the injury of humans (not just the sport in general, but jeering and cheering and gratitude when a player is rendered unable to continue playing due to injury), and suppression of fairness and sportspersonship in favor of booing a referee for making an inconvenient (if just) call on the field. I am not impressed.

Perhaps I have strayed too close to too many philosophy classes; perhaps I need to grow thicker skin and toss the pigskin around a bit more; perhaps I'm just a product of my generation; perhaps it's all a bit of good fun and I should be less judgmental. Perhaps there's something there that I don't understand. There's certainly money in it, if one positions oneself correctly.

But there is what I would characterize as toxic competition occurring not only in professional sports and their couch-based financial base. I have a bit of an acute sensitivity for this sort of thing, but I've seen the same sorts of practices—with admittedly fewer concussions—in our own field over the past months and years. I've heard of organizations competing over top talent with resultant bad blood between them. I've heard of annual submissions that didn't make it in and the anger, the outrage, the jealousy of their submitters. I've watched researchers butt heads in unfriendly ways over their pet theories. I've walked through the booths of I-O service providers to hear them disparage each other. I've read submissions to *TIP* in which entire classes of people are reviled. Speaking anecdotally, we as members of the profession are collectively as vindictive, petty, and self-interested as any other group of people with whom I am familiar, and when given an opportunity to advantage ourselves at the cost of our fellow members, we do so without hesitation. I would that you can think of dozens of counterexamples, but I suspect that you cannot deny the truth of this claim based on your own experience of individual behaviors on the part of our membership.

Those whom I've heard defend competition have done so on the basis of its driving us to greater heights—of accomplishment, of motivation, of glory, of human excellence, or at least of entertainment. Even if these things are true, I wonder at the cost, and I wonder how we could optimize that cost/benefit ratio—what is the sweet spot between professional envy and ire on the one hand and low performance

through lack of motivation on the other? For my part, I'm going to try to keep competing but to focus on celebrating the excellence of those who defeat me and those whom I defeat alike. We clearly aren't all in this together, but I see no reason to allow that to drive us further apart.

This issue has a bunch of great content to get me started on that initiative. **Christopher Castille** helps us see (among many other things) how we can maximize the furtherment of our field rather than cutthroat and questionable research practices in his [primer on Open Science](#). **Liberty Munson** brings us [the story of David Baker](#), winner of the Distinguished Professional Contributions Award, who doesn't fail to appreciate the collaboration, help, and friendship that he's received from others in his professional career. **Elizabeth McCune** brings us [a celebration of the excellence of submissions to the SIOP 2020 Annual program](#). **Aimee Lace** and **Stuart Carr** report on [some ways to bend I-O psychology to the service of peace](#). Thanks to all of this issue's authors—and to the newly reformed [TIP Editorial Board](#) for their thoughtful and constructive reviews of submissions. Let's follow their lead in gently and gratefully demanding excellence of ourselves and of others.

President's Column

Eden King



Hello SIOPers!

As we begin 2020 together, we can look back and be proud of our shared successes. I-O psychologists are making an impact on organizations, students, and society. SIOP as a professional organization is growing with regard to membership, conference attendance, and scope of activities.

Indeed, you don't have to look further than the fantastic 2019 Leading Edge Consortium, led aptly by **Doug Reynolds** and **John Scott**, to find an example of such success. You could also ask about the persistent efforts of our representatives to the American Psychological Association (**Steve Stark, Tammy Allen, Sara Weiner, and Jeff McHenry**) to encourage recognition of applied psychology. The awesomeness of I-Os is also evident by the outstanding quality of applicants and winners recognized by the Awards Committee (chaired by the fabulous **Kristen Shockley**). **Alex Alonso's** GREAT (Government Relations Advocacy Team) Committee is actively engaged in federal advocacy efforts. I could keep going; the list of efforts done by and for SIOP is truly astounding.

In addition to celebrating the past, the new decade also reminds us to think carefully, critically, and creatively about our future. To that end, the Executive Board will be engaging in renewed and focused conversation around our vision, goals, and objectives. Strategic planning will enable our organization to renew and maintain a positive course for our organization.

Let's be honest: This whole thing is way outside my personal comfort zone. Yet, I genuinely believe it is a necessary and important step for charting a clear path forward. I am confident that #teamSIOP will work together effectively in this endeavor, and I look forward to sharing the content and outcomes of our discussion in the next column.

In the meantime, I hope that the new year is full of happiness for each of you!

On the Legal Front

Richard Tonowski



Note: The opinions expressed in this article are those of the author and not necessarily those of any government agency. The article should not be construed as legal advice.

EEOC'S Pay Data Collection Plan: On Again, Off Again, and Maybe a Reboot History (Abbreviated)

The story of the U.S. Equal Employment Opportunity Commission's (EEOC) collection of private-sector pay data continues. For early background from some of the players, see Silverman (2015); more recent events are covered by Yang and Shiu (2019). A report on data collection feasibility by the National Research Council (2012) of the National Academy of Sciences (NAS) was commissioned by EEOC. That report recommended a pilot study, subsequently conducted by Sage Computing (2015). The instrument for collection was the annual EEO-1 workforce demographics report, now designated as Component 1, submitted annually by large private organizations and federal contractors. Pay data were designated as Component 2 of the report. Data collection was approved by the U.S. Office of Management and Budget (OMB), the agency that oversees, among other things, burden on respondents for federal information gathering. OMB reversed itself under the Trump Administration in 2017. The National Women's Law Center (2019) sued OMB to get the data collected. Employers with at least 100 employees required to file EEO-1 demographic reports (Component 1) had to submit pay data (Component 2) for 2017 and 2018 by September 30.¹ The court required data collection through April 2021. The U.S. Department of Justice (DOJ) filed an appeal to overturn the order. The EEOC commissioners held a meeting on November 20, 2019 for presentations on the future of the EEO-1. As expected, there was consensus² that Component 1 demographics should be maintained and sharp disagreement on pay data.

Sticking Points

Employer burden.

EEOC now agrees with employer-side arguments that the reporting burden was underestimated by the agency. The employer representatives (American Bankers Association et al., 2019) give a view of the problems and the changes in estimates over time from EEOC. Not every employer has the data-processing resources to get its data into reporting shape, specifically to link up pay data with employee demographic data. With the various demographic categories and 10 pay categories, that's 3,660 crossed cells to fill. Larger companies file separate reports for locations with 50 employees plus an overall report.

Mitchell (2019) indicated anecdotal evidence of employers having trouble with the current Component 2 reporting mechanism.

Frye (2019) found insufficient detail in how EEOC now calculated Component 2 burden. A reasonable expectation would be that the burden should diminish as employers developed their reporting services or contracted with data analysis providers. This was also mentioned in a letter to the agency from 29

U.S. Senators (Murray et al., 2019; the senatorial letter) urging pay data collection, which noted that employers had already been compelled to provide 2017 and 2018 data; the burden is what is needed to maintain the reporting system not build it from scratch. The point was also raised by Stevenson (2019). In contrast, Clements (2019) argued that employee movement (promotions, transfers, reorganizations) meant that future reports would not be produced by simply pushing a button.

The senatorial letter also noted that pay data were collected from state and local government agencies with the EEO-4 report for years. EEOC indicated that the data were not useful (Mitchell, 2019). This leads to the next sticking point, purpose of the data collection.

Purpose.

Why EEOC should collect pay data seems to involve two main rationales. First, the data would help in EEOC and the U.S. Office of Federal Contract Compliance Programs (OFCCP) enforcement efforts. The current position of both agencies is that it is not worth the resources to process and use the data. Stevenson (2019) argued that an enforcement consideration should be that the only way to combat unintentional disparities is with intentional evaluation of selection and pay data, such as provided by EEO-1.

Second, data collection would shed light on the gender (and race) pay gap. But this may be merely tangential to the missions of the enforcement agencies. How much of the pay gaps is due to unlawful practices varies with the study. In general, there is a small but persistent gap that cannot be explained by supposedly legitimate factors. A letter signed by 56 members of the House of Representatives (Frankel et al., 2019, p. 1) put the gender pay gap as women earning \$0.82 for every \$1.00 earned by men, on average. It also indicated that estimates put the unexplained portion “as much as 38%.” That’s less than \$0.07 on average for the high-end estimate of potential discriminatory effect. Of course, this matters to anyone shortchanged because of discrimination, but it points to a limitation on expecting antidiscrimination enforcement efforts to solve all pay-gap problems.

The senatorial letter (Murray, et al., 2019) has a heading (p. 1) that states that discrimination drives the gender wage gap. No other possible causes are mentioned on that page. A qualification appears on p. 2, that the gap “is driven in significant part” by discrimination.

Still, an argument for pay data collection is that, even if crude, the data would tell us more than we know now. One of the disparity factors that may be outside of individual employers’ control (assuming no discriminatory steering into certain jobs) is occupational segregation. Getting a handle on this to differentiate it from discriminatory practices would be useful, and Component 2 can help (Stender, 2019). Tomaskovic-Devey (2019) wrote that employers should welcome data that indicate that not all firms are equally problematic. Component 2 would provide baselines so that firms could judge if they had disparities.

Eastman (2019) indicated that the pay data collection project had problems from the start. EEOC consulted with the National Research Council (2012) of the National Academy of Sciences (NAS). The first thing that NAS indicated was lack of a comprehensive plan for using the data. Eastman sees this as still absent. The second matter was a pilot study. A study was conducted and simulated data were analyzed, but this was absent a comprehensive plan, actual employer data, actual data collection from employers, or analysis of such data. Other recommendations from NAS concerning the nature of the data, analytic capability, and data protection were not followed.³

There seems to be consensus that Component 2 data alone are not detailed enough to be evidence in litigation. The employer concern is that it may be detailed enough to target an employer for a lawsuit. If you are a pay equity advocate, you might think that's a good idea. If you're on the employer side, you have another idea: swatting down baseless nuisance suits. Employers can always explain what they're really doing with pay. But apart from those with something to hide, employers do not want to spend time dealing with bad claims and bad publicity tied to bad data, or to disclose more details on their pay systems to competitors and potential litigants in defending against these claims.

The analysis of EEO-1 pay categories does not look like the detailed analysis that would be done in a pay audit. Mitchell (2019) discussed six differences that could lead to conflicting results.

Data security versus transparency.

Pay equity advocates have noted that without greater access to how people are paid, it is difficult for employees or enforcement agencies to know if anyone is being shortchanged. By executive order in the Obama administration that is still in place, federal contractors cannot prohibit their employees from discussing pay. But this includes only a subset of employers and does not mandate disclosures from management. Transparency is mentioned in the senatorial letter (Murray et al., 2019) as a purpose for Component 2. EEOC has maintained that employer-level EEO-1 data would not be disclosed. But there has been concern that granular data provided to researchers and other agencies would be released to others. Specifically, OFCCP routinely gets EEO-1 data and that data might be subject to public disclosure under the Freedom of Information Act. But in November, OFCCP (2019) made its position clear: "OFCCP will not request, *accept* [italics added] or use Component 2 data, as it does not expect to find significant utility in the data given limited resources and its aggregated nature, but it will continue to receive EEO-1 Component 1 data."

This nondisclosure has been contrasted with United Kingdom's approach: aggregated company-wide gender pay gaps and public disclosure. It has been termed by some as name and shame. Smith and Mulvaney (2019) reported that litigation had not spiked with disclosure. A similar program in Denmark reportedly led to shrinking the gender pay gap by 7% (which happens to be analogous to the \$0.07 mentioned above). Stevenson (2019) proposed that an alternative to the current Component 2 would be less detail to reduce the burden on employers, but public reporting.

Motivating employers to analyze further.

Yang and Shiu (2019) argued that data collection is needed to institutionalize pay audits beyond current requirements on federal contractors enforced by OFCCP. Getting employers to do more than satisfy Component 2 reporting was discussed in the last "Legal Front." Whether pay data collection has motivating force currently, especially when the data collection procedure is not aligned with the conventional approach to pay audits, is debatable. Critics of Component 2 note that false positives indicating discrimination might compel employers to undertake more detailed studies to fend off spurious claims; presumably that is not the best motivation to be proactive regarding pay disparities.

It's Not Over Until It's Over

The regulatory agenda of the EEOC (2019) envisions further discussion of "meaningful" pay data collection in September 2020. Some employers would like to see any rulemaking follow the Administrative

Procedures Act, which could include early lawsuits against a proposal. EEO-1 authorizations have followed the Paperwork Reduction Act. Data collection authority is written into Title VII.

Meanwhile . . .

One blockbuster (\$400M) pay equity case brought by OFCCP against Oracle took a new turn. The company has been litigating this through the agency's hearings system since 2017. *Oracle America Inc. v. U.S. Department of Labor et al.* (2019) has now gone to federal court to complain that the system is unconstitutional. The complaint alleges that OFCCP had been running its own procedure with no authorization since the 1970s, when it should have referred cases to EEOC or DOJ. "Without authority from any act of Congress—indeed, in contravention of congressional legislation—a group of unelected, unaccountable, and unconfirmed administrative officials have cut from whole cloth this adjudicative agency-enforcement scheme" (*Oracle*, 2019).

Complaints against the system are not new, with employers alleging that legal interpretations and procedural safeguards do not match those in federal courts. The suit comes at a time when OFCCP has been addressing procedural and transparency grievances from employers. Being more employer-friendly apparently has not diminished enforcement activity; it has been a record-breaking time for monetary recovery from contractors (\$81M, October 2016–September 2019).

Implications for I-Os

We have EEOC's former leadership in conflict with current leadership, each with a cohort of supporters to question the accuracy of whatever the other side has done. The agency seems open to discussion to get it right in the fall of 2020. Not that there will be unanimity on "right." Equal pay advocates likely would have full, open disclosure of pay practices. Employers, including the good actors, likely would want to forego any hassle with pay reports. The issue of whether there should be any pay data collection and (if so) what form it might take goes beyond only our profession, but I-Os have the expertise for designing performance evaluation, compensation, and reward systems, and statistical smarts for conducting pay audits and related analyses. We, as individuals and as an organization, should at the least be providing comments on proposals when EEOC gears up.

You Don't Have a Disability Until You Have a Disability

The Americans with Disabilities Act (ADA) protects workers who are not disabled but who are regarded by employers as such. This raises a question: Does ADA cover people who are not disabled nor regarded as disabled now, but who are regarded as likely to become disabled in the future?

EEOC is saying yes, but the courts are saying no. EEOC was on the losing side recently in two cases in separate appellate circuits. In *EEOC v. South Tampa Massage Envy* (2019), a woman was fired because she went to Africa against her employer's wishes. The employer feared she would contract Ebola (she didn't) and bring it back to the workplace. EEOC sued, the case was dismissed, and the appeal went to the Eleventh Circuit. The court ruled that her employer did not regard her as disabled when she was fired. Therefore, ADA does not apply. Because the employee was in an at-will situation,⁴ there was no further recourse.

In the Seventh Circuit, EEOC filed an amicus brief, urging the court to read use of the present tense in the ADA as including the future. The case, *Shell v. Burlington Northern Santa Fe (BNSF) Railway* (2019),

involved obesity. BNSF raised safety concerns possibly arising from obesity but asserted that it did not consider the employee to be disabled currently. The court was persuaded by the employer's argument.

Commentators have noted that these rulings are in line with similar conclusions in other circuits, but they may involve how fact patterns are viewed in specific cases. It may make a difference whether a risk of becoming suddenly incapacitated involves driving a truck on a freeway or driving a mouse at a computer. It may also matter if the concern for disability is that the person would become disabled because of job conditions that interact with that person's physical condition. The U.S. Supreme Court held in *Chevron v. Echazabal* (2002) that the employer had a business necessity justification in not having an employee sensitive to certain toxins working where the toxins would be encountered. EEOC regulation favoring Chevron was upheld.

None of these cases has involved physical ability testing, although parallels can be drawn. For example, an employer uses a test to screen out those who can do repetitive heavy lifting now but who are likely to become injured if they do the job over time. Besides the issue of whether this is testing to uncover a disability, a future court case could involve the probability of injury, its severity, and the length of time in which the injury is expected to occur.

#You, Too

Eradication of sexual (and racial) harassment in the workplace is a compelling matter for our time. *Menaker v. Hofstra University* (2019) provides a caveat that should be noted by I-Os and other consultants involved with policy making or training in this area. A male university sports coach denied a full scholarship to a female student athlete then on partial scholarship. The student claimed that she had been promised the full scholarship by the coach's predecessor but no record of this was found. Allegedly, the student retaliated by claiming sexual harassment under Title IX, which applies to educational institutions. The coach met with university officials, provided records of correspondence with the student, and suggested other students to interview. The coach was told by an official that one instance of harassment was known to be unsubstantiated, and he would be kept informed of the progress of the investigation. The witnesses mentioned by the coach were not interviewed. The coach was summoned to a meeting without being told the purpose and was fired for "unprofessional conduct." No specific charge was cited as warranting termination; it was the "totality" of the accusations.

The coach sued under Title VII, arguing that his sex was the factor underlying his allegedly unjust termination. District court did not agree and dismissed the case for want of an actionable claim. As an at-will employee, the coach had no legal standing without a discrimination complaint. He appealed to the Second Circuit.

The appellate court found that the coach had established at least a minimal inference of sex discrimination. The university previously had been under criticism for not acting on harassment complaints by women, had not followed its own procedures in his case for handling harassment complaints, and may have allowed itself to be manipulated by the student to show that it was now taking sexual harassment against women seriously. The case was ordered back to district court for trial.

The standards for surviving dismissal of a case are not as demanding as the standards for winning it. But the case is a reminder that procedural justice matters. Title VII also applies to the accused.

Blind Acceptance

Many of us have heard of Goldin and Rouse's (2000) study, how blind auditions for musicians seeking positions in orchestras substantially increased the hiring of women. Sommers (2019), citing a statistical critique provided by Gelman (2019), indicated that the study proved nothing about blind selection. As Gelman noted, contraindication was in plain sight, as stated by the authors themselves: large sample overall but small numbers for key findings, not using conventional levels of statistical significance (but claiming "economic" significance), and a finding in the wrong direction. But what grabbed public attention was the line near the end of the article: "Using the audition data, we find that the screen increases—by 50 percent—the probability that a woman will be advanced from certain preliminary rounds and increases by several-fold the likelihood that a woman will be selected in the final round." As the recent critiques indicated, the importance of the article had been expanded in its apparently uninformed retelling.

None of this should detract from using methods for reduction of possible bias in selection procedures, including blind evaluations. But claims for a method should not go beyond the data.

Thinking Outside the Banned Box

EEOC v. Dolgencorp (2019) regarding use of criminal history for employment ended with a settlement valued at \$6 million. The retailer had been making conditional offers of employment pending examination of criminal history and then applied a table of exclusions. Exclusions disproportionately fell on some demographic groups. Should the company continue use of criminal history for employment decisions, it is required to develop a revised procedure with a criminologist named in the settlement. Unlawful discrimination with the current procedure was neither admitted nor proven.

EEOC scored no major court victories in criminal history cases but got some favorable settlements.

We may be entering a new phase with employment for ex-offenders. Local ban-the-box laws have become widespread. Re-integrating ex-offenders into the workforce has become a concern across the political spectrum. Where do we go from here?

As Hyman (2019) pointed out, issues are not settled. Banning the box on the employment application may not mean much if many applicants are subsequently found unsuitable; this was the issue with Dollar General's procedure. By not asking about criminal history, some employers may be inclined toward "statistical discrimination;" certain demographic groups are more likely to have people with criminal convictions, so applicants from those groups are to be avoided. There are legitimate employer concerns that need to be addressed: what constitutes an appropriate evaluation of criminal history, applicants needing additional training, and the threat of a negligent-hiring suit. Some of this is addressed by tax credits and bonding; some states have provisions for establishing due diligence to avoid negligent hiring. For I-O practitioners, the issue is assessment of both qualifications and suitability—preferably, a generally accepted professional practice regarding employer risk in this area.

Personal Note

I am not listing an organizational affiliation because I am leaving EEOC. It's been a good 18 years. But I'm ready to move on, and other people have the situation well in hand. My interest in I-O psychology, employment law, and equal employment opportunity is unabated. Also unabated is my admiration for my EEOC colleagues, especially those with whom I served in Research and Analytic Services (RAS). Attorneys have an ethical obligation to provide their clients with zealous advocacy. In RAS we advocated for

the truth that our professional expertise led us to discern and present. Through all the years and leadership changes, this is what the agency expected of us. We did our best.

Notes

¹ That date has been extended several times. The court's decision will keep current data filing open into 2020.

² But see Dwyer (2019) on possible inconsistencies in Component 1 estimates. He argues for an expanded Component 2 that would make Component 1 redundant.

³ However, EEOC has undertaken general upgrading of its analytic and IT capabilities in recent years.

⁴ Employment at will is legal doctrine that, absent an employment contract (or a collective bargaining agreement) stating otherwise, either the employer or the employee can end the employment relationship at any time, for any reason that is not unlawful.

References

- American Bankers Association, Associated Builders and Contractors, Associated General Contractors of America, HR Policy Association, National Federation of Independent Business, National Retail Foundation, Society for Human Resource Management, and U.S. Chamber of Commerce. (2019, November 12). Letter to Bernadette B. Wilson, Executive Officer, EEOC. Retrieved from <https://www.regulations.gov/document?D=EEOC-2019-0003-7275>
- Chevron U.S.A. Inc. v. Echazabal, 536 U.S. 73 (2002).
- Clements, L.A. (2019, November 20). Written testimony. *EEOC convenes public hearing on the proposed revision of the Employer Information Report (EEO-1)*. Retrieved from <https://www.eeoc.gov/eeoc/meetings/11-20-19/index.cfm>
- Dwyer, M. (2019, September 11). Comment on the Equal Employment Opportunity Commission "Agency Information Collection Activities: Existing collection." Retrieved from <https://www.regulations.gov/document?D=EEOC-2019-0003-11508>
- Eastman, M. J. (2019, November 20). Written testimony. *EEOC convenes public hearing on the proposed revision of the Employer Information Report (EEO-1)*. Retrieved from <https://www.eeoc.gov/eeoc/meetings/11-20-19/index.cfm>
- Equal Employment Opportunity Commission. (2019, November 20). *Amendments to the regulations at 29 CFR Part 1602 to provide for a pay survey*. Retrieved from <https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=201910&RIN=3046-AB15>
- Equal Employment Opportunity Commission v. Dolgencorp (Dollar General), No. 13 C 4307 (N.D. Ill November 18, 2019) (settlement).
- Equal Employment Opportunity Commission v. South Tampa Massage Envy, LLC., Nos. 18-11121, 18-12277 (11th Cir. September 12, 2019).
- Frankel, L. et al. (2019, October 2). Letter to Janet Dhillon, Chair, EEOC. Retrieved from <https://www.regulations.gov/document?D=EEOC-2019-0003-11508>
- Frye, J. C. (2019, November 20). Written testimony. *EEOC convenes public hearing on the proposed revision of the Employer Information Report (EEO-1)*. Retrieved from <https://www.eeoc.gov/eeoc/meetings/11-20-19/index.cfm>
- Gelman, A. (2019, May 11). Did blind orchestra auditions really benefit women? *Statistical Modeling, Causal Inference, and Social Science*. Retrieved from <https://statmodeling.stat.columbia.edu/2019/05/11/did-blind-orchestra-auditions-really-benefit-women/>
- Goldin, C. & Rouse, C. (2000). Orchestrating impartiality: The impact of "blind" auditions on female musicians. *American Economic Review*, 90(4), 715-741.
- Hyman, J. (2019, November 19). A pox on ban the box. *Workforce*. Retrieved from <https://www.workforce.com/2019/11/19/a-pox-on-ban-the-box>
- Menaker v. Hofstra University, No. 18-3089 (2nd Cir. August 15, 2019) (vacate and remand).

- Mitchell, J. W. (2019, November 20). Written testimony. *EEOC convenes public hearing on the proposed revision of the Employer Information Report (EEO-1)*. Retrieved from <https://www.eeoc.gov/eeoc/meetings/11-20-19/index.cfm>
- Murray, P., Cantwell, M., Baldwin, T., Feinstein, D., Blumenthal, R., Sanders, B., Warren, E., Booker, C., Klobuchar, A., Wood Hassan, M., Gillibrand, K., Menendez, R., Duckworth, T., Durbin, R., Hirono, M., Jones, D., Rosen, J., Kaine, T., Shaheen, J., ...Merkley, J. (2019, November 12). *RE: Comment on notice of information collection-request for new control number for a currently approved collection: Employer Information Report (EEO-1) Component 1; Revision of Existing Approval for EEO-1 Component 2 (Docket Number: EEOC-2019-0003)*. Retrieved from <https://www.regulations.gov/document?D=EEOC-2019-0003-11504>
- National Research Council. (2012). *Collecting compensation data from employers*. Washington, DC: National Academies Press. Retrieved from <https://www.nap.edu/catalog/13496/collecting-compensation-data-from-employers>
- National Women's Law Ctr. v. OMB, 358 F. Supp. 3d 66 (D.D.C. 2019), appeal docketed, No. 19-5130 (D.C. Cir. May 8, 2019).
- Office of Federal Contract Compliance Programs. (2019, November 25). *Intention not to request accept or use employer information report EEO-1 Component 2 data*. Retrieved from <https://www.federalregister.gov/documents/2019/11/25/2019-25458/intention-not-to-request-accept-or-use-employer-information-report-eeo-1-component-2-data>
- Oracle America Inc. v. U.S. Department of Labor et al., No. 1:19-cv-03574 (D.D.C. November 27, 2019) (complaint filed).
- Sage Computing. (2015). *Final report to conduct a pilot study for how compensation earning data could be collected from employers on EEOC's survey collection systems (EEO-1, EEO-4, and EEO-5 survey reports) and develop burden cost estimates for both EEOC and respondents for each of EEOC surveys (EEO-1, EEO-4, and EEO-5)*. Retrieved from <https://www.eeoc.gov › employers › eeo1survey › pay-pilot-study>
- Shell v. Burlington Northern Santa Fe Railway Company, No. 19-1030 (7th Cir. October 29, 2019).
- Silverman, L. (2015, March 18). EEOC quietly moves forward with plans to collect compensation data. *HR Daily Advisor*. Retrieved from <https://hrdailyadvisor.blr.com/2015/03/18/eeoc-quietly-moves-forward-with-plans-to-collect-compensation-data/>
- Smith, P., & Mulvaney, E. (2019, September 16). U.S. pay data effort could fall short without public scrutiny. *Bloomberg Law News*. Retrieved from https://www.bloomberglaw.com/document/X62RVQOC000000?bna_news_filter=daily-labor-report&jcsearch=BNA%25200000016cf892d9c0a96cf66a750002#jcite
- Sommers, C. H. (2019, October 20). Blind spots in the "Blind Auditions" study. *Wall Street Journal*. Retrieved from <https://www.wsj.com/articles/blind-spots-in-the-blind-audition-study-11571599303>
- Stender, J. (2019, November 20). Written testimony. *EEOC convenes public hearing on the proposed revision of the Employer Information Report (EEO-1)*. Retrieved from <https://www.eeoc.gov/eeoc/meetings/11-20-19/index.cfm>
- Stevenson, B. (2019, November 20). Written testimony. *EEOC convenes public hearing on the proposed revision of the Employer Information Report (EEO-1)*. Retrieved from <https://www.eeoc.gov/eeoc/meetings/11-20-19/index.cfm>
- Tomaskovic-Devey, D. (2019, November 19) The EEOC should continue to collect pay data. *Law360*. Retrieved from <https://www.law360.com/articles/1221086/the-eeoc-should-continue-to-collect-pay-data>
- Yang, J.R. & Shiu, P.A. (2019). Brief for Jenny R. Yang and Patricia A. Shiu as Amici Curiae Supporting Appellees. *National Women's Law Ctr. v. OMB*, No. 19-5130 (D.C. Cir. October 25, 2019).

The Academics' Forum
An Interview with Dr. Lillian T. Eby:
The First Female Editor of the *Journal of Applied Psychology*

Dorothy R. Carter & Nathan T. Carter
University of Georgia

In this installment of the Academics' Forum, I am pleased to write about someone I am lucky to call my friend and colleague at the University of Georgia, Dr. Lillian T. Eby, or, as you probably already know her, the incoming editor of the *Journal of Applied Psychology*. What you may not know is that Lillian is the *first female* editor of the top journal in applied psychology in its century-long history. Interestingly, her taking the helm also brought the journal back full-circle to UGA where founder Ludwig Reinhold Giessler first established it (Thomas, 2009¹).

I chose to interview and write about Lillian primarily because of her new editorship position, but the reasons to interview Lillian for this academic forum are endless. She is, of course, a phenomenal researcher who—in addition to publishing ceaselessly in top journals—was among some of the first I-O psychologists to secure large funding through the National Institutes of Health (NIH) at a time when many were still being told that I-Os “don’t get grants.” She is also the director of the Owens Institute for Behavioral Research (OIBR)² at UGA—an institute that is focused on providing services, information, and support to UGA faculty members to enhance the quality and relevance of interdisciplinary research in the social and behavioral sciences. Under her leadership, OIBR has helped faculty generate over \$75 million dollars in grant funding since 2015 and substantially increased the institute’s value to faculty both pre- and postaward. Further, she truly puts her research on mentoring into action. She is well known as a fantastic doctoral advisor, she runs a highly successful mentoring program for junior UGA faculty in the social and behavioral sciences through OIBR, and she mentors new faculty in our department and the I-O program simply out of her own kindness and generosity. In fact, that is why I asked my colleague and husband, Nathan Carter, to join me in the interviewing and writing for this article. We are both extremely thankful for Lillian’s guidance and friendship over the years, and it was a great excuse for the three of us to hang out over craft beers and fried clams at our favorite seafood joint in Athens, Georgia!

The remainder of this article is organized around four overarching questions that summarize the many questions Nathan and I asked Lillian for this interview: (1) How did you get here? (2) How does it feel to become editor of our field’s top journal? (3) What is your vision for the journal? (4) What is your advice for junior faculty members?

1. How Did You Get Here?

Lillian describes her pathway as “nontraditional.” Although she came from a family of academics, she was convinced early on that this would *not* be the path for her. If you have met Lillian, you may be able to see her rationale; the stereotype of a stuffy academician does not fit her. She is fun and personable, warm and endearing. In terms of her professional goals, she wanted to do something *practical*, yet another break from the academic stereotype. So, having earned her BA in Psychology and Sociology at Western Michigan University, she went on to earn her MA in I-O at the University of North Carolina at Charlotte (UNCC) with the goal of going into I-O practice. Yet, it was during her time at UNCC that she

realized she loved research. In 1992, she succumbed to the family trade and began working on her PhD in I-O Psychology at the University of Tennessee Department of Management.

After graduating with her PhD in 1996, Lillian accepted her first—and only—tenure track position at UGA. By this time, she had already begun to publish in the area of mentoring, with her first sole-authored publication on the topic appearing in the *Journal of Vocational Behavior* in 1997. Although a cursory glance at Lillian's career record shows the typical indicators of success (e.g., multiple first-authored articles within a year of graduating), a closer look reveals a theme we identified in talking to Lillian about her career: wanting to do something that *matters*. Her early work examined job loss, unemployment, and well-being; ethical approaches to organizational restructuring; and other topics that focus on the worker and the impact an organization has on their psychological and overall well-being.

A real turning point in her career—one that led her to accomplish research with far-reaching implications for society—originated through the mentoring she received from a faculty member in sociology as part of the OIBR mentoring program. This faculty member impressed upon her how relevant I-O psychology could be to the substance abuse treatment workforce (e.g., drug and alcohol counselors) and, thus, to the goals of the NIH. Despite knowing nothing about the “how,” “who,” or “what” of NIH funding, Lillian began to pursue it. She told us that she locked herself away for a summer to learn everything she could about the grant-funding process as well as the substance abuse treatment workforce, particularly with regard to the mentoring relationships between counselors and their supervisors. Of course, this was no easy road. It was extremely difficult to navigate demands that were so far out of her “home arena” of I-O psychology, even after receiving funding. For example, in order for her work to have the impact she desired, she needed to publish in journals that would reach the target audience (i.e., NOT mainstream I-O or management journals). So she (successfully) figured out how to publish in top-tier drug abuse and health services journals. More generally, she says that she experienced first hand the challenges of being an interdisciplinary researcher and often felt disconnected from her home discipline. However, she says that the benefits far outweighed the disadvantages.

After 10 years of NIH funding wound down, she began to reconnect with I-O and found that she was warmly welcomed back. This led to a sort of “second career,” she says, in which her leadership abilities were more the focus. Around the same time, she began her tenure as the director of OIBR. Although this is technically an administrative role, Lillian says that she believes she gets the best of both worlds, being able to play a part in university leadership while building a large network of researchers and remaining highly immersed in social science.

A general theme we identified in our discussion with Lillian was that she attributes the majority of her successes to her motivation, persistence, and work ethic. She qualified many of her answers with the admission that her career is peppered with “risky” choices and that she did not follow a “paint by numbers” path. However, she also believes that she is living proof that taking chances on interdisciplinary research with real-world implications *can* work out. We agree.

2. How Does it Feel?

Lillian laughs that her first reaction to the news she was named editor was “terror and panic” followed by the more positive feelings of surprise and humility as she realized her colleagues had chosen her out of the list of other highly impressive candidates. When she noted that she had the concern that she would “be under the microscope” because she is a woman (and the *first* woman), we asked her to elaborate on her feelings about that, to which she said confidently: “Bring on the microscope!” To us, this is

classic Lillian. She may worry a bit, but she always comes back to a confidence and dauntlessness that is truly inspiring.

Indeed, many others have been inspired by her. Lillian noted how wonderful it has been to have so many people thank her for taking on this role and how her recent experiences have made her even more aware of how important it is for women to take positions of leadership when they can. Female researchers have said things to her like “You make me think I could do this someday,” and she notes that this is a major reason she decided to pursue the opportunity. She noted that she has fallen into the cognitive trap that many women (and men) experience, asking “Why me?” Yet, she said that even having that thought bothered her because she knows she *is* a strong woman and wants to model that for others.

3. What Is Your Vision for the Journal?

Lillian articulated a strong vision for the future of *JAP*. First, she is committed to maintaining high methodological and conceptual standards at the journal. Second, she said she is determined to enhance the peer review experience for authors and reviewers. She noted that as the premiere journal in the field, many researchers send their best work to *JAP* first, and thus, the journal has a responsibility to give authors actionable feedback to improve their science, even when they miss the mark. As an associate editor (AE) she said that she has been inspired by authors who came to her and thanked her for her feedback even though she had rejected their article. Additionally, she has some ideas for how to reward the “army” of volunteer reviewers for the journal. This is representative of her own research on mentoring. Her focus will be on encouraging developmental reviewing among reviewers, as well as on developmental feedback for AEs so that they will leave feeling equipped to be editors themselves. Finally, she said she believes the most important part is kindness—“There is no reason not to be kind,” she says.

Third, she is committed to encouraging and supporting practices that support open science. Although *JAP* has already done a lot toward these ends, our *field* overall has been relatively slow to adapt to demand for open-science practices, which she describes as a “train that has already left the station.” She hopes to encourage reviewers and AEs to not, for example, ask for post-hoc hypotheses, moderators, or mediators, and to rein in requests to redesign the study altogether. More complete methodological reporting that allows for replication and improves transparency is also on her radar. She says that plans are already underway for small changes that will help bring these goals to fruition.

Further, she has plans to try to maintain and increase the journal’s diversity in two key ways. She has developed an editorial board and review team that are diverse in all senses of the word, including race, sex, and national origin as examples. She also hopes to increase the diversity of the journal’s representation of interdisciplinary work and improve the translational impact of our science. Collectively, these efforts will enhance our science by bringing many viewpoints to bear on common problems and improve the translation of our science for public good.

4. Advice for Junior Faculty?

Our final question for Lillian was what her advice would be for junior faculty. First, she noted that she regrets that many junior faculty get the advice that there is only one pathway to success. Although she sees nothing wrong with the “traditional” path, she believes her path has been more fun—and riskier—as a result of making her own way. She also emphasized the importance of more senior people in this equation, noting that she had a small group of people who really believed in her early on, and she is committed to paying that forward. For example, she said, little things like sending an email after reading an article you really like can be a huge boon to that up-and-comer. But her biggest advice is what reso-

nated with us the most: “*Do what you love and remember that you can make this career anything you want!*”

Conclusion

We hope we have made it clear why it is so inspiring to work with someone like Lillian Eby. She is of course highly influential at our university and the field more broadly, but more importantly, she is a kind senior faculty member who is generous with her time. We have no doubt that all of these qualities will be evident as she assumes her new role at *Journal of Applied Psychology*.

Notes

¹ Thomas, R. K. (2009). Ludwig Reinhold Geissler and founding of the *Journal of Applied Psychology*. *American Journal of Psychology*, 122, 395–403.

² Notably, this is the same William A. Owens who was a former president of SIOP (1969–1970) and the namesake of the SIOP Scholarly Achievement award, meaning this important institute has seen two generations of I-O psychologists as its director. Bill was the founder of the Institute for Behavioral Research, and OIBR was renamed after him and his wife, Barbara R. Owens, after their deaths.

The Bridge: Connecting Science and Practice

“The Bridge: Connecting Science and Practice” is a *TIP* column that seeks to help facilitate additional learning and knowledge transfer to encourage sound, evidence-based practice. It can provide academics with an opportunity to discuss the potential and/or realized practical implications of their research as well as learn about cutting-edge practice issues or questions that could inform new research programs or studies. For practitioners, it provides opportunities to learn about the latest research findings that could prompt new techniques, solutions, or services that would benefit the external client community. It also provides practitioners with an opportunity to highlight key practice issues, challenges, trends, and so forth that may benefit from additional research. In this issue, Dr. Michael Keeney describes blended reality training, technologies being leveraged, best practices, challenges, and areas for industrial-organizational psychologists to contribute.



Kimberly Adams
Independent Consultant



Stephanie Zajac
UT MD Anderson Cancer Center

Blended-Reality Training: A New Approach to Simulations

Michael J. Keeney

Author and Company Profile



Michael J. Keeney is a principal scientist at Aptima, Inc. He applies methods of task and job analysis to understand work processes, identify and describe expertise needed for successful job performance, develop and assess the success of training, and measure worker performance. Dr. Keeney has developed and applied cognitive work analysis methodology in a variety of occupational settings. He has described tasks, knowledges, and skills, and the equipment and physical factors involved during underground coal mine emergencies, and then developed a description of miner decision making during these events. He has identified training needs and developed adaptive training methodology to aid intelligence analysts in locating and predicting adversary activities and to help software analysts locate security vulnerabilities in computer software. He created a model to integrate culture, attitudes, and personality to create representations of local people to train soldiers to operate effectively when performing missions in which positive personal interactions with the local population are critical. Dr. Keeney has applied the award winning Mission Essential Competencies (MEC) process to identify training needs of over 30 military and civilian organizations. He is currently creating content and display requirements for a blended reality training system that can provide training situations at reduced cost and increased availability compared to live training approaches. Dr. Keeney received his PhD in Industrial-Organizational Psychology from the University of Akron. During military service, he was certified as a U. S. Air Force Master technical training instructor, Career Development Course technical writer, and U. S. Navy Master training specialist.

Aptima’s mission is to optimize the performance of humans learning and operating in technology-intensive, mission-critical settings including defense, intelligence, aviation, law enforcement, and healthcare. They apply deep expertise in how humans think, learn, and behave to the goal of advancing readiness. By combining measurement with learning data analytics and personalized adaptive training, Aptima’s tools provide a suc-

cessive cycle to measure, analyze, and improve human performance. The result is accelerated learning and enhanced human–machine teaming in preparation for the challenges that lie ahead—for individuals, teams, and the entire workforce. For more information, please visit www.aplima.com.

What Is Blended Reality?

Blended reality (BR) is an emerging training method that uses wearable technology to overlay visual and auditory stimuli onto what the trainee sees and hears from the real world (Bort, 2014). By seamlessly integrating real and simulated stimuli, the vision is that BR systems will provide a venue to deliver optimal training within otherwise limited environments. The goal is for BR to deliver the benefits of *live, virtual, and constructive* (LVC) training methods (Department of Defense [DoD] Modeling and Simulation Office, 2018; Hays, 1989; Magnuson, 2019). BR should close the gap between live and virtual training, reduce costs, expand availability of training opportunities, reduce constraints from factors such as weather and travel, and eliminate safety-imposed limits on training activities. However, before BR training can deliver these advantages, engineers and training researchers must overcome a number of challenges. This column will offer a vision for BR training technology, review anticipated benefits and potential applications, discuss technological challenges that will require a blending of engineering and training design expertise, and offer suggestions for how industrial-organizational (I-O) psychologists can contribute to future research.

Vision for BR Technology

To appreciate potential benefits possible from BR, it is critical to first understand the three current constructs used to describe training delivery systems. *Live simulations* (the *L* in LVC) use real people operating real-world systems within physical environments that mimic real-world operations. One example of a live training event involves the actual ignition of flammable liquid in a metal pan. Trainees then use an operational fire extinguisher to extinguish the fire. Although this training provides experience with an actual fire and fire extinguisher, it presents real danger from the fire, limiting where and when this training can be provided. It also consumes the flammable liquid and requires recharging of the extinguisher after each training session. Live simulations typically are the most expensive among the training approaches' and present actual risks to life and property.

The other two training delivery constructs seek to overcome issues in live simulations that can limit availability and require altered procedures to mitigate risks. *Virtual simulations* (the *V* in LVC) combine live people operating simulation systems that replace part or all of the operational equipment and environment. Our virtual alternative would replace the actual fire and operational extinguisher with a replica fire displayed on a sensor-equipped video screen (similar to a large television). The screen is paired with a life-sized fire extinguisher simulator, which looks, feels, and operates like its live counterpart except that instead of spraying agent, it emits a coded beam. The trainee directs the nozzle of the extinguisher simulator at the screen and uses the extinguisher in a manner that would extinguish the fire; the fire display on the screen goes out. This virtual trainer can be used anywhere (because it presents no actual hazards), it requires no fuel or recharging, and, as a further benefit, it can provide objective data describing trainee performance. Data such as these are not available from the live training fire. Finally, other than the trainees, *constructive simulations* (the *C* in LVC) replace everything—other people, equipment, and environments—with simulations, typically in a computer display. A constructive fire extinguisher trainer would present the fire and extinguisher through computer screen images and sound, and trainees would fight the fire through keyboard and mouse inputs.

The wearable BR technology uses three major components: (a) spectacles, goggles, or an monocle eyepiece and earpieces that present imagery and sound; (b) sensors that track the user's location and orien-

tation; and (c) a computer and power supply that processes location and orientation data and generates inputs for vision and hearing.

One wearable technology under development is currently in operational use as an augmented reality (AR) system. An AR system displays computer-generated information, typically as symbols or icons, into transparent spectacles or a monocle worn by the user (Flavian, Ibanez-Sanchez & Orus, 2019). The eyepiece screen is clear so the user can see through to the real world beyond. To illustrate how an AR system could be used, imagine it as a guide for visitors to a large museum. The system would track the user's location and head orientation, and when the user's head is pointed in the direction of a particular display, the system generates symbols and icons in the spectacles that alert the user to the display, highlights its location, and could provide an optional text or an audio description.

One approach to BR is to build upon and progress beyond AR technology by replacing the icons and symbols with imagery and sound to replicate the appearance of entities and events (Flavian, Ibanez-Sanchez & Orus, 2019). Specifically, BR entities would be moving images and sounds that replicate the visual and audio appearance and behaviors of their real-world counterparts. Examples of such entities and activities that BR could replicate include aircraft; ground vehicles; human role players; appearance of wounds, injuries, and other medical and mental conditions, as well as the behaviors of patients with these conditions; and damage resulting from mishaps or combat. Please see article for a discussion of nuanced perspectives on similarities and differences between BR and AR.

Consider an example in which the trainee is a first responder and the training area is a small field within a residential area. The training objective is to develop skills to perform helicopter evacuation of a severely injured patient, and the training task is to guide the helicopter to land and load the patient. Live training would require an expensive and noisy aircraft, its crew, and clearance for the helicopter to operate in the neighborhood, as well as either a human role player or a mannequin to portray the injured person. Weather or equipment problems could limit or suddenly cancel flight operations. To deal with these constraints, current alternatives would typically be low fidelity, such as to place a sign on a truck saying that it is a helicopter. Trainers might apply moulages (simulated wounds or illnesses created from casts or molds) to replicate the visual appearance of the injuries, and a human role player would have to understand how to behave in accordance with the injuries. Suppose instead that the trainee is wearing a BR training system. The patient appears in the first responder's spectacles and displays appropriate injuries and behaviors. As the trainee looks skyward, the goggles and headphones present appropriate imagery and sound of an arriving and landing helicopter. When the trainee contacts and communicates with the BR helicopter to provide landing instructions, the system responds appropriately, and if the trainee provides the correct information, the helicopter will successfully land and its crew will prepare to load the patient. An important issue for training developers will be to identify which training requirements can efficiently be met using BR approaches and which will require other training methods. In this scenario, the BR is likely to provide an efficient method to train the procedures of interacting to land the helicopter and to visually assess injuries. However, skills that require tactile feedback and physical actions, such as performing first-aid procedures, will continue to require alternative training methods to supplement the BR technology.

Challenges for Delivering Anticipated Benefits and Research Opportunities for I-O Psychologists

As this technology begins to emerge in development, it is becoming possible to estimate where and how this technology will likely add training value. To date, the focus of research has been on overcoming engineering challenges to create wearable, portable, cost-effective hardware with sufficient processing power and battery life. The training technology needs to be sufficiently rugged to withstand field handling and exposure to dust, dampness, and weather; to be light enough not to generate undue user fatigue; and to not interfere with other equipment the user wears or carries while training. Engineering is

a process of trade-offs, and often solving one problem can create another (Vaughn, 1996). For example, adding to data-processing demands requires more electrical power and hardware capacity, which could mean that a unit having sufficient power supply to meet processing requirements could become too heavy for users to wear. It currently appears that a first-generation technology that overcomes many of these challenges will soon become available. At least one software and hardware system has successfully demonstrated entity and operator tracking in a variety of environments.

The system will need to sense not only where the trainee is located in physical space but also the direction where the trainee is looking. The system will need to use this information in real time to manage and adjust entity presentations to account for several geometric factors, such as trainee movement through the real-world environment and the simulated location of the entity within this space, as well as the visibility of the entity within the trainee's field of view. Although producing the correct imagery is largely an engineering challenge, the importance for training designers is to provide estimates of fidelity, meaning how accurately must entities mimic their real-world counterparts to provide a simulation adequate to meet training needs.

The tracking systems will need to integrate the user's location and orientation in real-world space to adjust the appearance of stimuli in real time and consider how users will interact with the constructed entities. As an example of this issue, the targets in a carnival arcade shooting gallery react when fired on, but until this occurs, they wait patiently (or so one might hope). In contrast, real-world opponents would seek to detect and locate the trainee user, and escape, hide, or defend themselves. The training system will have to manage not only locations but also whether the virtual entities and real-world trainee users should be able to see and engage each other through obstacles.

Sound presents another significant engineering challenge. Many of the anticipated visual entities, such as a helicopter operating nearby, produce substantial sound, which would be presented to the trainee through headsets. Whether, under what training requirements, and to what degree of accuracy sound is needed are currently unanswered empirical questions for training researchers.

Equipment and software developers will provide sample training events with BR systems for testing and evaluation, but a long-term source to create and maintain a library of training presentations is also needed. The most feasible long-term solution to creating the presentations that trainees will see and hear through BR training systems appears to use experienced incumbents of the work involved who fill the role of instructors. The BR system should provide a method for these persons to select and program the behavior of the entities that enables trainees to meet training requirements. These instructors are optimal to create their own presentations because they are likely to understand the work involved as well as relevant training methods, capabilities, and shortfalls. Ideally, BR systems will include a training-authoring capability, consisting of both the technology to build training and a procedural, concept-of-operations methodology to perform this work. This authoring capability will enable instructors to create the entities that the BR training system will present to trainees; program the behavior of these entities to execute training scenarios; copy and alter existing scenarios and scenario entities to adapt them to different settings; and create a single scenario applicable to multiple settings. There is a need for research to inform optimal approaches to enable these instructor-users to build their own training in BR systems.

Feedback is one of the biggest differences between expertise gained through real-world experiences and expertise gained through training. Well-designed training provides feedback to correct mistakes and reinforce correct behaviors. The BR system will require a method to display what happened during the training and integrate these displays into a means to provide feedback during post-training debriefings. The optimal ways to do this is another unanswered opportunity for research.

Until prototypes of BR systems become available, assessment of the benefits they can deliver for given levels of fidelity may have to rest on current literature about simulator-delivered training. However, informative expertise appears to exist outside of sources typically used in mainstream I-O psychology. For example, the visual-arts community knows about perspective and creating illusions in visual media (Seckel, 2004). For BR applications, movement and perspective may be as important as visual features.

It is not yet clear how to integrate BR systems optimally with other part-task trainers. Consider our earlier example of the first responder with the helicopter evacuation of a patient. Because the patient and the helicopter exist only as images and sound, there is no physical body to move and no physical helicopter into which to load the patient. This problem could be addressed through two physical part-task trainers, one replicating the patient shape and form, and the other on the door and fuselage of a helicopter. The BR system could overlay the details of appearance onto the physical patient shape, and then the BR system could overlay the physical helicopter trainer with sounds and movement replicating an actual helicopter. The methodology, and indeed all the issues to be solved for this simple application, have not yet been identified so that they can be solved. I-O psychologists can contribute by identifying which types of activities and work tasks are appropriate for BR applications. One method to do this would be to examine training-requirement documentation and consult with subject matter experts to identify currently unmet training needs.

Determining what constitutes the needed fidelity is another important challenge that I-O psychologists can help address. Presenting only the level of fidelity that is needed for training effectiveness is critical to controlling development costs for training systems because excessive fidelity adds costs without commensurate training value (Hays, 1989). Methods are available to determine what level of detail in replicating a live entity is needed, and some aspects of psychological and physical fidelity are clearly more important than others (Stacy, Walwanis, Wiggins, & Bolton, 2013; Whetzel, McDaniel, & Pollack, 2012).

Once BR systems become available for research, it will be increasingly possible to evaluate costs of presenting the training against benefits from the training. Phillips and Stone (2000) offer one method to perform this assessment. Hung (2010) and Jasson and Govender (2017) provide innovative models for training evaluation that could enable researchers to estimate the value to be obtained from investments in BR technology.

In summary, BR training systems present both an exciting prospect to enhance training but also a number of technological challenges. I-O psychologists have opportunities to partner in developing these systems and in helping users obtain the benefits they promise.

References

- Bort, J. 2014. "Blended reality" is the next tech buzzword and HP's plans for it are really spectacular. *Business Insider*. Retrieved from <https://www.businessinsider.com/blended-reality-is-the-next-big-thing-2014-10>
- Department of Defense Modeling and Simulation Coordination Office. (2018, September). *Modeling and simulation glossary*. Retrieved from <https://www.msco.mil/MSReferences/Glossary/MSGlossary.aspx>
- Flavian, C., Ibanez-Sanchez, S., & Orus, C. (2019). The impact of virtual, augmented, and mixed reality technologies on the customer experience. *Journal of Business Research*, 100, 547–560.
- Hays, R. T. (1989). Simulation fidelity in training system design: Bridging the gap between reality and training. *Recent Research in Psychology* series [Kindle Edition]. New York, NY: Springer.
- Hung, T. K. (2010). An empirical study of the training evaluation decision-making model to measure training outcome. *Social Behavior & Personality: An International Journal*, 38, 87–101.
- Jasson, C. C., & Govender, C. M. (2017). Measuring return on investment and risk in training—A business training evaluation model for managers and leaders. *Acta Commercii*, 17, 1–9.

- Magnuson, S. (2019, Jan 2). Services declare breakthrough in LVC training. *National Defense: The Business and Technology Magazine of NIDA*, 103(782): 12. Retrieved from <http://www.nationaldefensemagazine.org/articles/2019/1/2/services-declare-breakthrough-in-lvc-training>
- Phillips, J. J., & Stone, R. D. (2000). *How to measure training results: A practical guide to tracking the six key indicators* [Kindle Edition]. New York, NY: McGraw-Hill.
- Seckel, A. (2004). *Masters of deception: Escher, Dali, and the artists of optical illusion*. New York, NY: Sterling.
- Stacy, W., Walwanis, M., Wiggins, S., & Bolton, A. (2013, December). Proceedings of the 2013 Interservice/Industry Training, Education, and Simulation Conference: *Layered fidelity: An approach to characterizing training environments*. Orlando, FL.
- Vaughn, D. (1996). *The Challenger launch decision: Risky technology, culture, and deviance at NASA*. Chicago, IL: University of Chicago Press.
- Whetzel, D. L., McDaniel, M. A., & Pollack, J. M. (2012). Work simulations. In M. A. Wilson, W. Bennett, S. G. Gibson, & G. M. Alliger (Eds.), *The handbook of work analysis: Methods, systems, applications and science of work measurement in organizations* [Kindle Edition]. New York, NY: Taylor & Francis.

Innovative Connections Between I-O Psychology and International Relations: The Work of Raymond Saner and Lichia Yiu

Aimee Lace and Stuart C. Carr

Geneva, Switzerland is a city teeming with diplomats and government officials, drawn by the presence of the United Nations and a desire to contribute to peace. In the midst of this diplomatic activity, two I-O psychologists work tirelessly to bring insights from I-O psychology to policy and international initiatives. These psychologists are Raymond Saner and Lichia Yiu.

The work of Raymond and Lichia is highly interdisciplinary, with a home base in social and organizational development/change. They are cofounders of a Geneva-based nongovernmental research and development organizations called the Centre for Socio-Eco-Nomic Development (CSEND, www.csend.org), which focuses on development work in developing and transition countries. They also founded Diplomacy Dialogue, which focuses on the interface among business, politics, society, and the environment. Their projects include institution development and change projects for international organizations and governments, such as the creation of a guidebook for the International Labor Organization on how to foster inclusion in employment and promote decent work (Saner & Yiu, 2005). More recently, they have been applying their expertise to the transition to a more sustainable global economy and societies in the context of the 2030 Agenda for Sustainable Development, which requires collaboration and solidarity of nations, businesses, and civil societies.

Their work stretches beyond the traditional scope of I-O psychology in that they innovatively apply insights from that field to political economy, international conflict resolution, and diplomacy work directly. Most international initiatives require effective multistakeholder cooperation and alignment. Raymond and Lichia's backgrounds in I-O psychology equip them well to provide guidance to the United Nations and other organizations on these complex issues. As Raymond puts it, poverty-reduction strategies, for example:

[I]nclude national governments, foreign aid agencies and international organizations. Each of them has its own policy preferences. That of course means creating sufficient common ground between approaches like the World Bank's and the International Monetary Fund's, including sometimes contentious 'financial conditions' for international loans and aid relief. It also includes other international organizations, such as the International Labour Organization (ILO) and the United Nations' Development Program (UNDP). These in turn tend to focus more on job-creation, employment policies and skill development, which are terrains somewhat more familiar perhaps to I-O psychologists.

Raymond and Lichia point out that while the field of I-O psychology is not readily seen as a complement to international relations in the same way that economics and political science are, there is a twin-pronged strategy by which I-O psychology could become more prominent in that sphere. The first prong is to expand I-O curriculum to include examples and case studies from outside of the private sector, from a broader range of regional backgrounds, and from macro-meso-micro perspectives. The second

prong is to expand the research and theory base for understanding work in multinational organizations in lower income and transitioning countries.

What advice do they have for I-O psychologists interested in contributing to international relations? They suggest that I-O psychologists should indeed consider entering this fascinating field, which is “multistakeholder, multi-institutional, and highly international.” They recommend considering gaining exposure by taking continuing education courses in related fields or, if possible, taking a job or internship in international settings. They also emphasize the contribution that I-O scholarship can make to international development through research and theory development in emerging and lower income countries. Equally important is the contribution by I-O scholars to creating sustainable alternative economic futures such as cooperatives, social and solidarity organizations, and sustainable and non-exploitation-based, humane-platform work conditions. Partnering with I-O psychologists from developing countries could be of mutual benefit as well through dialogue and appreciation of different operating contexts.

Ultimately, as Raymond and Lichia demonstrate, the understanding of behavior and change that I-O psychologists bring to the table can make a unique contribution to international relations and development partnerships. Raymond summarizes it well: “Applied for instance to nation building and rebuilding in Iraq, Afghanistan, Haiti, Yemen, and Ethiopia, important development work should not be left to military commanders trained to conduct war but who are arguably inept in reconstructing societies and working with the psychology of human beings.” I-O psychologists are indeed well placed to contribute in innovative ways to building sustainable peace and reducing poverty globally. SIOP’s UN Committee seeks to deepen connections between the I-O psychology community and the United Nations, and the work of Raymond Saner and Lichia Yiu demonstrate the immense contributions that are possible.

*The SIOP United Nations Committee is **Julie Olson-Buchanan** (Chair), Stuart Carr, **Lori Foster**, Aimee Lace, **Dan Maday**, **Drew Mallory**, **Ines Meyer**, **Morrie Mullins**, **Mathian Osicki**, **Mark Poteet**, **Walter Reichman**, **Nabila Sheikh**, and **Maria Whipple**.*

Reference

Saner, R., & Yiu, L (2005). Swiss executives as business diplomats in the new Europe. *Organizational Dynamics*, 34, 298-312.

SIOP Award Winners:
Meet David Baker, Winner of the Distinguished Professional Contributions Award

Liberty J. Munson



As part of our ongoing series to provide visibility into what it takes to earn a SIOP award or grant, we highlight a diverse class of award winners in each edition of *TIP*. We hope that this insight encourages you to consider applying for a SIOP award or grant because you are probably doing something amazing that can and should be recognized by your peers in I-O psychology!



This quarter, we are highlighting the winner of the Distinguished Professional Contributions Award, **David P. Baker**, Executive Vice President, IMPAQ International, LLC.

What award did you win? Why did you apply?

I won the 2019 Distinguished Professional Contributions Award. I applied because I felt the work I have participated in/led was consistent with the award criteria. After working for close to 30 years, it was a goal of mine to win the award.

Share a little a bit about who you are and what you do.

I am the executive vice president of IMPAQ Health at IMPAQ International, LLC. We are located in Columbia, MD. I lead a 150-person health policy and research enterprise that tackles critical initiatives associated with transitioning care from fee for service to value-based reimbursement. Our work is primarily funded by the federal government. I am only one of four I-O psychologists that work in IMPAQ Health. Most staff have a public policy, health policy, or health economics background.

Describe the research/work that you did that resulted in this award. What led to your idea?

When I left graduate school, I worked for **Eduardo Salas** at the Naval Training System Center (now the Naval Air Warfare Center Training Systems Division) in a research lab focused on teamwork and team training in naval aircrews. I also worked with many commercial airlines on improving team performance upon leaving the Navy. In 1999, the Institute of Medicine released a report entitled, "To Err is Human." It reported that 98,000 patients die each year in hospitals because of poor care and poor team performance. It specifically highlighted the progress made in aviation to reduce harm through better teamwork and training, and proposed that healthcare adopt such programs. In 2002, a procurement was led by the Agency for Healthcare Research and Quality (AHRQ) to evaluate medical team training programs in the Department of Defense (DoD). I led the proposal team that won that project, which led to a 5-year research and development program focused on teamwork and team training in healthcare. Based on this research, I led the contract team that did much of the design and development work for AHRQ's TeamSTEPPS® training program. Finally, I led the team that designed and implemented a national rollout of the TeamSTEPPS training program. Training centers were established throughout the US to train healthcare professionals as master trainers who then trained others. Since inception, hundreds of thou-

sands of healthcare professionals around the world have been trained to work better as a team using TeamSTEPPS. Ed Salas would argue it is the most consumed team training program in the world.

What do you think was key to you winning this award?

As a past SIOP Awards Chair, it was clear to me that the biggest challenge for practitioners who apply for SIOP awards is to quantify reach and uptake of an I-O intervention. This is true regarding both the Early Career and Distinguished Professional Contributions Awards. In the case of TeamSTEPPS, however, it is easy to establish its reach, which is an important criterion of the Distinguished Professional Contributions Award. The AHRQ national implementation program for TeamSTEPPS, which I designed, trained over 10,000 master trainers who then trained others. Some healthcare systems reported training staffs of 50,000 or more. The use of TeamSTEPPS has amazed all involved with the program.

What did you learn that surprised you? Did you have an “aha” moment? What was it?

I wouldn't call it an “aha” moment, but I would call it a humbling moment. To think that you had a hand in something that is used all of over the globe is humbling and quite a surprise. TeamSTEPPS has been translated into multiple languages. I have taught TeamSTEPPS to hospitals in Taipei and Barcelona, as well as throughout the US. Others have conducted the training in South America and Europe. TeamSTEPPS has been used in Australia since 2007. I receive emails from researchers all over the world asking if they can use my research in a project they are doing. I even found a group of healthcare workers who made a music video to TeamSTEPPS. How many I-O psychologists can say that?!? See:

<https://www.youtube.com/watch?v=X7X-uchPHig>

Finally, TeamSTEPPS has stimulated research and consulting firms. Since 2002, research on the topic of teamwork in healthcare has grown dramatically. Several consulting firms base their work on providing TeamSTEPPS training.

One of the key success factors of all of this was, because it was federally funded, we were able to give it away for free. In addition, I would argue that basing TeamSTEPPS on the science of teams and training was critical to its success.

Another “aha” moment along the way has been the importance of taking a step back to celebrate the work and its success. I am thankful to have been along for this ride!

What do you see as the lasting/unique contribution of this work to our discipline? How can it be used to drive changes in organizations, the employee experience, and so on?

I think TeamSTEPPS and the importance of teamwork in delivery of care has already had a significant, lasting contribution. For example, medical students and other health professional students now learn together in joint classes to enhance teamwork. New assessment strategies by AAMC target softer skills in addition to hard-science skills in the admission process for medical school. Quality, patient safety, and care coordination are now prevalent themes in the new value-based reimbursement strategies used by insurers and the federal government. Healthcare more and more pays based on quality, and TeamSTEPPS can directly contribute to quality improvement.

Finally, TeamSTEPPS is not just team training but an organizational-culture change initiative. If you know Ed Salas' work, training transfer is the hardest outcome to achieve. Organizations must value and rein-

force teamwork for programs like TeamSTEPPS to work. A major component of the curriculum focuses on organizational change/culture change.

How did others become aware of your award-winning work/research?

Within SIOP, I-O's contributions to healthcare have been visible over the last 10 years. Certainly, Ed's work on teams in high-risk industries has received tremendous uptake, and healthcare is a high-risk industry. TeamSTEPPS was recognized with the M. Scott Myers Award in 2007, and even though TeamSTEPPS is an applied training program, we published and presented many papers on TeamSTEPPS and training healthcare teams.

Who would you say was the biggest advocate of your research/work that resulted in the award? How did that person become aware of your work?

There are three advocates. Programmatically, Jim Battles (AHRQ) and Heidi King (DoD) were key. They provided the funding and had a vision to create a program that was freely available. Ed Salas, of course, has been a long-term mentor and friend.

To what extent would you say this work/research was interdisciplinary?

The development of TeamSTEPPS was highly interdisciplinary. It involved the combination of training, teamwork, and clinical experts. We worked specifically with clinicians from Beth Israel Medical Center in Boston to develop the initial TeamSTEPPS curriculum. One of the big challenges was adopting our terminology to a clinical environment. In teams, the concept of back-up behavior and cross monitoring are commonplace. In a clinical environment, they had a different meaning, and we had to select new terms—mutual support and situation monitoring—that were appropriate. We also relied greatly on clinicians to provide examples and context for the program. Finally, clinician buy-in and promotion was critical to TeamSTEPPS' ultimate success.

Are you still doing work/research in the same area where you won the award? If so, what are you currently working on in this space? If not, what are you working on now and how did you move into this different work/research area?

As the executive vice president over IMPAQ Health, my role has dramatically changed over the last 15 years. That said, many aspects of the work with TeamSTEPPS continue to contribute to my work in and oversight of other patient safety and quality improvement programs. Having a true understanding of the evidence and research around teamwork skills, measurement principles, and culture change components are all important to the ongoing work to improve healthcare delivery.

What's a fun fact about yourself (something that people may not know)?

Some of my favorite activities outside work are ice hockey and golf. Until recently, I played men's league hockey and now I manage the schedule for my son's hockey club. I plan the game schedule for 20-plus teams, which is over 400 games. It often reminds me of my service to SIOP when I was Awards Chair: lots of details and lots of things to coordinate.

What piece of advice would you give to someone new to I-O psychology? (If you knew then what you know now...)

Regarding advice, I have a couple of nuggets. First, I-O psychology has value in many places. I would have never thought I would have led a health policy group, but healthcare has many I-O challenges: quality measurement, paying for performance, redesigning jobs, culture change, and so on. Second, never take any project or research opportunity for granted, as you never know where it might lead to next. TeamSTEPPS started as a small qualitative evaluation of existing team-training programs in the DoD and a literature review. Fifteen years later, it has had a significant impact across the globe on how healthcare is delivered.

About the author:

Liberty Munson is currently the principal psychometrician of the Microsoft Technical Certification and Employability programs in the Worldwide Learning organization. She is responsible for ensuring the validity and reliability of Microsoft's certification and professional programs. Her passion is for finding innovative solutions to business challenges that balance the science of assessment design and development with the realities of budget, time, and schedule constraints. Most recently, she has been presenting on the future of testing and how technology can change the way we assess skills.

Liberty loves to bake, hike, backpack, and camp with her husband, Scott, and miniature schnauzer, Apex. If she's not at work, you'll find her enjoying the great outdoors, or she's in her kitchen tweaking some recipe just to see what happens.

Her advice to someone new to I-O psychology? Statistics, statistics, statistics—knowing data analytic techniques will open A LOT of doors in this field and beyond!

SIOF Award Winners: Meet the Team Who Won the Schmidt-Hunter Meta-Analysis Award!

Liberty J. Munson



As part of our ongoing series to provide visibility into what it takes to earn a SIOF award or grant, we highlight a diverse class of award winners in each edition of *TIP*. We hope that this insight encourages you to consider applying for a SIOF award or grant because you are probably doing something amazing that can and should be recognized by your peers in I-O psychology!

This quarter, we are highlighting the team that won the **Schmidt-Hunter Meta-Analysis Award**, as told by **Philip Roth**.



What award did you win?

The Schmidt-Hunter Meta-Analysis Award. My coauthors were **Chad van Iddekinge**, **Phil DeOrtentiis**, **Kaylee Hackney**, **Liwen Zhang**, and **Maury Buster** (not pictured).



Read the article!

Roth, P. L., Van Iddekinge, C. H., DeOrtentiis, P., Hackney, K., Zhang, L., & Buster, M. (2017). Hispanic and Asian performance on selection procedures: A narrative and meta-analytic review of 12 common predictors. *Journal of Applied Psychology*, 102, 1178–1202.

Share a little bit about who you are and what you do.

I am a selection researcher at Clemson University in the Management Department. The entire author team is interested in selection. One of my new research interests is the role of political affiliation in organizations.

Describe the research/work that you did that resulted in this award. What led to your idea?

This is a textbook example of programmatic research work. My colleagues and I (**Phil Bobko**, Chad Van Iddekinge, and others) have investigated the issue of subgroup differences on various predictors of job performance for years. We noticed comparatively little research on Hispanics and Asians (despite their large and growing numbers). We set out to help the field see the need for more work in this area.

What do you think was key to you winning this award?

A great research team (people make the research!). Chad and his graduate students are world-class literature searchers/finders. They worked tirelessly to find data for the meta-analysis.

Great scientist–practitioner teamwork. Maury Buster, a senior manager at the Alabama Personnel Department, found (and convinced the organization to share) a great deal of data that only a committed insider could find.

A great editor. **Chris Berry** was both tough as nails and very developmental. We can't thank editors in APA journals, but Chris was a great editor. He deserves more credit than anyone would imagine.

What do you see as the lasting/unique contribution of this work to our discipline? How can it be used to drive changes in organizations, the employee experience, and so on?

I hope the field can see the need for more research on minority populations, such as Asians and Hispanics. ***Who would you say was the biggest advocate of your research/work that resulted in the award? How did that person become aware of your work?***

This was more a case of dogged determination. The paper **took 8 years** to get to publication given extensive revisions and data searches. Sometimes the publication process takes a lot of patience.

Are you still doing work/research in the same area where you won the award? If so, what are you currently working on in this space? If not, what are you working on now and how did you move into this different work/research area?

We continue to do work on meta-analysis. A recent publication from what I call the “dream team” (**Huy Le, In-Sue Oh**, Chad Van Iddekinge, Phil Bobko) addressed the issue of using beta coefficients from multiple regression instead of correlation coefficients in meta-analysis. This practice appears epidemic across many fields in business and the social sciences (about eight meta-analyses a month currently suffer from this practice). We show it is a pretty bad idea (the discussant called the data “horrrifying” when we presented it at a convention...she was right). *JAP* was kind enough to publish that paper in 2018.



What's a fun fact about yourself (something that people may not know)?

I have a lapdog named Cupcake. She is a Rottweiler.

What piece of advice would you give to someone new to I-O psychology? (If you knew then what you know now...)

Decide as early as you can whether your primary interest is geared toward research/teaching or being a practitioner. Given that knowledge, you can then plan your educational efforts most wisely.

If interested in academe, don't rule out business schools. B-schools offer a great sense of kinship where all sorts of people are focused on various aspects of improving organizations.

About the author:

Liberty Munson is currently the principal psychometrician of the Microsoft Technical Certification and Employability programs in the Worldwide Learning organization. She is responsible for ensuring the validity and reliability of Microsoft's certification and professional programs. Her passion is for finding innovative solutions to business challenges that balance the science of assessment design and development with the realities of budget, time, and schedule constraints. Most recently, she has been presenting on the future of testing and how technology can change the way we assess skills.

Liberty loves to bake, hike, backpack, and camp with her husband, Scott, and miniature schnauzer, Apex. If she's not at work, you'll find her enjoying the great outdoors, or she's in her kitchen tweaking some recipe just to see what happens.

Her advice to someone new to I-O psychology? Statistics, statistics, statistics—knowing data analytic techniques will open A LOT of doors in this field and beyond!

Opening Up: A Primer on Open Science for Industrial-Organizational Psychologists

Christopher M. Castille
Nicholls State University

Introduction

My purpose with this “Opening Up” article is to orient *TIP* readers – both practicing I-O psychologists and academics—to open science. Think of this particular article as your first class on open science. I will share an interesting story to give you some historical context on the open science movement, highlight facts that should make it abundantly clear why you are taking this course, and clarify key terms that you need to know. Subsequent articles will touch on the many ways we might make our collective work more replicable, reproducible, and credible by adopting open science practices. By the end of this course, my goal is that you leave more aware of the need for open science, but also possessing effective tactics for opening up our science. Crucially, I hope to leave you with more questions than answers.

A Brief History of the Replication Crisis

In 2011, a study was published in a top-tier journal—the *Journal of Personality and Social Psychology* (JPSP) —that fundamentally challenged the methodological foundations of psychological science writ large. This study, conducted by eminent Cornell University social psychologist Daryl Bem, presented nine studies involving over 1,000 participants on *precognition* (i.e., conscious awareness of future events) and *premonition* (i.e., affective apprehension regarding future events), eight of which provided statistically significant evidence that individuals held the ability to feel the future (Bem, 2011). The studies involved taking classical psychological phenomena—such as how erotic images cause arousal and training can affect recall—and time-reversing the effects (e.g., if someone received training in the future, that would facilitate performance in the present). Bem estimated that such *psi* effects were rather robust for psychological phenomena: a Cohen’s *d* of .22. Just imagine pitching *psi* to an executive via a utility analysis to garner support for a future training investment: “If we train employees in the future, they will perform better in the present because of *psi*.”

Bem’s work caught the attention of the media and the broader scientific community. He appeared on MSNBC claiming to provide strong evidence of psychic phenomena (MSNBC, 2011) as well as Comedy Central’s *Colbert Report* (see “Time-Traveling Porn”, Colbert, 2011). Quickly thereafter, his work was roundly criticized by the academic community. *Psi* had long been a debunked idea (see Alcock, 2011). It also raised serious questions about the quality of statistical thinking going on in psychology and whether we should abandon null hypothesis significance testing (see Wagenmakers, Wetzels, Borsboom, & van der Maas, 2011). Scholars called into question the quality of the peer review process in general and the values of the academic community (i.e., quantity over quality, publish or perish; see Gad-el-Hak, 2011) and raised the possibility that science itself was broken (Engber, 2017).

Though there were many attempted replications that failed to support Bem’s findings (see Galak, LeBoeuf, Nelson, & Simmons, 2012; Ritchie, Wiseman, & French, 2012), the debate over the substantive nature of Bem’s contributions is still unresolved. In fact, there is a large-scale collaborative effort to replicate Bem’s work going on in the present (Kekecs et al., 2019). Notably, one replication attempt (i.e., Ritchie et al.) was rejected by JPSP because the journal does not publish replications (see Aldhous, 2011). This reflects a deeper trend among publications in psychology. A review of psychological studies

since the beginning of the 20th century using the term “replication” suggests that roughly 1 in 1,000 studies are replicated. Interestingly, replications are more likely to be “successful” when the seminal author co-wrote the replication (Makel, Plucker, & Hegarty, 2012). We can all agree that such lack of replication can impede scientific progress (Meehl, 1978).

Bem’s work prompted some soul searching among psychologists and a shift toward greater openness. If research on such an implausible hypothesis met the bar for methodological rigor necessary for admittance to a top-tier journal, what else might also meet (or have met) the bar and yet be similarly implausible (Chambers, 2017)? What followed were researchers trying and often failing to replicate both novel and classical findings in psychology. For instance, a large scale effort to replicate 100 studies in both social and cognitive psychology suggested that less than half of the published literature is replicable (Open Science Collaboration, 2015). Other replication attempts into topics that are quite relevant to I-O psychology also encountered replicability issues. I will highlight just two for now.

- **Ego depletion**—the notion that self-control is a finite resource and can be exhausted—informs research on the regulation and control of behavior in organizational life (e.g., Rosen, Koopman, Gabriel, & Johnson, 2016). And though over 600 studies have corroborated the ego depletion hypothesis, mainstream social psychology is now questioning whether the effect is real (Inzlicht & Friese, 2019). A large-scale pre-registered replication attempt involving over 2,000 participants failed to support the foundational experimental paradigm (Hagger et al., 2016). Similar research areas involving delay of gratification (i.e., the infamous marshmallow experiments; see Shoda, Mischel, & Peake, 1990) have also been considered to lack replicability (see Hagger et al., 2016).
- **Stereotype threat**—the notion that cues in an environment can confirm a negative stereotype about one’s social group, harming performance (Steele & Aronson, 1995)—informs research on helping women and minorities succeed (Kinias & Sim, 2016; Nguyen & Ryan, 2008). However, a large-scale replication involving over 2,000 participants did not find any evidence supporting the stereotype threat effect (see Flore, Mulder, & Wicherts, 2018). Indeed, a recent meta-analysis of this literature suggests that, if there is a stereotype effect in practice, the effect is small to trivial (Shewach, Sackett, & Quint, 2019). However publication bias in the academic literature, which has long been known as a flaw with the scientific record (for a review, see Kepes & McDaniel, 2013), suggests that the effect size has been inflated.

To be fair toward scholars working in these areas, I should point out that the above sources of evidence are not without their own criticism. For instance, the Open Science Collaboration was criticized as not representatively sampling psychological studies (see Gilbert, King, Pettigrew, & Wilson, 2016). And though we do not know how credible any body of scientific evidence is (Blastland, 2019), others are interested in answering this question. For instance, the Department of Defense is building an artificial intelligence that can help identify which studies are replicable or reproducible (Resnick, 2019). Darpa has promised \$7.6 million to the Center for Open Science, which will create a database of 30,000 claims from the social science and, for 3,000 of those claims, attempt to replicate them. Importantly, they will ask experts to bet on whether a claim would replicate (Center for Open Science, 2019). Such prediction markets can, indeed, predict which effects would replicate. A study of 21 experimental studies published in *Nature* and *Science* between 2010 and 2015—whereby ~62% of effects were replicated—found a strong correlation linking scientists beliefs regarding replicability and actual replicability (Spearman correlation coefficient: 0.842; Camerer et al., 2018). Additionally, such expert judgment could be built into an artificial intelligence that could then scour the literature and score work for credibility.

Now that you have some historical context on the open science movement as well as some understanding of present events, let's turn to key terms and ideas.

Key Terms and Ideas

Open science. This term refers to an umbrella of practices intended to promote openness, integrity, reproducibility, and replicability in research (Banks et al., 2018; Nosek et al., 2015). These practices are broad and include practices such as make peer reviews open and accessible via PubPeer (pubpeer.com), preregistering a study (via osf.io/prereg/), to simply sharing reference libraries (e.g., via Zotero, see [zotero.org](https://www.zotero.org/)), but includes many more see (Kramer & Bosman, 2018). The Center for Open Science has emerged as a part of a broader movement to make scientific disciplines more transparent, open, and reproducible—so I strongly recommend that you visit this resource if you have not already done so.

Reproducibility. The American Statistical Association (ASA) distinguished between reproducibility and replicability (see Broman et al., 2017). A study is **reproducible** if you can take the original data and code to reproduce the numerical findings from a study. Although this may sound trivial, in practice this standard may not be met. For instance, in a sample of 88 strategic management studies published in the top-tier *Strategic Management Journal*, about 70% did not disclose enough detail to permit independent tests of reproducibility and of those that did, almost one-third of supported hypotheses were not corroborated (Bergh, Sharp, Aguinis, & Li, 2017). Closer to home, research into the reproducibility of psychology has revealed that statistical reporting errors published top-tier psychology journals are quite prevalent. An examination of publications from 1985–2013 suggests that roughly half of all published studies contain at least one statistical reporting error—and this includes about one-third of articles from the *Journal of Applied Psychology* (Nuijten, Hartgerink, van Assen, Epskamp, & Wicherts, 2016).

Replicability. Conversely, the ASA defined **replicability** as the extent to which an entire study could be repeated independently of the original investigator without use of the original data and reaching the same conclusions. Again, while this may sound trivial, it too is in a standard that may not be met in practice. Early reports on the replicability of 50 highly influential studies in the domain of cancer biology dropped to under 20 studies due to insufficient detail in the method sections (Kwon, 2018).

Preregistration. This is the act of specifying hypotheses and methods for testing them in advance of gathering data. A key aim of preregistration is to create a clear separation between hypothesis generation (which occurs under exploratory conditions, a.k.a. *postdiction*) and hypothesis testing (which occurs under confirmatory conditions, a.k.a. *prediction*; see cos.io/prereg/ for more details).

Simply put, preregistration can allow results to be transparently reported. In practice, this does not seem to occur—due to a strong publish-or-perish culture in academia—and can lead to literature biased by positive results. For instance, in a review of papers from hard sciences (e.g., space science) to soft sciences (e.g., business, economics, psychology), Fanelli (2010) found that though journals from all sciences favor positive results, psychology prefers to publish positive/confirmatory results: 91–97% of articles refute the null or confirm some alternative hypothesis. Fanelli also showed how positive results are more likely to be reported in softer sciences described by weaker paradigms and higher rejection rates, such as psychology, business, and economics. However, preregistration can cut down on such bias reporting. One early study suggests that preregistered studies only report positive results 43% of the time (Schijen, Scheel, Anne, & Lakens, 2019).

To be fair, preregistration is not a panacea. Indeed, a study of preregistrations that eventually were published in the journal *Psychological Science* revealed that researchers often deviated from preregistered

protocols and do not report the reason for deviating from protocols (Adam, 2019). Now, deviations can occur for a number of reasons that are not so questionable (e.g., forgetting, situations changing, etc.). Further, it has been argued recently that preregistration will not save us if we cannot adequately map the theories we are testing onto the statistical models that we are utilizing (Szollosi et al., 2019).

Still, preregistration is a valuable tool in the scientists' toolkit because it involves an opportunity to plan and *then* reveal what was planned and not planned. In other words, it is less a policing effort and more a mechanism of encouraging transparency. It helps to shed light on assumptions and decisions used by researchers in their work, which may explain why certain effects are observed (while others are not observed). For instance, consider preregistration within the context of meta-analysis, where so many decisions can influence an estimated effect size. A meta-analysis of double-blind randomized controlled trials offered 9,216 ways to compute an effect size depending on the decision rules that applied. While the largest density of results hovered just under the $p = .05$ threshold for establishing statistical significance, the effect sizes ranged from $-.38$ to $.18$ (see Palpacuer et al., 2019).

Registered reports. Journals can encourage open science by having a registered report submission track. Registered reports involve two stages whereby reviewers evaluate the theory and methods of a study (ideally) prior to data collection, offering a conditional acceptance to designs that answer meaningful questions with rigor. In I-O psychology, journals adopting this format of submission are the *Journal of Business and Psychology*, the *Journal of Occupational and Organizational Psychology*, the *International Journal of Selection and Assessment*, and the *Journal of Personnel Psychology*. A full list of journals accepting registered reports is available at the Center for Open Science (<https://cos.io/rr/>).

Early reports suggest that preregistration may help strengthen a paradigm when journals adopt a registered report submission process. For instance, the journal *Cortex* observed that when authors submit their work as a registered reports, only 10% of submissions were rejected. This is in stark contrast to the primary/conventional submission track, whereby 90% of submissions are rejected (see Chambers, 2019).

A Call to Open Up Industrial and Organizational Psychology

We are at our best when our work informs evidence-based practice by challenging beliefs about the way the world works. Adopting open science furthers evidence-based practice (Banks et al., 2018). As pointed out by Banks et al.: "Evidence-based management stands to benefit from these practices as practitioners will gain increased access to scientific content, which in turn could ultimately reduce the science-practice gap (Banks & McDaniel, 2011; Schmidt & Oh, 2016)."

As industrial and organizational psychologists, we use the scientific method while applying the principles of psychology to enhance organizational performance. Just as medical researchers have produced insights into how suffering might be reduced, our collective body of evidence provides insights into how individual, team, and organizational performance might be enhanced for the benefit of society. Indeed, by comparison to the medical sciences, our interventions are often more effective, though the public may not see them as such (see Erez & Grant, 2014).

By contrast, using the scientific method is part of what sets our science apart from the pseudosciences (e.g., *psi*, the anti-vax movement, homeopathy), but it is by far not the only thing. As Richard Feynman (1974) put it in his infamous speech on cargo cult science, even pseudosciences can look like science. They may "follow all the apparent precepts and forms of scientific investigation, but they are missing something essential." He was referring to a sort of "bending over backwards" to specify the constraints

on a claim and a lingering feeling that we are deeply mistaken. Such is needed for a field to build a cumulative character of knowledge (Meehl, 1978). Open science practices will be the kind of “bending over backwards” that is needed for us to attain such a cumulative character.

Certain norms are also what set us apart from the pseudosciences. According to sociologist Robert K. Merton, these norms compel scientists within a community to collectively share data openly, evaluate contributions on their own merit, approach knowledge claims in a disinterested manner, and consider all relevant evidence—even contrary evidence—for a claim (see Merton, 1973). Merton also suggested that communities that deviate from these norms are not sciences, but pseudosciences that see nature not as it is revealed via rigorous methodology, but as they would like to see it.

I would like you to entertain a set of provocative questions: Is industrial and organizational psychology—and for that matter, related disciplines (e.g., management, organizational behavior, etc.)—more like science or pseudoscience? While this may be an uncomfortable comparison, it is important to be consistently avoiding pseudoscientific practices while maintaining and improving good scientific practices. Open science does exactly this, helping I-O psychology grow its accountability and reputation as a science-based field. Accusations of unreliability or being a pseudoscience have long been levied at psychology (see Landis & Cortina, 2015; Popper, 1962). Are we a soft science as the public—including funding agencies—perceive us to be (Landis & Cortina)? Or is our science just harder than the hard sciences (Diamond, 1987), and so we must be thoughtful in informing others about who we are and what we can do? How you think of these questions matters because it relates to the need for open science.

Despite what you may think after my admittedly brief and cursory review: science is not broken. I hope that it does suggest that we have room for improvement. We all probably want more robust evidence precisely so that our decisions and actions can be more reliable. As such, I ask that you consider the possibility that the rules of the game we call science be challenged (Chambers, Feredoes, Muthukumaram, & Etchells, 2014). If in this challenge we find that there is room to grow, this is a sign of strength because it demonstrates that our discipline is truly a science.

Next Time on *Opening Up...*

We will answer a key question: how credible is the I-O psych literature (and related literatures)? As a preparatory reading, take a look at Kepes and McDaniel (2013). If you want a deeper dive, consider *Management Studies in Crisis* (Tourish, 2019) and *The Seven Deadly Sins of Psychology* (Chambers, 2017). I will also discuss more key terms (e.g., questionable research practices, QRPs) and other high-profile cases of irreproducibility that are closer to home. Additionally, consider resources made available by the Consortium for the Advancement of Research Methods and Analysis (CARMA), which is providing unlimited free access to open science resources produced by scholars in the organizational sciences (<https://carmattu.com/2019/11/22/9-carma-open-science-portal-unlimited-free-access/>). There, you will find an interview that Mike Morrison and I conducted with Dr. Larry Williams, who is the director of CARMA, and Dr. George Banks, who is one of the leading figures in open science. We talk about QRPs, scientific reform, and ask for tips for opening up our science.

References

- Adam, D. (2019, May 23). A solution to psychology’s reproducibility problem just failed its first test. *Science*. Retrieved November 29, 2019 from <https://www.sciencemag.org/news/2019/05/solution-psychology-s-reproducibility-problem-just-failed-its-first-test>

- Alcock, J. (2011, January 6). Back from the future: Parapsychology and the Bem Affair. *Skeptical Inquirer*. Retrieved from https://skepticalinquirer.org/exclusive/back_from_the_future/
- Aldhous, P. (2011, May 5). Journal rejects studies contradicting precognition. *New Scientist*. Retrieved from <https://www.newscientist.com/article/dn20447-journal-rejects-studies-contradicting-precognition/>
- Banks, G. C., Field, J. G., Oswald, F. L., O'Boyle, E. H., Landis, R. S., Rupp, D. E., & Rogelberg, S. G. (2018). Answers to 18 questions about open science practices. *Journal of Business and Psychology*. <https://doi.org/10.1007/s10869-018-9547-8>
- Bem, D. J. (2011). Feeling the future: Experimental evidence for anomalous retroactive influences on cognition and affect. *Journal of Personality and Social Psychology*, 100(3), 407–425. <https://doi.org/10.1037/a0021524>
- Bergh, D. D., Sharp, B. M., Aguinis, H., & Li, M. (2017). Is there a credibility crisis in strategic management research? Evidence on the reproducibility of study findings. *Strategic Organization*, 15(3), 423–436. <https://doi.org/10.1177/1476127017701076>
- Blastland, M. (2019). *The hidden half: How the world conceals its secrets*. London, England: Atlantic Books.
- Broman, K., Cetinkaya-Rundel, M., Nussbaum, A., Paciorek, C., Peng, R., Turek, D., & Wickham, H. (2017). *Recommendations to funding agencies for supporting reproducible research*. American Statistical Association.
- Camerer, C. F., Dreber, A., Holzmeister, F., Ho, T.-H., Huber, J., Johannesson, M., ... Wu, H. (2018). Evaluating the replicability of social science experiments in *Nature* and *Science* between 2010 and 2015. *Nature Human Behaviour*. <https://doi.org/10.1038/s41562-018-0399-z>
- Center for Open Science. (2019, February 5). *Can machines determine the credibility of research claims?* Retrieved December 2, 2019, from <https://cos.io/about/news/can-machines-determine-credibility-research-claims-center-open-science-joins-new-darpa-program-find-out/>
- Chambers, C. (2017). *The seven deadly sins of psychology: A manifesto for reforming the culture of scientific practice*. Princeton, NJ: Princeton University Press.
- Chambers, C. (2019). *Registered reports: Concept and application PhD workshop*. Retrieved from <https://osf.io/z6xqr/>
- Chambers, C., Feredoes, E., Muthukumaraswamy, S., & Etchells, P. (2014). Instead of “playing the game” it is time to change the rules: Registered reports at *AIMS Neuroscience* and beyond. *AIMS Neuroscience*, 1(1), 4–17. <https://doi.org/10.3934/Neuroscience.2014.1.4>
- Colbert, S. (2011, January 27). Time-traveling porn—Daryl Bem. *The Colbert Report* [Video Clip]. Retrieved November 28, 2019 from <http://www.cc.com/video-clips/bhf8jv/the-colbert-report-time-traveling-porn---daryl-bem>
- Diamond, J. (1987). Soft sciences are often harder than hard sciences. *Discover*. Retrieved from http://jareddiamond.org/Jared_Diamond/Further_Reading_files/Diamond%201987_1.pdf
- Engber, D. (2017, May 17). Daryl Bem proved ESP is real, which means science is broken. *Slate*. Retrieved November 28, 2019, from <https://slate.com/health-and-science/2017/06/daryl-bem-proved-esp-is-real-showed-science-is-broken.html>
- Erez, A., & Grant, A. M. (2014). Separating data from intuition: Bringing evidence into the management classroom. *Academy of Management Learning & Education*, 13(1), 104–119. <https://doi.org/10.5465/amle.2013.0098>
- Fanelli, D. (2010). “Positive” results increase down the hierarchy of the sciences. *PLOS ONE*, 5(4), e10068. <https://doi.org/10.1371/journal.pone.0010068>
- Feynman, R. (1974). *Cargo cult science*. Caltech.
- Flore, P. C., Mulder, J., & Wicherts, J. M. (2018). The influence of gender stereotype threat on mathematics test scores of Dutch high school students: A registered report. *Comprehensive Results in Social Psychology*, 3(2), 140–174. <https://doi.org/10.1080/23743603.2018.1559647>
- Gad-el-Hak, M. (2011, January 7). When peer review falters. *The New York Times*. Retrieved from <https://www.nytimes.com/roomfordebate/2011/01/06/the-esp-study-when-science-goes-psychic/when-peer-review-falters>
- Galak, J., LeBoeuf, R. A., Nelson, L. D., & Simmons, J. P. (2012). Correcting the past: Failures to replicate psi. *Journal of Personality and Social Psychology*, 103(6), 933–948. <https://doi.org/10.1037/a0029709>
- Gilbert, D. T., King, G., Pettigrew, S., & Wilson, T. D. (2016). Comment on “estimating the reproducibility of psychological science.” *Science*, 351(6277), 1037–1037. <https://doi.org/10.1126/science.aad7243>
- Hagger, M. S., Chatzisarantis, N. L. D., Alberts, H., Anggono, C. O., Batailler, C., Birt, A. R., ... Zwienerberg, M. (2016). A multilab preregistered replication of the ego-depletion effect. *Perspectives on Psychological Science*, 11(4), 546–573. <https://doi.org/10.1177/1745691616652873>

- Inzlicht, M., & Friese, M. (2019). The past, present, and future of ego depletion. *Social Psychology*, 50(5–6), 370–378. <https://doi.org/10.1027/1864-9335/a000398>
- Kekecs, Z., Aczel, B., Palfi, B., Szaszi, B., Szecsi, P., Kovacs, M., ... Liu, H. (2019). Raising the value of research studies in psychological science by increasing the credibility of research reports: The Transparent Psi Project. *PksyArXiv Preprints*, 44.
- Kepes, S., & McDaniel, M. A. (2013). How trustworthy is the scientific literature in industrial and organizational psychology? *Industrial and Organizational Psychology*, 6(03), 252–268. <https://doi.org/10.1111/iops.12045>
- Kinias, Z., & Sim, J. (2016). Facilitating women's success in business: Interrupting the process of stereotype threat through affirmation of personal values. *Journal of Applied Psychology*, 101(11), 1585–1597. <https://doi.org/10.1037/apl0000139>
- Kramer, B., & Bosman, J. (2018). *Rainbow of open science practices*. <https://doi.org/10.5281/ZENODO.1147025>
- Kwon, D. (2018, August 1). Effort to reproduce cancer studies scales down to 18 papers. *The Scientist*. Retrieved August 12, 2019, from <https://www.the-scientist.com/news-opinion/effort-to-reproduce-cancer-studies-scales-down-effort-to-18-papers-64593>
- Landis, R. S., & Cortina, J. M. (2015). Is ours a hard science (and do we care)? In C. E. Lance & R. J. Vandenberg (Eds.), *More statistical and methodological myths and urban legends* (pp. 9–35). New York, NY: Routledge.
- Makel, M. C., Plucker, J. A., & Hegarty, B. (2012). Replications in psychology research: How often do they really occur? *Perspectives on Psychological Science*, 7(6), 537–542. <https://doi.org/10.1177/1745691612460688>
- Meehl, P. E. (1978). Theoretical risks and tabular asterisks: Sir Karl, Sir Ronald, and the slow progress of soft psychology. *Journal of Consulting and Clinical Psychology*, 46, 806–834.
- Merton, R. (1973). *The sociology of science: Theoretical and empirical investigations*. Chicago, IL: University of Chicago Press.
- MSNBC. (2011). Professor: Strong evidence ESP is real. *NBCNews.com* [Video]. Retrieved from <http://www.nbcnews.com/video/msnb-news/40965642>
- Nguyen, H.-H. D., & Ryan, A. M. (2008). Does stereotype threat affect test performance of minorities and women? A meta-analysis of experimental evidence. *Journal of Applied Psychology*, 93(6), 1314–1334. <https://doi.org/10.1037/a0012702>
- Nosek, B. A., Alter, G., Banks, G. C., Borsboom, D., Bowman, S. D., Breckler, S. J., ... Yarkoni, T. (2015). Promoting an open research culture. *Science*, 348(6242), 1422–1425. <https://doi.org/10.1126/science.aab2374>
- Nuijten, M. B., Hartgerink, C. H. J., van Assen, M. A. L. M., Epskamp, S., & Wicherts, J. M. (2016). The prevalence of statistical reporting errors in psychology (1985–2013). *Behavior Research Methods*, 48(4), 1205–1226. <https://doi.org/10.3758/s13428-015-0664-2>
- Open Science Collaboration. (2015). Estimating the reproducibility of psychological science. *Science*, 349(6251), aac4716–aac4716. <https://doi.org/10.1126/science.aac4716>
- Palpacuer, C., Hammas, K., Duprez, R., Laviolle, B., Ioannidis, J. P. A., & Naudet, F. (2019). Vibration of effects from diverse inclusion/exclusion criteria and analytical choices: 9216 different ways to perform an indirect comparison meta-analysis. *BMC Medicine*, 17(1), 174. <https://doi.org/10.1186/s12916-019-1409-3>
- Popper, K. (1962). *Conjectures and refutations*. New York, NY: Basic Books.
- Resnick, B. (2019, February 25). The military wants to build a bullshit detector for social science studies. *Vox*. Retrieved March 20, 2019, from <https://www.vox.com/science-and-health/2019/2/25/18211125/darpa-score-center-for-open-science-ai>
- Ritchie, S. J., Wiseman, R., & French, C. C. (2012). Failing the future: Three unsuccessful attempts to replicate Bem's "retroactive facilitation of recall" effect. *PLOS ONE*, 7(3), e33423. <https://doi.org/10.1371/journal.pone.0033423>
- Rosen, C. C., Koopman, J., Gabriel, A. S., & Johnson, R. E. (2016). Who strikes back? A daily investigation of when and why incivility begets incivility. *Journal of Applied Psychology*, 101(11), 1620–1634. <https://doi.org/10.1037/apl0000140>
- Schijen, M., Scheel, Anne, & Lakens, D. (2019). Positive result rates in psychology: Registered reports compared to the conventional literature. <https://osf.io/854zr/>
- Shewach, O. R., Sackett, P. R., & Quint, S. (2019). Stereotype threat effects in settings with features likely versus unlikely in operational test settings: A meta-analysis. *Journal of Applied Psychology*, 104(12), 1514–1534. <https://doi.org/10.1037/apl0000420>

- Shoda, Y., Mischel, W., & Peake, P. K. (1990). Predicting adolescent cognitive and self-regulatory competencies from preschool delay of gratification: Identifying diagnostic conditions. *Developmental Psychology*, 26(6), 978–986.
- Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology*, 69(5), 797–811. <https://doi.org/10.1037/0022-3514.69.5.797>
- Szollasi, A., Kellen, D., Navarro, D., Shiffrin, R., van Rooij, I., Van Zandt, T., & Donkin, C. (2019). *Is preregistration worthwhile?* [Preprint]. <https://doi.org/10.31234/osf.io/x36pz>
- Tourish, D. (2019). *Management studies in crisis: Fraud, deception and meaningless research*. Cambridge, UK: Cambridge University Press.
- Wagenmakers, E.-J., Wetzels, R., Borsboom, D., & van der Maas, H. L. J. (2011). Why psychologists must change the way they analyze their data: The case of psi: Comment on Bem (2011). *Journal of Personality and Social Psychology*, 100(3), 426–432. <https://doi.org/10.1037/a0022790>

Speed Benchmarking Event Summary

Jerilyn Hayward
ServiceMaster

At this year's LEC Speed Benchmarking event, more than 100 I-Os got together to share their experiences around specific topics. Attendees were able to benchmark with each other, and conversations were led by our gracious table facilitators (listed below):

Amber Burkhart	Faisal Ahmed	Lynn Collins
Amie Lawrence	Frank Schneider	Matthew Neale
Charles Handler	Holly Payne	Mike Knott
Daly Vaughn	Isaac Thomson	Mort McPhail
Doug Reynolds	Jurgen Bank	Neal Schmitt
Erin Laxson	Laura Johnson	Neil Morelli
Evan Sinar	Leaetta Hough	Paul Sackett

Below are some highlights of what participants at the event discussed:

Assessments for Coaching and Development

- Assessments for development require the same rigor of validation as assessments used for selection.
- There is a trend to offer coaching for lower level leaders as well as executives, and not just when performance issues arise.
- Scalable assessments for development in large companies would be welcomed (but the need for qualified individuals to interpret the information may be a constraint).
- Assessments are worthless if nothing is done with the results. Participants have better outcomes if a debrief is offered as part of the assessment. Keep in mind that assessments are tools to inform development, not the development itself.
- Understand the unique situation of your organization in order to demonstrate value (culture, level, restructure, etc.) to leaders.

Explaining the Value of Assessments to Stakeholders

- Boiling the data down to essential components is critical; business stakeholders don't need the details and they don't need "psych-speak."
- Stakeholders rely on their guts, so explain one data point of the many used in the decision-making process and tie it to their experience. If they feel that a hiring process is working, they won't always see why it should change.
- We can't always count on validity and business results aligning, and this is the chance for I-O's to exert influence at the level required to be strategic.

Gamification, Games, and Simulations

- The current preference is more toward simulations and gamification (incorporating game elements or features) over true game-based assessments.

- Face validity and job relevance are critical factors in design and implementation.
- The rationale behind adopting gamified assessments needs to be considered (i.e., candidate experience, improved measurement of KSAOs and constructs); “because leadership wants a gamified assessment” is not acceptable justification.

Development Assessment Centers

- Companies are seeking more customization of high-fidelity exercises, with organization-specific capabilities/leadership models.
- Development Assessment Centers are not an end in themselves and are being more actively connected to other development methods (e.g., coaching, workshops, assignments, micro-learning).
- Development Assessment Centers are being extended beyond senior leader levels to the full leadership pipeline.

Advances in Measurement Science

- The business demand for short assessments can cause measurement problems, and no matter what the advances in measurement science are, with no buy-in they won’t be accepted within the business.
- Measurement capability is still challenged by leaders when an individual they know to be doing well on the job fails an assessment.

Innovation in Mobile Assessment

- Be aware of who is using mobile devices; look for ways not to lose lower SES candidates.
- Will generational differences between texting and typing impact scoring patterns? How should we use simulations with data entry across device types?
- Can DIF be used to examine which aspects of assessment performance are related to device type versus true competence?
- Can time-tracking features be loaded into phones in advance so they aren’t reliant on Internet connectivity?
- What potential do smartphone features provide to unlock video, voice, and even physical examinations when job relevant (NLP, voice capture and analysis, video feature analysis)?
- What potential exists in virtual reality and augmented reality, for simulations and realistic RJPs?
- Using mobile is now a necessity to ensure candidate flow and increase diversity.
- Focus on features of devices, rather than device type (e.g., big screens versus small screen, processing power, etc.) and design down to the smallest device.
- Changes in design can cause change in completion time and candidate experience; for short screenings, completion rates are high, but for longer leadership assessments, completion drops off.
- Count on having the need for help desk personnel to resolve issues.
- Take care to consider reasonable accommodations of disabled individuals.

Please join the SIOP Speed Benchmarking event in Austin, brought to you by the Career and Professional Development for Practitioners Committee.

Max. Classroom Capacity: Dr. Strange Grade

Loren J. Naidoo
California State University, Northridge



The other night I was up late working while staying at a vacation home—that's a sad sentence! I was trying to write and not getting anywhere. I got tired of staring at my laptop screen, so I turned on the TV to distract me from my lack of progress (generally, a terrible idea!). I don't usually do this because I don't have cable TV at home. I ended up watching most of a movie called "Doctor Strange," a visually stunning and borderline incoherent Marvel superhero movie. As far as I could determine (and sure, I wasn't watching too carefully), the titular hero, his robed associates, and the generic bad guys could open portals to other dimensions and alter reality in various kaleidoscopic and visually confusing ways. Anyway, the basic idea seemed to be that our experienced reality is limited and largely determined by our beliefs.

All of this made me think about grading (sad sentence #2). So, using Dr. Strange as a theme, I'd like to present some contrarian ideas about grading. We are going to open sparkly portals to other dimensions of grading, peer inside, and hopefully go on a spiritual journey from which we will return forever changed! It's important to say that I'm not the first person to talk about these ideas. However, aligned with our Dr. Strange theme, we aren't going to burden this column with evidence, theories, or any kind of logical sequencing of events—the goal is to be entertaining! Finally, to fully duct tape this theme together, I will organize the topics in terms of different dimensions of reality. So, "forget everything you think you know," ready your hands dramatically, flail at the air in front of you, and open the portal to...

1. The Percentage Dimension

Here's what the percentage dimension looks like. Most class assignments are graded out of 100, and for those that are not, both the grade (e.g., out of 20) and the percentage are reported. Multiple choice exams are beloved in this dimension! If a student gets 20 out of 20 multiple choice questions correct, then a grade of 100% has intuitive meaning to students. Similarly, a zero grade for getting every question incorrect makes sense. Outside of this dimension, there aren't too many contexts in the practice of I-O psychology where there is a single correct answer among a set of incorrect answers to a given problem. There are other approaches to multiple choice tests, including ones in which more than one answer can be correct, and where incorrect answers receive negative scores to discourage guessing, but these are less frequently used and don't substantially change the interpretation of percentage scores. Outside of the context of multiple choice tests, it becomes progressively less and less clear how to interpret a percentage grade. Take, for example, a paper assignment. What does a 100% grade on a paper mean? That the student did exactly what you wanted them to do? That there was fixed domain of knowledge that was being assessed and they demonstrated mastery of the entire domain? Does a 90% grade mean the student needs to exert 10% more effort next time, that 10% of the required content was missing, or that 10% of what they wrote was incorrect? I wonder how students interpret percentage grades beyond a vague sense of goodness versus badness, or their equivalent in letter grades—about which we could ask the same kinds of questions. What about assignments that involve creativity, in which, presumably, we want students to develop new answers and ideas that the instructor has not thought of? What do percentage grades mean in that context? Of course, a good grading rubric provides students with a verbal description of each performance level, but I suspect that the real reason we dwell in this dimension so much is so that we can get to the next dimension...

2. The Average Dimension

Here's what calculating grades at the end of the semester might look like in the average dimension. There's a big Excel spreadsheet. Students are in rows, assignments in columns. Each column has a cell that specifies what the assignment was out of and another cell that specifies the weighting of the assignment relative to the total grade. Students' scores are divided by the "out of" cell, multiplied by the weight cell, and then summed to form a final percentage grade. There may be aspects of the grading scheme that slightly deviate from this weighted average approach—bonus assignments, a set of assignments from which the top X scores are counted, etc. Regardless, final grades are fundamentally quantitative. Students usually aren't given any kind of overall qualitative evaluation of their performance over the entire class. The principle advantages of the weighted average approach are that (a) it is a relatively objective, unbiased way to achieve an overall assessment of student learning, (b) it is relatively easy to do with a computer or calculator, and (c) arriving at a single numerical grade for each student for each class makes it easy to then numerically calculate a weighted average that represents their overall academic performance, which then lets us compare students to each other and to external standards.

Why do we spend so much time in the average dimension? The average is but one indicator of central tendency, and one that we know is not ideal in all circumstances (e.g., when there are outliers, such as when a student bombs one test but does well on everything else). Why not, for example, weight assignments equally and use the median of the scores? The use of averages is so ingrained that students are generally resistant to the idea of using anything else. I can remember raising this issue early on in an introductory statistics class. I asked my students if we should use their median daily participation grade rather than their average. Students felt that using the median would in some sense mean they aren't getting credit for their work that resulted in grades *above* the median. Ultimately, the more time we spend in the average dimension the easier it is for us to travel to the evaluative dimension, and the harder it is for us to access the development dimension (see Dimensions #6 and #7).

On another note, in taking the average we do not consider the trajectory of performance. For example, in I-O psychology practice, an employee might receive performance feedback indicating that they are below standard for a particular competency. They might then work to develop that competency, maybe with some successes and some failures, eventually reaching the point where they have met or maybe exceeded the standard. From a practical standpoint, this is a trajectory you would want to see in your employees. To which of two employees with the same *average* score on customer service over the past 5 years would you assign the task of working to solve a sensitive issue with a disgruntled client—the one who has been consistently mediocre or the one who started out below standard but is now above standard? Partly the failure of the average dimension is to consider trajectory may be due to our tendency to dwell in the next dimension...

3. The One-and-Done Dimension

In this dimension we only give an assignment once in a class. Students are graded and provided no opportunity to resubmit their assignments. Classes may be divided up according to textbook chapter, with each chapter reflecting a different domain of knowledge. Assessments target discrete domains of knowledge, there is little carryover of knowledge from assessment to assessment, and no general expectation that students' scores should go up over time. I've been in this dimension, uncertain how to respond to a student who asked me to regrade the paper that they had revised based on my original grade and feedback. Many courses avoid this dimension by having cumulative final exams which reassess material that may already have been part of midterm exams or some other assignment.

4. The Incentive Dimension

In the incentive dimension, grades are magically transformed into carrots and sticks. Here grades are used to incentivize behaviors desired by the instructor (e.g., attending class), and to disincentivize undesired behaviors (e.g., showing up late to class). These grades may have little or nothing to do with student learning, knowledge, or performance. Particularly interesting examples of practices in the incentive dimension include that of punishing students for late submissions of assignments and rewarding students for perfect attendance. For the former, long time incentive dimension dwellers might argue that when students enter the workforce, they will need to be able to meet deadlines and won't have the luxury of asking for an extension—that they must learn to “be responsible.” This is nonsense, of course. Yes, sometimes deadlines are impossible to shift, but probably more often, asking one's boss for more time on a project is completely reasonable and acceptable. In fact, the *more* responsible employee may be the one who asks for extra time and/or resources when needed rather than submits poor-quality work. Is our rigid adherence to deadlines really about preparing students for “the real world,” or is it more about convenience for us as instructors? Another incentive dimension argument might be something like “allowing some students to hand in work late without penalty is unfair to the students who completed the work on time.” This is true only if this privilege is distributed unequally. I have shifted away from the incentive dimension view of lateness, giving due dates that are flexible early in the semester, and ones that are fixed later in the semester (when grades are due). This allows students more leeway in managing their workloads (at least early in the semester), which students tend to greatly appreciate, and which might actually be more consistent with most employees' experiences with time management at work.

5. The Evaluative Dimension and 6. The Development Dimension

As we know from theory and research on performance appraisal in general, and 360-degree feedback in particular, the ostensible goal of the performance-appraisal system, specifically whether the feedback is used for performance evaluation or employee-development purposes, is an important determinant of how that system operates. Similarly, research on mindset and goal orientation has shown that an excessive focus on performance and grades can undermine depth of processing and learning. The more time we spend in the evaluative dimension, where instructors warn students that their exams are difficult and students are more concerned with not failing than they are with learning, the less time we spend in the development dimension, where instructors emphasize learning and improvement, and students pursue learning for its own sake. From a practical standpoint, there seems to be only limited need for the evaluative dimension where GPA might figure into applications to graduate school, financial support, and students' first job out of college. Clearly, it's not a sufficiently important need to prevent universities like Brown from declining to assign traditional grades in undergraduate classes. The Evaluative Dimension of grading is pervasive and difficult to escape...

I hope you've enjoyed this mystical journey through the grading multiverse.

Let me finish with an inscrutable quote from Dr. Strange, the movie:

Bad guy: “How long have you been at Kamar-Taj, Mister...?”

Dr. Strange: “Doctor”

Bad guy: “Mister Doctor.”

Dr. Strange: “It's Strange.”

Bad guy: “Maybe. Who am I to judge?”

As always, dear readers, please email me with your questions, comments, and feedback:

Loren.Naidoo@csun.edu.

TIPTopics: Writing Is Hard: A Discussion on Writing in Graduate School

Andrew Tenbrink, Mallory Smith, Georgia LaMarre, Laura Pineault, and Tyleen Lopez
Wayne State University

To be successful in graduate school, it is necessary to be able to write effectively and efficiently. Graduate students spend a substantial amount of time on a variety of writing endeavors. We take notes during seminars, compose emails, collaborate on academic manuscripts, submit research proposals, fill out award applications, and create executive reports, just to name a few. Writing is critical to achieving nearly [every major milestone as graduate students](#) and is included on [O*NET](#) as an important skill necessary for an I-O psychologist. On one hand, writing represents an opportunity to express our unique opinions, ideas, and knowledge to the world. On the other hand, writing can be one of our most demanding tasks as a graduate student, requiring attention to multiple cognitive processes at once ([Fitzer, 2003](#)), and, often, evoking counterproductive feelings of [self-criticism and doubt](#). Whether you find yourself embracing or avoiding writing tasks, many of us can probably agree on one simple fact: Writing is hard. For presumably thousands of years, individuals have struggled to accurately capture their ideas in writing; nevertheless, they have come out the other side (relatively) unscathed and better off for having done it. So, the question then becomes “How do we become great at something that is so incredibly difficult?”

Our goal for this article is to engage in a discussion about graduate students’ angst towards writing and to identify strategies and resources that graduate students can use to overcome mild or severe cases of fear of writing. We do this by focusing on four themes that we have identified through reader feedback, popular press, academic literature, and our own experience: (a) productivity, (b) quality, (c) collaboration, and (d) enjoyment. These themes are not meant to be comprehensive but are a great starting point for those wanting to take a more intentional approach to improving their writing. Throughout the article, we have also included direct comments from our authorship team offering our personal opinions on these topics. Together, we hope that the perspectives within this article resonate with other graduate students and that we can provide a set of tools for improving the quality (and quantity) of your written work while also making the writing process more enjoyable.

Productivity

As graduate students, our to-do lists never end—class, schoolwork, research, repeat. With so much to get done, it can be tempting to procrastinate major writing tasks. Here are some tips to stay productive and make progress on your writing.

Make a plan and set SMART goals. [SMART stands for Specific, Measurable, Achievable, Relevant, and Time bound](#). SMART goals can help you to stay motivated and accountable for the writing that must be done. As an example, you may set the following SMART goal: “This week I will write 30 minutes a day to complete the introduction of my paper.” Setting goals can help to [develop a consistent writing habit](#). Writing every day for at least 30 minutes will help you to make consistent progress while also improving your writing stamina. If you have trouble focusing, start with 30 minutes and work your way up to 90 minutes, increasing your daily writing time by 15 minutes every week.

There are some days when I can write for hours and other days when I struggle to write for 30 minutes. On my “writing struggle” days, I try not to get too frustrated and instead

move on to reading or other class assignments, that way I still feel accomplished and productive. –Tyleen L.

Minimize distractions. After a long day of classes and schoolwork the last thing we want to do is write... so Netflix, Twitter, Instagram, and Facebook are welcome distractions. However, it is important to minimize the distractions in our everyday lives since “you cannot escape the [writing] responsibility of tomorrow by evading it today.” To limit the impact of these tempting alternatives, track your screen time and impose a daily limit. If you are under a time crunch, consider temporarily deleting these apps altogether. To minimize interruptions from peers or family, find a quiet place where you can focus on your writing. Although minimizing distractions is difficult to do, your future self will thank you for it.

I disconnect from distractions and work on a large computer monitor, rather than my laptop, so that I can have multiple windows open and visible. – Laura P.

Don't be so hard on yourself. [It is impossible to reach perfection.](#) While producing high-quality work is always our goal, getting stuck in perfectionistic loops (e.g., fearing you have not reviewed enough literature to begin writing) can be counterproductive to making progress. Remember that “done is better than perfect”—aim to do your best and keep writing!

Quality

Completing a writing task can be an incredible feeling, but it is also important to focus on the quality of the work that we are putting on the page. Interestingly, many of us have not received formal training in writing or identify as “writers.” As we progressed through school, more and more writing was gradually required of us and then one day, we woke up as graduate students who need to be able to write to survive. With most of our development as writers coming from the comments of instructors and advisors along the way, it is important to take ownership of the quality of what we write and facilitate our own growth as writers.

Good writing is simple. When writing in academia, it can be easy to fall into the trap of creating long sentences and incorporating as much jargon as possible. Formal writing using technical language may be necessary when dealing with complex topics or addressing an expert audience, but the best and most enjoyable writing [conveys information with clarity and simplicity.](#) For most of us, this is not easily achieved on the first attempt and requires extra time and effort. One strategy to help facilitate a simple and coherent writing structure is to create an outline. Outlines help to organize our thoughts and ensure that we are telling a cohesive and compelling story. Another way to achieve simplicity is to make time for rewriting (and more rewriting). It's unfair to expect that we get it right on the first try. Once we have words on the page, rewriting is an opportunity to clarify our thoughts and get rid of unnecessary clutter. Reading through your work and making revisions ensures that your writing is error free (free of, e.g., typos, missing words) and that your arguments are communicated clearly to your intended audience.

One strategy that I like to use is to take time to read my writing out loud. I like a conversational style of writing, so this exercise helps me to make sure my writing sounds clear and is written in a way that is easily understood. – Andrew T.

Practice makes progress. Just like with anything else in life, you get better at writing with experience. For most of us, writing isn't something that we are naturally gifted at but a skill that has to be honed and developed throughout our academic careers. It is important to remember that developing your skills and finding your *voice* as a writer is an iterative process and improving the quality of your writing happens

gradually over time. The nice thing is that writing skills can be developed in a variety of ways. Taking the time to write for different purposes or outlets (e.g., peer-reviewed journals, popular press, technical reports) can help you to learn how to write for different audiences and become more confident as a writer.

Read, read, and read some more. A simple way to be become a better writer is to read. It might seem counterintuitive or maybe just extremely obvious, but [reading is absolutely essential if one wishes to become a great writer](#). This is even more important for graduate students in a technical field, such as I-O psychology, because of the vast amount of empirical information that we incorporate into our writing. Through becoming familiar with the works of other accomplished writers, you can improve your own writing by modeling your work after theirs. An added bonus is that reading is also the best way to come up with new research ideas!

When preparing a manuscript, I especially read material from the journal that I am targeting. This allows me to better understand the journal's audience and imposes structure on what may seem to be an ambiguous task. – Laura P.

Collaboration

Writing is a team sport. Much of the writing that we do in academia extends beyond the influence of just one individual, as evidenced by solo-authored manuscripts being the exception, not the rule. Research is founded on collaboration and this also applies to the writing process. Working with collaborators allows new perspectives to be integrated and the overall quality of the work to be improved. Getting fresh eyes on something can be an extremely helpful way to combat writer's block while also generating new ideas and motivation for writing.

Feedback is fundamental. One of the benefits of collaboration is receiving feedback from other writers. For many of us, advisors and instructors represent our most common source of writing feedback. Although their input is unquestionably valuable, peers and other colleagues can also be useful sources of feedback. In fact, research has shown that peer feedback may be just as beneficial as instructor feedback ([Huisman et al., 2019](#)). A willingness to seek out feedback not only establishes a desire for improvement but may also enhance other outcomes like satisfaction and networking ([Anseel et al., 2015](#)). However, it is critical to remember what feedback is: an opportunity to improve, not an attack on your work. Receiving consistent feedback can and should become a foundational part of your writing process.

My advisor and I have recently started planning short meetings to discuss my thesis progress in person. Explaining my ideas and getting in-person feedback has been a useful supplement to the feedback I get on my thesis drafts and has also helped re-energize me about projects or ideas I feel bored with. – Georgia L.

Integrating ideas. Collaborating with other authors can improve quality and productivity, but it can also be challenging to integrate ideas and perspectives from various authors. It is important to remember that collaboration is a balancing act of being open to new ideas and advocating for your own well-informed opinions. Don't be afraid to give critical feedback to others and encourage others to be critical of you. In fact, moderate levels of task-focused conflict can be beneficial for the quality of teams' creative output ([Farh et al., 2010](#)). This not only applies to peer collaboration but also when you are working with advisors or other faculty members. You always have important thoughts to share; being willing to do so can be extremely beneficial.

One strategy I have employed is encouraging each group member to write as much as they can on a topic, without rigidly defining the boundaries of assigned sections. When we come together, we have a lot of information that can then be winnowed down, connected, and organized around our key message. – Mallory S.

Establish expectations. One downside of collaboration is that it can make what should be a simple process more complicated. Scheduling difficulties and conflicting priorities can make coordinating with others difficult. When working with collaborators, it can be helpful to first establish expectations ([Mathieu & Rapp, 2009](#)). These expectations could be about what each person will contribute, the timeline in which work should be completed, the order of authorship, or even the intended outlet for the project (e.g., poster, symposium, manuscript). Having these conversations prior to beginning work can save you a lot of headaches down the road. Additionally, being intentional about creating accountability can help to ensure that expectations are met.

Enjoyment

Writing can often be an isolating experience, especially when it comes to the daunting task of writing your thesis or dissertation. But maybe writing doesn't have to be daunting and isolating... maybe it can be, dare we say it, *fun*.

Join a writing group. Reach out to others in your cohort or maybe even create a Facebook group with graduate students at other universities. Once you find peers to join your group, [set common goals](#). If all members of your group agree to meeting four times a week for 90 minutes a day, you have multiple people to hold you accountable to write and make progress. Further, when you surround yourself with people who have a common goal, you'll feel more energized and motivated. Working with other students may also help when you have writer's block: Speaking your ideas out loud to others helps to ensure that your ideas are coherent, and you may get useful feedback. The opportunity to gain lifelong friends and networking connections through a writing group is valuable because having support in graduate school is key for success.

Our graduate student organization started organizing monthly writing retreats. These sessions are a great opportunity to get a lot of writing done. Being around your peers is both inspiring and motivating! – Andrew T.

Ditch your desk at home. Writing in the same place every day can become tiring. You may not feel motivated by your workspace anymore, and that's normal! When you get sick of doing work at home or at school, venture out to a new café or another quiet location. Finding new surroundings buzzing with people can help stave off writing-induced loneliness. If you prefer to work at home, decorate your desk area to be more motivating. Put up inspiring artwork, pictures with friends and family, or motivational quotes. Now when you get tired of writing, you can look up and remember good moments and positive thoughts to keep you motivated.

When I get tired of working at home, I like to go to Starbucks and treat myself to a latte and a pastry; it's a small treat that puts me in positive mindset to tackle my writing and schoolwork for the day. – Tyleen L.

Stay positive. Above all, having a good attitude towards the writing process is important. Maintaining a positive mindset can be difficult though—especially if writing is not your strong suit. However, if you associate writing with miserable feelings, you will never want to do it. When you're having trouble stay-

ing positive, you can try reaching out to loved ones for a pep talk or creating a writing-themed mantra to recite. By turning negative thoughts into positive statements, you will reduce anxiety and bolster your confidence to complete your writing. As impossible as it may seem at times [to stay positive](#), know that we can and should find joy in both our writing and our everyday lives as students.

Resources

Beyond this article, there are many resources available for students who are interested in becoming better, more productive writers. These resources cover a variety of writing-related topics, offer unique perspectives outside of I-O, and help to facilitate an efficient writing process. Below you will find a list of resources that have been helpful to us and we think may be helpful to you too.

- ***On Writing Well* by William Zinsser:** Writer William Zinsser offers his thoughts on how to write good nonfiction with a chapter focused on the sciences.
- ***How to Write a Lot* by Paul J. Silvia:** Psychology Professor Paul J. Silvia provides his best tips and tricks for being a productive writer.
- **National Center for Faculty Development & Diversity (NCFDD):** Over 200 universities are institutional members of the NCFDD, which offers full resources to graduate students including a weekly motivational email.
- **Campus Writing Centers:** Most campuses have academic writing services available where students can receive one-on-one coaching from trained writers.
- **Google Docs & Dropbox Paper:** Cloud-based tools are extremely helpful for collaborating with other authors and making edits to documents in real time.
- **Focus Keeper & Grid Diary:** Mobile apps are beneficial for tracking progress toward writing goals or facilitating a more productive and distraction-free writing session.
- **EndNote, Zotero, & Mendeley:** Utilizing reference management software is a great way to keep relevant literature organized and make the citation process more efficient.

Team Biographies

Andrew Tenbrink is a 4th-year PhD student in I-O psychology. He received his BS in Psychology from Kansas State University. His research interests include selection, assessment, and performance management, with a specific focus on factors affecting the performance appraisal process. Currently, Andrew has a 1-year internship working as a research, development, and analytics associate at Denison Consulting in Ann Arbor, MI. Andrew is expected to graduate in the spring of 2021. After earning his PhD, he would like to pursue a career in academia. andrewtenbrink@wayne.edu | @AndrewPTenbrink

Mallory Smith is pursuing a Master of Arts in I-O Psychology. She earned her BA in Psychology and German from Wayne State University in 2017. Her interests include factors influencing employee attitudes, efficacy, and perceptions of justice during organizational change. Following graduation, she is interested in an applied career in the private sector—ideally in a role where she can help employees and businesses anticipate, prepare for, and navigate periods of uncertainty. smithy@wayne.edu | @mallorysmith

Georgia LaMarre is a 3rd-year PhD student in I-O psychology. Originally from Canada, she completed her undergraduate education at the University of Waterloo before moving over the border to live in Michigan. Georgia is currently working with an interdisciplinary grant-funded team to study the workplace correlates of police officer stress in addition to pursuing interests in team decision making, workplace

identity, and paramilitary organizational culture. After graduate school, she hopes to apply her I-O knowledge to help solve problems in public-sector organizations. georgia.lamarre@wayne.edu

Laura Pineault is a 4th-year PhD candidate in I-O psychology. Her research interests lie at the intersection of leadership and work–life organizational culture, with emphasis on the impact of work–life organizational practices on the leadership success of women. Laura graduated with Distinction from the Honours Behaviour, Cognition and Neuroscience program at the University of Windsor in June 2016. Currently, she serves as a quantitative methods consultant for the Department of Psychology’s Research Design and Analysis Unit. Laura is expected to graduate in the spring of 2021. After graduate school, she hopes to pursue a career in academia. laura.pineault@wayne.edu | @LPineault

Tyleen Lopez is a 2nd-year PhD student in I-O psychology. She received her BA in Psychology from St. John’s University in Queens, New York. Her research interests include diversity, inclusion, and leadership—particularly regarding ethnic minority women in the workplace. Tyleen is currently a graduate research assistant and lab manager for Dr. Lars Johnson’s Leadership, Productivity and Wellbeing Lab at Wayne State. Tyleen is expected to graduate in the spring of 2023. After earning her PhD, she would like to pursue a career in academia. tyleen.lopez@wayne.edu

Get Ready for SIOP 2020 in Austin!

The Road to the Program and Featured Sessions You Won't Want to Miss

Elizabeth McCune, SIOP 2020 Program Chair, Microsoft

After a nearly record number of submissions and a thorough peer review process, the SIOP 2020 Program Committee is proud to announce that the conference program is complete! A few of the key program statistics for this year are represented in the infographic (see Figure 1). The quality bar for SIOP submissions is always high, and this year was no exception. The acceptance rate across all submissions was 63%, which is comparable to prior years. This year, however, the overall cut score for submissions was slightly higher than in prior years, indicating that the quality of submissions appears to be improving.

In addition to the 954 sessions accepted via the peer review process, the SIOP 2020 program will offer several featured sessions.

SIOP Select Sessions

- Presidential Theme Track (Thursday, April 23): Five sessions covering the who, what, where, why and how of diversity
- Special Events (throughout the conference): These curated sessions feature a story-telling competition, a machine-learning competition, and a scientist–practitioner collaboration showcase. Two additional sessions will feature top experts in psychological safety and best practices for communicating research via media platforms.
- Award Winners: Be sure to plan to attend one of the award-winner sessions in 2020. This year we will feature many of our award winners in a “mash-up” format that allows the audience to learn about a range of notable career achievements in both science and practice through several short, impactful presentations.

Friday Seminars

- Python Programming for I-O Psychology: How to Start and How to Grow
- ML Powered Talent Assessments: Vision Practicalities and Techniques
- Conducting Pay Equity Analyses: The Essentials
- Social Network Analysis of Teams and Organizations
- Interactive Data Visualization Apps With Shiny
- Managing and Engaging External Workers for Maximum Potential

Communities of Interest

- Twelve communities of interest will be offered at the 2020 conference and will take place on Friday and Saturday. A few sample topics include emerging privacy laws, neurodiversity, I-Os in healthcare, text analytics, dual career issues, and international affairs.

We could not be more excited heading into SIOP 2020! In addition to a robust program, we hope you are looking forward to our first conference in Austin, TX. With over 250 music venues, a vibrant art scene, stunning scenery and beautiful spring weather, you are going to love the opportunity to visit Austin. See you at SIOP!

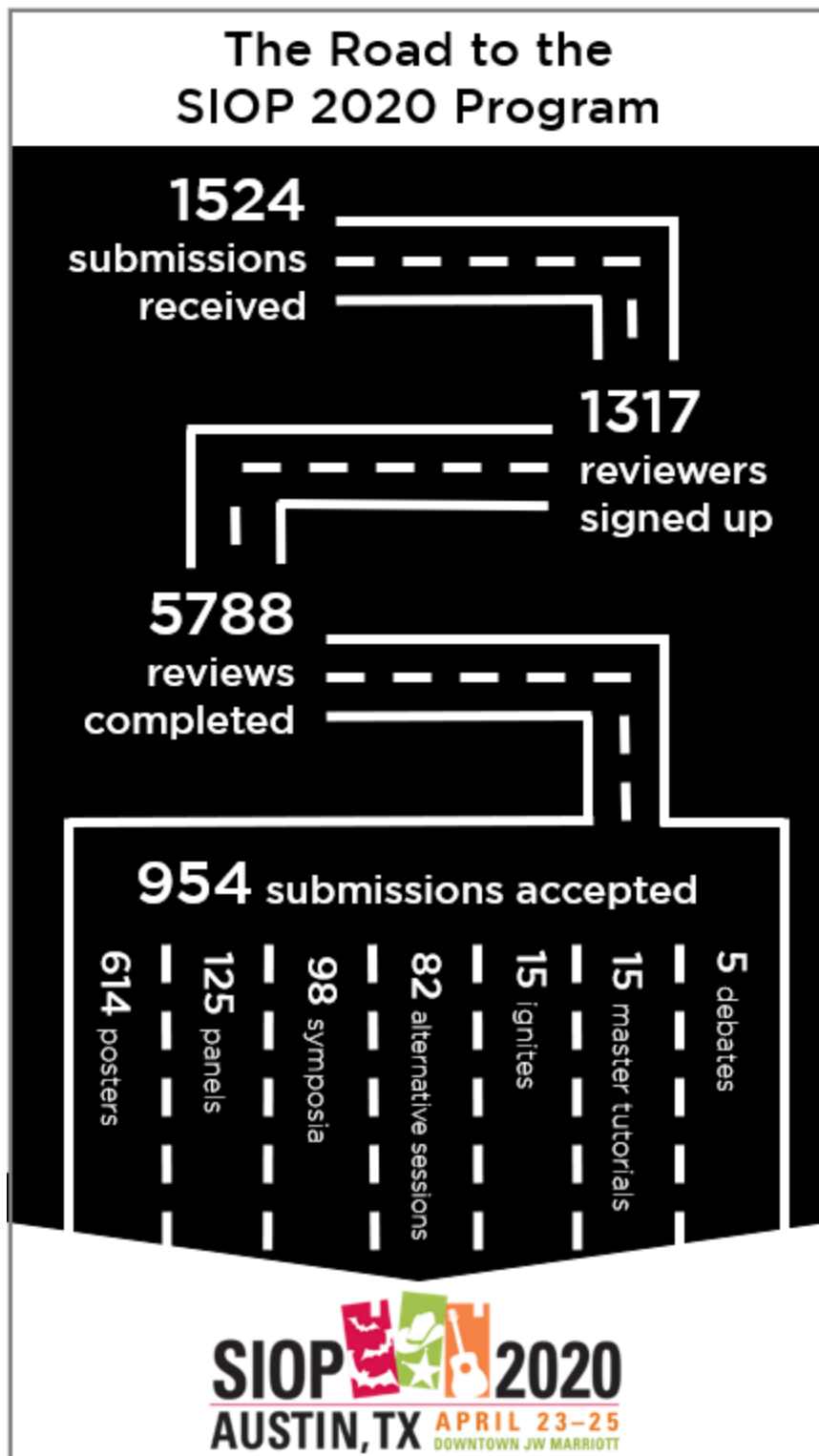


Figure 1. The road to the SIOP 2020 Program.

Where Are They Now? Re-Examining the Migration of I-O Psychologists to Business Schools

Patrick J. Lee

Baruch College and the Graduate Center, City University of New York

Nicolette A. Rainone *

Baruch College and the Graduate Center, City University of New York

Juliet R. Aiken

University of Maryland, College Park

Marcus W. Dickson

Wayne State University

Charles A. Scherbaum

Baruch College and the Graduate Center, City University of New York

Tiancheng Chen

George Mason University

Paul J. Hanges

University of Maryland, College Park

*Author Note: * Patrick J. Lee and Nicolette A. Rainone contributed equally to this article.*

Several concerns have been raised by members of our field regarding the current state of I-O psychology. One is that I-O psychologists (I-Os) are migrating from psychology departments to business schools (e.g., Aguinis, Bradley & Brodersen, 2014; Aguinis et al., 2017). Another is that women and minorities remain underrepresented in I-O (e.g., Gardner, Ryan, & Snoeyink, 2018; Leung & Rainone, 2018).

Although these issues have separately garnered significant attention, they have yet to be integrated. We argue that the two concerns are indeed interconnected and suggest that we begin thinking about them in tandem. Our hope in doing so is to advance the conversation and build towards a broader understanding of a complex, multifaceted issue that has major implications for our field. Additionally, by examining both gender and racial diversity, we provide information about the status of minority women I-Os—a group that often goes unnoticed.

Building upon existing data on the migration of I-Os out of psychology departments, we aim to accomplish our objective by (a) identifying trends in the data that have not been previously identified and (b) highlighting the unintended consequences that this migration poses for gender and racial diversification within our field.

Trends in the Migration Data That Have Not Been Previously Identified

Sample 1: Authors of the most cited articles in I-O textbooks. Aguinis et al. (2017) had already collected a wealth of data on frequently cited authors and articles in our field, and we thought it would be illustrative to investigate migration trends within such a sample of well-cited authors. One particular contribution of Aguinis et al. was to identify the most widely cited articles and book chapters in six popular I-O psychology textbooks. This yielded 59 publications cited in at least four textbooks each, with 152 unique authors of the publications.¹ The authors included a mix of academics, graduate students, and practitioners, and as such represented a diversity of IOP career paths. We supplemented the existing data by gathering two pieces of information per author: (a) departmental affiliation at the time of publication, and (b) current or most recent affiliation.² Three types of affiliations were coded in our analysis: psychology (e.g., I-O) departments, business/management departments (e.g., OB, HRM), and other (e.g., industry, consulting, government, other academic).

With respect to author affiliations at the time of publication of the most cited articles, we found that there was approximately an even split between psychology (60 authors; 40.8%) and business (61 authors; 41.5%) departments. Also, 17.7% (26) of the authors held affiliations external to psychology and business/management. For the current or most recent author affiliations, in comparison, 43.5% (64) of the authors are affiliated with a business school, whereas 27.2% (40) are affiliated with a psychology department and 29.3% (43) are externally affiliated. This supports the Aguinis et al. (2017) suggestion that much impactful research has been and is conducted in business schools. However, the same can be said for psychology departments. If anything, the data indicate that many of the authors made their focal research contributions while in psychology departments and then subsequently moved to other departments.

The decrease over time in psychology affiliations suggests that at the very least, there is indeed a migration of I-Os out of psychology departments. However, when we dug deeper into the data and examined the actual movement of individual I-Os, we found that the increasing gap between business and psychology faculty may *not* be directly attributable to I-Os moving into business schools. Of the 60 psychology-affiliated authors at the time of publication, only 11.7% (7) later shifted to a business/management department. However, more of these authors, 28.3% (17), moved into non-psychology, non-business fields; that is, the vast majority of these authors became industry and consulting practitioners. (See Figure 1 for the patterns of movement among psychology, business, and other affiliations.) Hence, the biggest shift of I-Os is not to business/management departments, but out of academia and into practice—a trend perhaps assumed but not previously documented.³ This movement of widely cited I-Os into practice may be creating a research void that would naturally be filled by business school academics. What we are observing today may be a product of this movement. In other words, while Aguinis et al. (2017) have identified *a* trend, additional analysis has highlighted an arguably *more important* trend that explains the movements of I-Os that we see now.

As mentioned above, some of the widely cited authors were graduate students at the time of publication. They may have engaged in research while in school but already knew that they would pursue a different track in the future. To account for any potential effects of status (student versus non-student), we conducted a supplemental analysis to identify the authors who worked on a high-impact publication while in a PhD program. We determined that 12.5% (19) of the authors were graduate students at the time of publication but that only 3.9% (6) were students who would go on to change departmental affiliations post-degree. Such a low frequency suggests that the migration observed in this sample was not due entirely to the inclusion of graduate students.

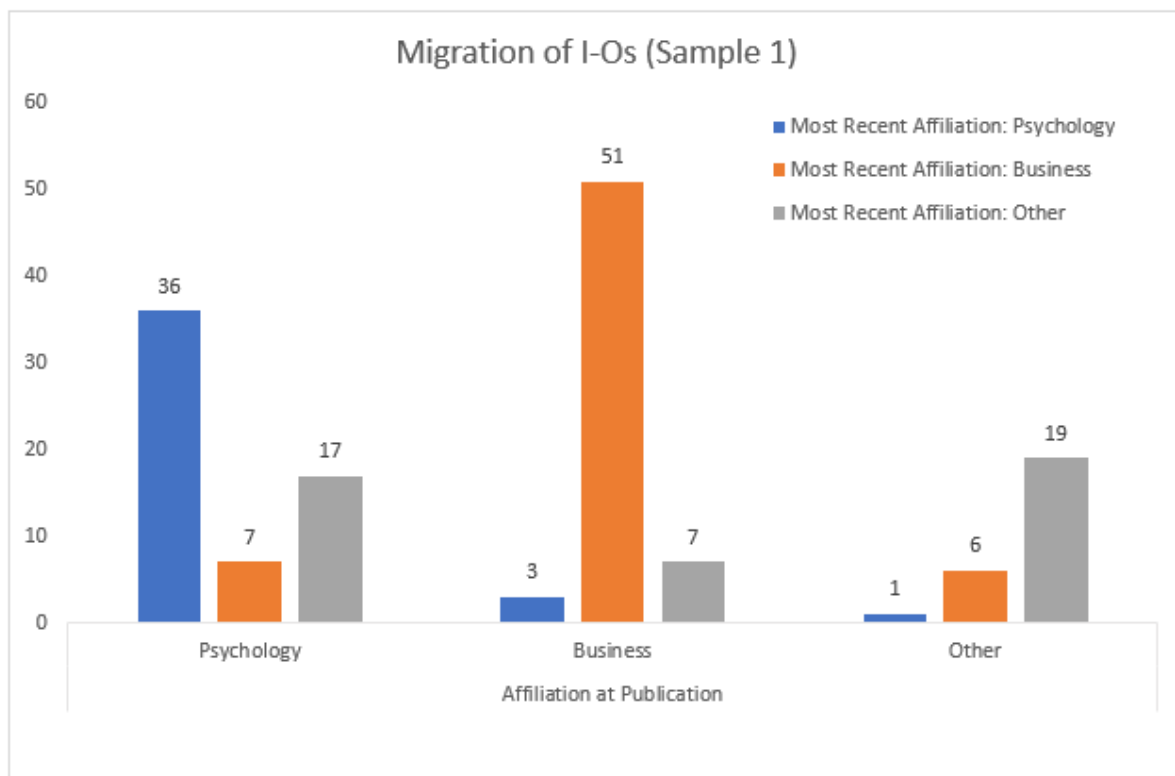


Figure 1. Tracking the authors of the most cited publications in popular I-O psychology textbooks: time-of-publication and most-recent departmental affiliations.

Sample 2: The most cited authors in I-O textbooks. One possible limitation of evaluating Sample 1 is that while the number of authors per publication may vary and co-authors may differ in their overall contributions to the I-O/OB field, every author received equal weight in the analysis. Also, we saw that a popular career trajectory is for I-Os to leave academia and move into practice, but what about successful career academics? We therefore examined the 178 most cited authors *overall* among the six popular I-O psychology textbooks, representing the top 2% of all cited authors.⁴ Aguinis et al. (2017) listed every author along with their current or most recent departmental affiliation, but not the affiliation when the author published his/her most high-impact work. Hence, we found the most impactful articles for each of the 178 authors by using Web of Science’s citation index and identified the author’s affiliation at the time of each article’s publication.

What we found was striking: 48.3% (86) of the authors were affiliated with a psychology department, 48.3% (86) were affiliated with a business/management department, and 3.4% (6) were affiliated with other departments or non-academic institutions (which we will refer to as “Other”) at the time of publication of their most influential article. This equal psychology–business split is dramatically different from the distribution of current affiliations that Aguinis et al. (2017) observed: 58% with business/management and 34% with psychology. Taken together, the results also depict a similar trend as seen in Sample 1. Namely, both psychology and business programs have significantly contributed to the volume of impactful research and researchers in our field, and many I-Os have conducted meaningful research while in psychology departments and later moved to other departments or career paths. This suggests that those who shift to business schools may often do so after they have already established a name for themselves. Therefore, while Aguinis et al. predict that business schools will have greater in-

fluence on the training of I-Os than will psychology departments in the future, our data points to I-O programs maintaining a substantial role—especially with respect to early career development.

In sum, we agree that there is a drain of I-Os from psychology departments, but it is mainly I-Os moving to practice with a *smaller* percentage moving to business departments. Of those who have migrated directly from I-O to business/management programs, many have done so as a mid- or late-career shift—that is, after already having achieved success and recognition as an IOP. Our data do not address *why* they have left psychology, but we know there are a variety of reasons, such as economic, personal (e.g., location), prestige related, and new career experience related. We have all spoken with colleagues who have moved from psychology departments to business schools, and who have essentially said, “I’ll be doing exactly the same thing as I was doing before—I’ll just be making more money/living closer to family/more recognized for the work I do, etc.” However, in light of recent points raised about gender and racial diversity within our field (Gardner et al., 2018; Leung & Rainone, 2018), we question whether this migration pattern looks the same for I-Os of all backgrounds.

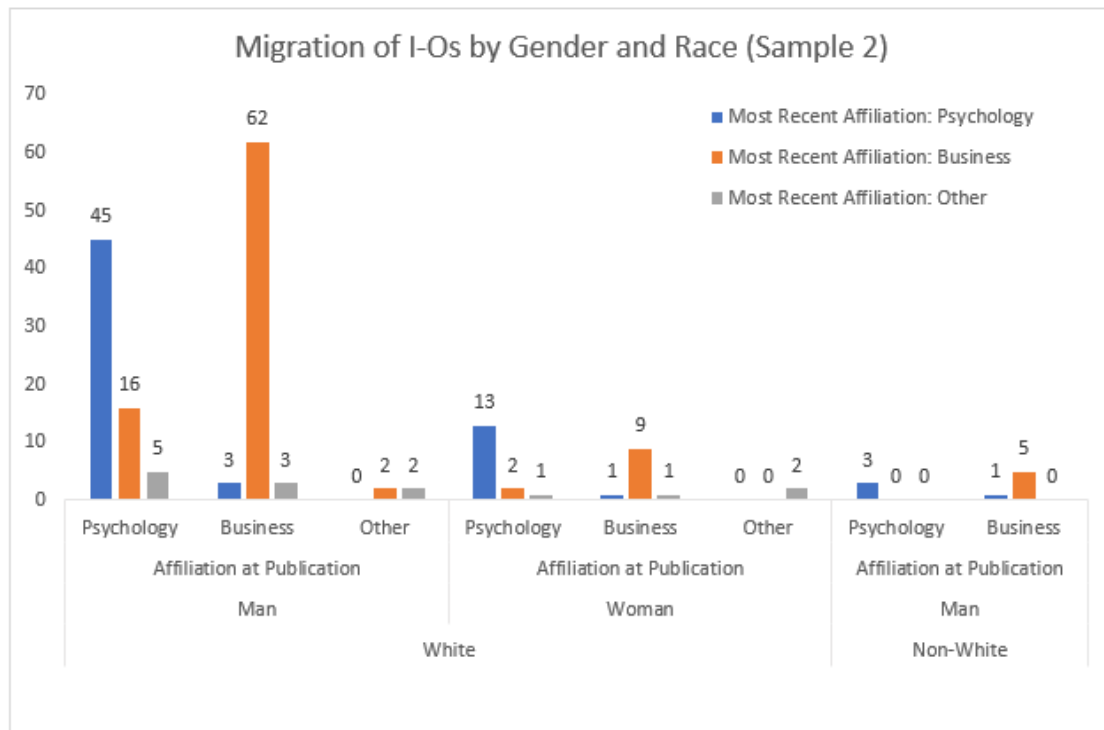
Unintended Consequences That Migration Poses for Gender and Racial Diversification Within Our Field

As Gardner et al. (2018) recently pointed out, there are a number of areas in our field (e.g., publications in top journals) where women remain underrepresented. Similarly, Aguinis et al. (2017) noted that only 17% of the most cited authors in I-O textbooks were female. Since recent findings suggest that academics in business/management departments have a wider gender pay gap when compared to other typical career paths of I-Os (e.g., academics in psychology departments, consulting, nonprofit, government; Richard et al., 2018), it is particularly important to consider how gender diversity interacts with the migration issue. Additionally, as others have pointed out (e.g., Avery & Hysong, 2007; Leung & Rainone, 2018), racial and ethnic minorities—especially women of color—are underrepresented in I-O psychology. As such, we examined the unintended consequences of this migration issue for both gender and racial diversity in our field using an intersectional approach.

We focused on the influential (i.e., most cited) authors from Sample 2 because a sample of predominantly career academics was determined to be most appropriate for highlighting how gender and race interact with the psychology-to-business migration issue. We coded each author’s gender and race using public photos and bios on program websites.⁵ Consistent with the findings of Aguinis et al. (2017), 16.29% (29) of the 178 authors in Sample 2 were coded as female and 83.71% (149) as male. Additionally, 5.11% (9) of the authors for which we were able to code race were identified as minority men.⁶ It is important to note that *no* authors in this sample were identified as women of color.

We crossed the data we already had on author affiliations with the demographic characteristics of the authors. Results are summarized in Figure 2. Out of the 29 female authors, 55.17% (16) were affiliated with psychology departments at the time of publication of their most influential article, while 37.93% (11) were affiliated with business/management departments. 6.90% (2) of female authors had an affiliation at publication that was coded as Other. By comparison, 48.28% (14) of these authors were most recently affiliated with psychology, 37.93% (11) most recently with business/management, and 13.79% (4) most recently with Other. In terms of movement, two female authors migrated from psychology departments to business schools (6.90%), while one migrated from business to psychology (3.45%) and one migrated from psychology to Other (3.45%).

Out of the 149 male authors, 46.98% (70) were affiliated with psychology departments at the time of publication, while 50.34% (75) were affiliated with business/management departments. 2.68% (4) of



Note. Non-white women are not included in this chart because there were no minority women in Sample 2.

Figure 2. Tracking the most cited authors in popular I-O psychology textbooks: time of publication departmental affiliations, most recent affiliations, gender, and race.

male authors had an affiliation at publication that was coded as Other. By comparison, 34.90% (52) of these authors were most recently affiliated with psychology, 58.39% (87) most recently with business/management, and 6.71% (10) most recently with Other. In terms of movement, 17 male authors (11.41%) migrated from psychology departments to business schools, while 4 (2.68%) migrated from business to psychology and 5 (3.36%) migrated from psychology to Other.

Out of the 9 minority male authors in Sample 2, 33.33% (3) were affiliated with psychology departments at the time of publication, while 66.67% (6) were affiliated with business/management departments. By comparison, 44.44% (4) of these authors were most recently affiliated with psychology, and the other 55.56% (5) with business/management. As the numbers suggest, none of the minority male authors migrated from psychology departments to business schools, although one author in this group migrated from business to psychology (11.11%). Since there were no minority women on the list, migration data could not be examined for this demographic.

These results indicate that more male than female highly cited I-Os have migrated to business schools. Statistical significance testing of Sample 2 finds that men are *marginally* more likely than women to ultimately attain membership in business/management programs, $b = .76$, $Wald = 2.96$, $p = .09$, odds ratio = 2.13. Combining the greater odds with greater overall male representation, however, in terms of sheer numbers this can create a large imbalance favoring men within such programs. In addition, the inclusion of race in our analyses reveals that it is particularly white men in this group who have migrated to

business schools. The migration rate appears lower for white women and minority men, while there were *no minority women even represented on the list of most cited authors*. This is a notable (and concerning) finding that further highlights the importance of taking an intersectional approach to gender and race when examining diversity within our field.

In sum, our findings suggest that there is a lack of gender and racial diversity not only among highly cited I-Os, but especially among those I-Os who have migrated to business schools. Given the growing importance of faculty in business/management programs to the publication of research in top journals such as *JAP* and *PP* (Aguinis et al., 2014), limited gender/racial diversification within such programs may have ripple effects across our entire field. Here, it is worth noting that the pipeline of talent in business schools also has fewer women than the pipeline in I-O psychology departments. According to the National Center for Education Statistics (2017), women earned 70% of bachelor's degrees, 68% of master's degrees, and 62% of PhDs in I-O psychology in 2016. At the same time, women earned 47% of bachelor's degrees, 44% of master's degrees, and 46% of PhDs in business, management, marketing, and related support services. Because highly cited I-Os are predominantly white men, productive I-Os moving to business schools to mentor and train fewer female and/or minority students and the concern of I-O diminishing in reputation within psychology departments may cause the urgent demographic imbalance to increase (see Aguinis et al. 2017, and Gardner et al. 2018). Further, and more importantly, impactful work psychology research may increasingly centralize among a core group of (relatively) demographically homogeneous researchers.

Conclusion

Our findings suggest that I-Os are indeed migrating out of psychology—however, it seems that more I-Os are moving into careers in practice than into business/management. Those who have moved to business/management have tended to do so in the later stages of their careers, and our results suggest that this group is largely made up of white men. It should be noted that our analyses do not shed any light on *why* prominent I-Os are migrating out of psychology or why white men more often attain coveted positions in business schools than do women and/or minorities. Furthermore, our data speak to the status of current star performers in our field but may not reflect future changes in trends with respect to tomorrow's stars. Nevertheless, the migration issue does not appear to be going away anytime soon, so it is important to start a SIOP-level discussion in order to identify possible strategies for dealing with this.

Although individual I-Os can choose to move away from psychology, there are things that I-O as a field and SIOP can do to support the work that is coming out of psychology departments. The first step is simply to generate awareness for what might be lost with this possible shift. In some ways, this is already taking place through avenues such as the *Organizational Frontiers* series (which has made cutting-edge I-O theory and research accessible to a wider audience). SIOP can also continue to pursue a more deliberate and strategic integration with the American Psychological Association and the Association for Psychological Science. Increased efforts to introduce I-Os to other fields of psychology—such as joint symposia, workshops, and seminars—will encourage the kinds of conversations that lead to valuable interdisciplinary research. Furthermore, SIOP may choose to invest in grants to support I-O research coming out of psychology departments. This suggestion is similar to one enacted within the medical community, where doctors are financially encouraged to practice in small communities after medical school.

Finally, both business schools and psychology departments should proactively address the shift in gender and racial dynamics that may otherwise result from the migration of I-Os out of psychology. In order to do this, we must get at the heart of the matter. It is not so much that women and minorities are discouraged

from entering our field but that they are underrepresented in the advanced ranks—à la the “leaky pipeline” (e.g., Gardner et al., 2018; Huffman, Howes, & Olson, 2017). To the extent that business school positions are a mid-to-late career “prize” for many I-Os and represent advanced status, here is where the leaky pipeline can certainly manifest. We therefore echo the suggestions already made by other scholars with regards to fixing the leaks and evening the playing field. For instance, Aguinis, Ji, and Joo (2018) recommend that departments implement fairer and more transparent hiring/promotion policies, mentoring programs to facilitate the career advancement of women, and cluster hiring if appropriate (i.e., hiring multiple scholars based on common research interests) to foster greater diversity. Clearly these are not the only actions that can (and should) be taken but are at least a step towards making sure different backgrounds and perspectives are well represented. With the current state of national affairs being one where women of color and other minority groups are too often ignored and denigrated, I-O and business/management need to set a good example by working together for greater inclusivity in our field.

Notes

¹ See Table 3 of the Aguinis et al. (2017) article.

² We were unable to identify the current affiliation for 5 authors, so we excluded them from our analysis.

³ Interestingly, 5% (3) of the authors moved from business/management to psychology departments.

⁴ See Table 4 of the Aguinis et al. (2017) article.

⁵ Coding pictures to determine race has been used previously to examine the demographic composition of our field (e.g., Leung & Rainone, 2018). However, we do recognize that there is room for ambiguity, and this may lead certain numbers to be imprecise.

⁶ We were not able to obtain pictures for two of the authors in Sample 2.

References

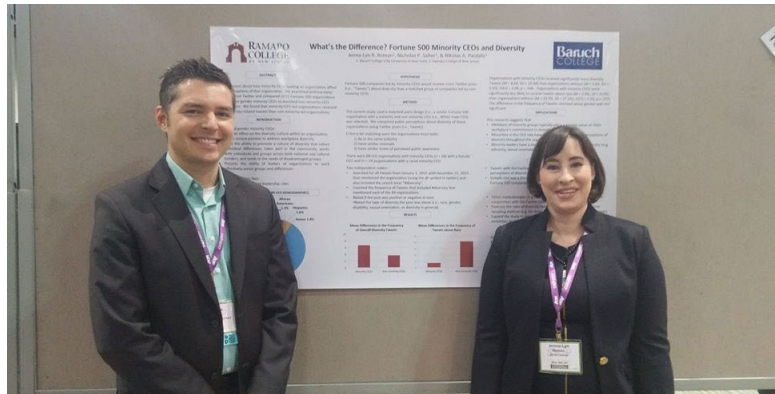
- Aguinis, H., Bradley, K. J., & Brodersen, A. (2014). Industrial-organizational psychologists in business schools: Brain drain or eye opener? *Industrial and Organizational Psychology*, 7(3), 284–303.
- Aguinis, H., Ji, Y. H., & Joo, H. (2018). Gender productivity gap among star performers in STEM and other scientific fields. *Journal of Applied Psychology*, 103(12), 1283–1306.
- Aguinis, H., Ramani, R. S., Campbell, P. K., Bernal-Turnes, P., Drewry, J. M., & Edgerton, B. T. (2017). Most frequently cited sources, articles, and authors in industrial-organizational psychology textbooks: Implications for the science–practice divide, scholarly impact, and the future of the field. *Industrial and Organizational Psychology*, 10(4), 507–557.
- Avery, D. R., & Hysong, S. J. (2007). A look in the mirror: Examining the ethnic/racial composition of our society. *The Industrial-Organizational Psychologist*, 45(1), 65–70.
- Gardner, D. M., Ryan, A. M., & Snoeyink, M. (2018). How are we doing? An examination of gender representation in industrial and organizational (I-O) psychology. *Industrial and Organizational Psychology*, 11(3), 369–388.
- Huffman, A., Howes, S., & Olson, K. (2017). “This is our house!” Why are I-O psychologists losing at the gender disparity game? *Industrial and Organizational Psychology*, 10(4), 584–588. doi:10.1017/iop.2017.59
- Leung, D. W., & Rainone, N. (2018). Where are the women of color in I-O psychology? *Industrial and Organizational Psychology*, 11(3), 433–439.
- National Center for Education Statistics (2017). *Digest of education statistics, 2016*. Retrieved from https://nces.ed.gov/programs/digest/2016menu_tables.asp
- Richard, E. M., Wright, N., Thomas, S., Wiggins, A., DuVernet, A., Parker, B., & Davison, K. (2018, January). Revisiting the 2016 SIOP Income & Employment Survey: Gender pay gap. *The Industrial-Organizational Psychologist*, 55(3). Retrieved from <https://www.siop.org/Research-Publications/Items-of-Interest/ArtMID/19366/ArticleID/1430/Revisiting-the-2016-SIOP-Income-Employment-Survey-Gender-Pay-Gap>

The SIOP Ambassador Programs Helps Conference Attendees Make a Connection

Jenna-Lyn Roman
Ambassador Program Communications Lead
SIOP Membership Committee

I distinctly remember when I registered for my first SIOP conference in 2015 and deciding to check the box to participate as a newcomer in the Ambassador Program. At that time, the program allowed you to choose your ambassador, so I picked someone who lived in the city I was moving to the following fall for my master's program. My ambassador, **Nicholas Salter**, and I had a long phone call to prepare me for the conference. He provided me with a lot of pertinent advice on how to navigate my first annual conference and make the best decision about which program to attend for my master's degree. Now that I serve as an ambassador, I try to impart the advice that was handed down to me to my newcomers and pay it forward. Choosing to be involved in the Ambassador Program as a newcomer and an ambassador has been an extremely rewarding experience for me and has facilitated my making important professional connections and feeling like I belonged at the SIOP conference.

In speaking with other newcomers, many of them would agree and have shared experiences regarding the program. Newcomer **Tim Oxendahl**, researcher at Oregon Health and Science University, said, "I thoroughly enjoyed being able to ask questions to an experienced practitioner and gain a better understanding of the field as a whole." In a similar statement **Dehlia Mahoney**, graduate student at Montclair State University, noted that "getting to speak with my ambassador prior to the conference helped me have a better idea of what to expect."



*Nicholas Salter and Jenna-Lyn Roman (2015 Ambassador and Newcomer respectively) presenting a poster at the 2017 SIOP Annual Conference in Orlando, FL.
(Photo Credit: Christina Falcon)*

Our ambassadors enjoy the program as much as our newcomers. **Kali Thompson**, Compensation analyst at HCA Healthcare says she "loves how intentional the Ambassador program is about starting the SIOP experience off with building relationships." She says that "this program has been a foundational piece of her involvement in SIOP." Although she initially participating in the program as a newcomer, after a few years she "wanted the chance to give back to first time attendees and share her experiences with Newcomers." **Anna Hulett**, Strategic Human Capital consultant at Booz Allen Hamilton, "has had great experiences in the past and even ended up being a coworker and good friend" with someone she met through the Ambassador Program. She thinks that "mentorship-based programming like this is crucial for SIOP and the kind of community we want to create!" **The Ambassador Program: We'd love you to participate!**

Our newcomer base continues to remain strong with over 25% of SIOP conference attendees who are first-time newcomers participating in the program. With the annual conference growing every year, SIOP can be a very overwhelming experience, particularly for those who are new to the event. Since

2010, the SIOP Ambassador Program has supported our newest attendees by matching them with previous conference attendees willing to share what they've learned.

Serving as an ambassador is a **relatively small commitment** of time that can have a **tremendous impact** on first-time SIOP attendees, including providing a positive introduction to the SIOP community. Anyone wanting to participate as an ambassador or newcomer can sign up within the 2020 SIOP Annual Conference registration process, which opens in mid-December. We encourage everyone from graduate students who are more advanced in their programs, recent graduates in academic or applied jobs, or more veteran SIOP members to consider showing a first-time SIOP conference attendee the ropes.

A table with the program requirements for each role can be found below.

Ambassadors	Newcomers	Program requirement
✓	✓	Registered for 2020 SIOP Annual Conference
✓		Has already attended at least one annual conference
	✓	Attending for the first time
✓	✓	Agree to follow all program expectations
✓	✓	Provide information needed for matching process
	✓	Review available Ambassadors and select preferred match
✓		Confirm Newcomer match invitation
✓	✓	Connect by email or phone at least once before the conference
✓	✓	Meet at least once in person at the conference

If you plan on being a part of the Ambassador Program, you may want to arrange your conference travel so that you don't miss our events designed just for you:

Event	Day/date	Time
New Member Education Session	Wednesday, April 22, 2020	4 – 5 pm
Newcomer Reception	Wednesday, April 22, 2020	5 – 6 pm
Ambassador Coffee Break	Thursday, April 23, 2020	10 – 10:30 am

We're very excited about the 2020 SIOP Ambassador Program and look forward to your participation! Keep an eye out for this year's program campaign and help us #MakeAConnection with someone new to SIOP. If you have any questions about the Ambassador Program contact us at siopambassador@gmail.com or visit our webpage <https://www.siop.org/Annual-Conference/Info-and-Resources/Ambassador-Program>

We'd love to hear your stories about being a newcomer or ambassador!

If you had an experience with the Ambassador Program that you would like to share or photos of you with your ambassador or newcomer, please email me at jroman33@gatech.edu. For example: Have you continued your professional relationship beyond the conference in which you met? Have you had research project or SIOP or other conference presentations with your ambassador or newcomer? Do you now work with your ambassador or newcomer?

**Searching for I-O Psychology:
How Practitioners, Academics, and Laypeople Engage With the I-O Brand Online**

**Bo Armstrong
Google**

**Gordon B. Schmidt
Purdue University Fort Wayne**

**Sayeedul Islam
Farmingdale State College/Talent Metrics**

**William P. Jimenez
Old Dominion University**

**Eric Knudsen
Glint**

A longstanding goal of SIOP has been to strengthen awareness and connections within the field of I-O psychology and with the general public. This goal has included initiatives such as SIOP Building Bridges: a program that has attempted to increase connections between the field of I-O psychology and those outside the field. This effort has also included initiatives to build connections between I-O psychologists, with one notable area being the effort to bridge the science–practice divide. Initiatives related to this include surveying practitioners about SIOP (Solberg & Porr, 2019) and creating membership classifications that help practitioners and master’s degree holders feel part of the I-O community. Previous work has also viewed the brand identity of I-O (Gasser et al., 1998), the issues of professional identity that play a part in branding (Ryan, 2003), and the relative fluidity of I-O skills in other industries and occupations (Knudsen, 2015).

Although various means are used to move these initiatives forward, one increasingly important tool has been the online environment. SIOP maintains an in-depth website, runs webinars, publishes online white papers, and has multiple social-media presences across multiple platforms. The Internet can be a powerful tool for connection, and most people across our field use the Internet and social media in their personal and professional lives. In order to maintain relevance in the future of work, I-O psychology must leverage the Internet to strengthen awareness of the field.

Previous research has looked at the brand identity of I-O in relation to other fields (Nolan, Islam, & Quartarone, 2014) but did not review the online presence of the field. SIOP and I-O psychologists more broadly might think we are investing in the right areas of online engagement, but some questions remain unanswered: Do those outside the field currently interact with the field in those ways? Is the general public searching for tools and help in a way that fits where and how SIOP and its members are offering them? This can be true as well for those in practice. For practitioners, Solberg and Porr (2019) found that current SIOP social-media use was viewed as not particularly valuable and that many potentially valuable online resources and initiatives were not well known (Rose, Force, McCune, Spencer, & Rupprecht, 2013; Rose et al., 2014).

With such concerns, we felt it was important to begin the examination of how people inside the field of I-O psychology and those outside of the field engage with I-O psychology online and on social media.

This study did so in two ways. The first was by looking at search engine patterns and search history related to I-O psychology, with the goal of answering questions like: How do people search for I-O psychology? How does I-O compare to similar fields? If we better understood search patterns, we could come up with solutions that help spread awareness of the field.

The second way was by looking at social-media hashtag usage related to I-O, with the goal of answering questions like: What hashtags do people use when talking about I-O? Is there confusion on what tags should be used versus hashtags endorsed by SIOP? How does hashtag use compare to similar fields? A deeper understanding of how social media is currently used could help SIOP, practitioners, and scholars to more effectively connect with those within the field (addressing the call made by Solberg & Porr, 2019) as well as those outside of the field. We can determine if I-O psychologists in the field need to be educated on the “right” hashtags to use (e.g., #SIOP2020 or #SIOP20) or if new decisions need to be made on what the “right” hashtag should be. Finally, we offer suggestions on future work still needed to understand how I-O psychology is engaged in and with online communities.

Google Trends Analysis

We in SIOP may know that I-O psychology is the premier field of study for workplace research and analysis, but what about the average person? When they want deeper insight into HR and organizational processes, where do they turn? If not to I-O psychology, then to where? What do we in SIOP need to do about it? In order to address these questions, we compared Google search terms for I-O psychology to tangential fields using Google Trends. Google Trends does not display absolute search volume but instead provides an index for the relative popularity of a search term for a given time and location compared to itself or other search terms. The index ranges from 1 to 100, with 100 indicating the peak popularity of the search term for the given location and time frame. A score of 0 indicates insufficient data (i.e., not enough searches). Interpreting this index is simple: a score of 100 is twice as popular as a score of 50. Google Trends provides the raw data in csv form but summarizes in line graph and bar chart forms, in addition to giving the average index score over a set period of time. As a disclaimer, we did not examine every possible pairwise comparison of search terms, only a select few (we will leave that follow-up analysis to curious readers).

Method

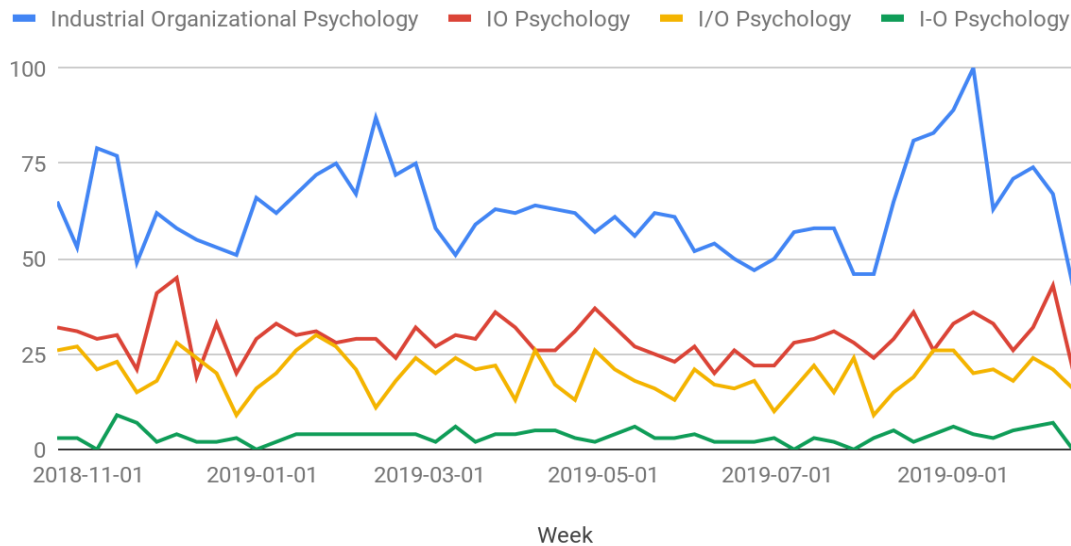
In order to compare Google searches for I-O psychology to other fields, we first needed to identify a single search term for comparison. Despite SIOP taking an official stance on branding (I-O psychology), numerous stylings of the term have emerged over time. We first compared four common formats: (a) industrial or organizational psychology, (b) IO psychology, (c) I/O psychology, and (d) I-O psychology. Search terms were compared over the past 12 months (as of October 2019) in both the US alone and worldwide.

Comparing Search Terms

Among the four terms examined, the popularity rank order was the same for the US and worldwide. We report only on the worldwide results here to be more inclusive. “Industrial organizational psychology” was the most popular, scoring an average of 63 across the year.

“IO psychology” was the second most popular, averaging a score of 29, half as popular as the first term. “I/O psychology” was third with an average score of 20, about one third of the popularity of the first term.

Worldwide Comparison



Finally, “I-O psychology”, the official brand chosen by SIOP, was fourth in popularity, averaging a score of 4 out of 100, about 15 times less popular than the first term. These results are visualized in the figure below.

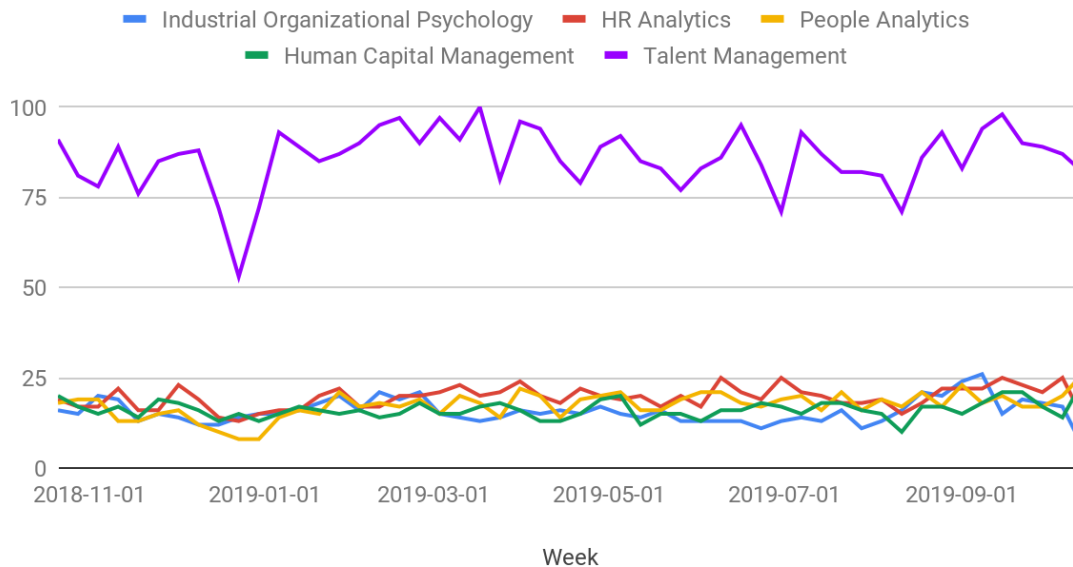
Results were further examined by region. Ten regions had available data for these four search terms, including Canada, India, Indonesia, Malaysia, Pakistan, Philippines, South Africa, the United Kingdom, the United States, and Vietnam. Six of these countries only searched for “industrial organizational psychology” and none of the abbreviations: Indonesia, Malaysia, Pakistan, South Africa, United Kingdom, and Vietnam. The other four countries all preferred searching for “industrial organizational psychology” the most, followed by “IO psychology” and “I/O psychology” respectively. Only the United States had sufficient search data for “I-O psychology” to obtain an index score (1% of all searches for these four terms).

For our comparisons of I-O psychology to tangential fields, we selected “industrial organizational psychology” as the representative search term for comparison, with the understanding that the gaps between terms would be greater for terms used less than this one.

Comparing Industrial Organizational Psychology to Similar Terms

We next compared five search terms: (a) industrial organizational psychology, (b) people analytics, (c) HR analytics, (d) human capital management, and (e) talent management. To our surprise, “talent management” was the most popular search term by a huge margin. Upon further consideration, we realized that “talent management” may also include references to sports or entertainment, so conclusions about this term in the general area of workplace science and analytics are unclear. “Talent management” was the most popular term with an average score of 86 over the past 12 months worldwide, followed by “HR Analytics” with a score of 19. This means that “talent management” is searched for over four times as much as the next most popular topic. Comparably, the popularity of the remaining search terms were all very similar to one another. “People analytics” came in third with a score of 17, and “industrial organizational psychology” and “human capital management” tied for fourth with a score of 16. These data are visualized in the figure below. Removing “talent management” from the comparison scaled the results

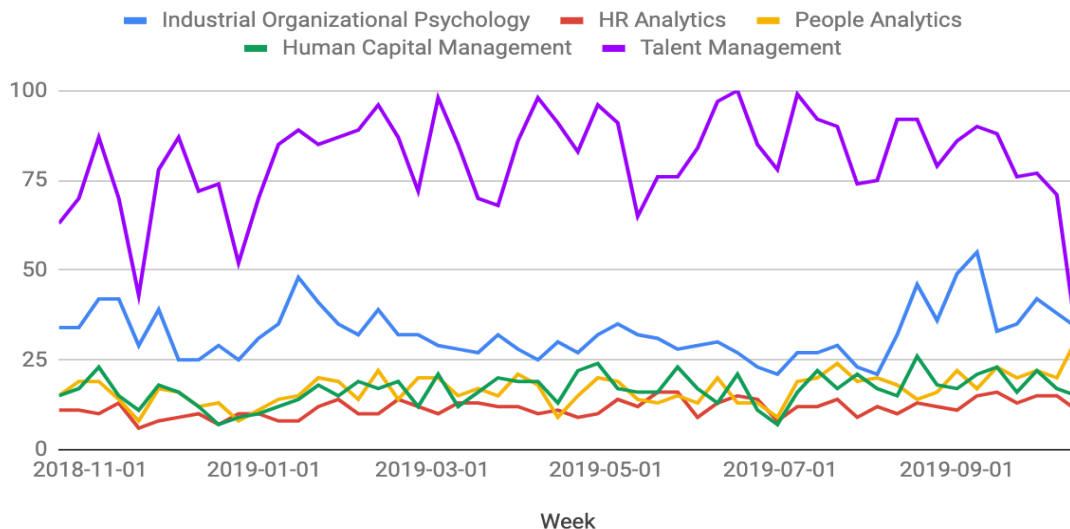
Worldwide Comparison



of the remaining terms in order to provide further nuance. “HR analytics” led with a score of 68, followed by “people analytics” (62), “human capital management” (58), and “industrial organizational psychology” (56).

Focusing on the US alone, the landscape is somewhat different. “Talent management” still led with a score of 81, but the second most popular term was “industrial organizational psychology” with a score of 32. “people analytics” and “human capital management” tied for third most popular with a score of 17, about half as popular as “industrial organizational psychology.” “HR analytics” was the least popular of these terms in the US with an average score of 11 out of 100. These data are visualized in the figure below.

United States Only



Other search terms that were considered but didn't quite compare to the above five in volume or relative popularity were "human capital analytics," "workforce analytics," and "HR science".

Takeaways

From these comparisons, we have drawn a few conclusions. First, despite the efforts of SIOP to consolidate our field under one term or abbreviation (I-O psychology), the rest of the world still uses a variety of other terms besides this one, which has implications for our branding and discoverability of our research. Second, there are other fields and brands of workplace research and analysis that are more popularly searched for online than industrial organizational psychology. Of course, we in SIOP know that all of these terms are basically synonymous, but the general public does not. Third, industrial organizational psychology seems to be relatively more popular in the US than many other terms but is relatively less popular worldwide. SIOP and I-O psychology as a field should give more attention to workplace research worldwide, especially as the next billion citizens of the world begin to come online and join the globalized workforce.

Social-Media Analyses

Whereas Google search queries might, in part, represent how the general public encounters online content germane to I-O psychology, social-media activity might represent more of an insider perspective on the field. For example, professional associations often encourage conference attendees to tag social-media content with specific hashtags (e.g., #AOM2020, #SHRM20, and #SIOP20, for the upcoming annual conferences of the Academy of Management, the Society for Human Resource Management, and SIOP, respectively; see Thoresen & Terry, 2019). Moreover, SIOP members are avid social-media users. In 2017, 94% of respondents who took the SIOP social-media survey (Armstrong, Poepelman, Thornton, & Sinar, 2017) reported that they used social media (e.g., Facebook, LinkedIn, Twitter) with 43% of respondents having reported engaging in social media in a professional capacity (e.g., profession-related discussion). Thus, in addition to analyzing Google Trends, we explored the popularity of I-O psychology on social-media platforms Twitter and Instagram.

Twitter Hashtag Analysis

In October 2019, we used online tool Hashtagify (<https://www.hashtagify.me>) to examine the popularity of Twitter hashtags associated with I-O psychology and related topics. With this tool, users can track a hashtag's popularity ("All-time Popularity" and "Recent Popularity" reported on a scale from 0 to 100 with lower ratings close to zero indicating that a hashtag is rarely used and higher ratings closer to 100 indicating that a hashtag is among the most popular on Twitter), related hashtags, and Twitter accounts who use the hashtag the most. Researchers have used Hashtagify in published peer-reviewed studies (e.g., Cavazos-Rehg et al., 2019, Turner-McGrievy & Beets, 2015) to understand hashtags and social-media usage.

First, we searched for #IOPsych as SIOP officially endorses this hashtag. This hashtag had an All-time Popularity score of 37.5. Among influential Twitter accounts that used this hashtag the most were two SIOPers (shout-out to @EvanSinar and @surveyguy2!), the Association for Psychological Science (@PsychScience), and SIOP (@SIOPtweets). Tweets tagged with #IOPsych mostly came from the United States (71.93%) and the United Kingdom (10.53%), with other countries (e.g., Canada, India, Spain) each accounting for less than 5% of the tweets.

Next, we compared #IOPsych to #IOPpsychology. The latter was a relatively less popular hashtag (All-time popularity = 24.4). With regard to global use of #IOPpsychology, half of the tweets came from the United States, and half came from Spain. Hashtags related to #IOPpsychology that were more popular did not include #IOPsych, but instead included #HR, #SHRM, and, interestingly, #Amazon and #USC. Twitter searches with Boolean syntax revealed that all of the tweets tagged with both #IOPpsychology and #Amazon entailed I-O-related discussion involving Amazon (e.g., organizational culture, compensation), and all of the tweets tagged with both #IOPpsychology and #USC were associated with start-up consulting firm AGL & Associates (@AbnormalGroup), which largely comprises graduates from the University of Southern California's Master of Science in Applied Psychology Program. Given its higher popularity and SIOP's adoption, we recommend the use of #IOPsych over #IOPpsychology.

We then decided to compare #IOPsych to four hashtags that, according to Hashtagify, were related yet more popular (as of October 2019): #leadership (All-time popularity = 78.6), #BigData (All-time popularity = 76.7), #HR (All-time popularity = 73.4), and #OrgDev (All-time popularity = 40.9). As a set compared to #IOPsych, these hashtags were used across a wider spread of countries and contexts. Perhaps these hashtags—with the exception of #OrgDev, which is only slightly more popular than #IOPsych—are more popular given that they refer to broader topics that cut across various contexts and disciplines rather than a discrete field.

Instagram

As an extension of our analysis on I-O psychology in social media, we studied the Instagram presence of three large professional organizations directly or tangentially connected to I-O psychology: SIOP, SHRM, and ATD. Using an online analytics tool (www.ninjalitics.com), we captured a number of metrics for each organization, including: account age, number of posts, post rate, “followers” and “following” counts, and average likes. As of this writing, SIOP's Instagram has been least active, with only 23 posts and a life-time post rate of 0.7 posts per week. In contrast, SHRM's Instagram has 380 posts and a post rate of 2.2 posts per week. Finally, ATD's Instagram post count is 333 at a rate of 1.9 posts per week. Further, SIOP also has the lowest Follower/Following Multiple (number of followers divided by number of following) at 7, compared with SHRM's 53 and ATD's 8. In terms of latest activity, SIOP had not posted in nearly three months, versus just 1-2 days for both SHRM and ATD. These insights converge around an anecdotal conclusion that SIOP does not appear to heavily utilize Instagram as a medium for marketing or outreach. In contrast, SHRM and ATD seem to maintain steady, active presences on Instagram.

When using the tool to further review hashtags used by these organizations, two unique strategies seem to emerge. ATD and SIOP both had top-five most common hashtags that were direct call outs to related events or initiatives (e.g., #ATD2020, #ATDMemberWeek, #SIOP19, #washingtondc). Notably absent from SIOP's top-five hashtag list was #IOPsych, whereas SIOP instead seems to leverage #iopsychology on Instagram. SHRM's top hashtags were not always direct call outs to their own organization but appeared to be slightly more generalizable in nature (e.g., #HR, #AskHR, #Leadership, #MyWorkCulture).

Instagram seems to be an underutilized platform across the I-O-psychology discipline. Opportunities to improve engagement on the platform include increasing post volume to inspire a stronger and more regular presence in the Instagram conversation, which could have the added benefit of highlighting the active nature of the I-O field. Further, better aligning SIOP's Instagram hashtags to those used on platforms with higher I-O engagement (e.g., Twitter) could help to boost community interaction and presence on Instagram.

Conclusion

In this article we looked to review data on how the field of I-O connects with those inside the field and outside of it online and through social media. In our analysis of search engine use, we found the official designation for the field, “I-O Psychology,” is searched for significantly less than a number of other name variants, with the fully spelled out term “Industrial Organizational Psychology” being the most common. This suggests that when we consider outreach, we might consider using such terms in conjunction with “Industrial Organizational Psychology.” We also found a number of tangentially related HR terms that have a significantly greater volume of search and possibly awareness. The authors would recommend that SIOP continue its marketing efforts so that I-O psychology appears as well under these terms and could help lead online users to find the field and the value it brings.

Looking to social media, we found that the official hashtag of SIOP (#iopsych) is the most popular I-O psychology term but that there are a number of more popular related hashtags such as #HR and #leadership. Instagram remains a lightly used social-media platform for I-O psychology, but if SIOP desires more engagement, SHRM may act as decent model to follow.

Overall, our results offer an initial look into I-O psychology engagement online. These results can be used by SIOP and other I-O groups to help target future online outreach and engagement efforts with others in the field. Future work could examine in more depth particular platforms highlighted here or other social-media sites that were not currently examined such as LinkedIn and Facebook.

References

- Armstrong, B., Poeppelman, T., Thornton, J., & Sinar, E., (September 25, 2017) How SIOP members are using social media professionally: Survey results. *The Industrial-Organizational Psychologist*, 55(2). Retrieved from <https://www.siop.org/Research-Publications/Items-of-Interest/ArtMID/19366/ArticleID/1535/How-SIOP-Members-Are-Using-Social-Media-Professionally-Survey-Results>
- Cavazos-Rehg, P. A., Krauss, M. J., Costello, S. J., Kaiser, N., Cahn, E. S., Fitzsimmons-Craft, E. E., & Wilfley, D. E. (2019). “I just want to be skinny”: A content analysis of tweets expressing eating disorder symptoms. *PloS one*, 14(1), e0207506.
- Gasser, M., Whitsett, D., Mosley, N., Sullivan, K., Rogers, T., & Tan, R. (1998). I-O psychology: What’s your line. *The Industrial-Organizational Psychologist*, 35(4), 120-126.
- Knudsen, E. A. (2015, April). Building bridges: An occupational network analysis of I-O psychologists. Poster presented at the 30th Annual Conference of the Society for Industrial and Organizational Psychology. Philadelphia, PA.
- Nolan, K. P., Islam, S., & Quartarone, M. (2014). The influence of vocational training on the brand images of organizational consultants. *The Psychologist-Manager Journal*, 17(4), 245.
- Rose, M., Drogan, O., Spencer, E., Rupperecht, E., Singla, N., McCune, E., & Rotolo, C. (2014). I-O psychology and SIOP brand awareness among business professionals, HR professionals, faculty members, and college students. *Industrial and Organizational Psychology: Perspectives on Science and Practice*, 52(1), 154-162.
- Rose, M., Force, U. A., McCune, E., Spencer, E. L., & Rupperecht, I. E. A. (2013). Increasing IO and SIOP brand awareness among business and hr professionals: What’s the baseline? *Psychology (SCP)*, 2, 14-1.
- Ryan, A. M. (2003). Defining ourselves: I-O psychology’s identity quest. *The Industrial-Organizational Psychologist*, 41(1), 21–33
- Solberg, E. & Porr, B. (2019). What do practitioners want? Practitioner survey results revealed! *The Industrial-Organizational Psychologist*, 57(2).
- Thoresen, P. H., & Terry, J. D. (2019). What's in a tag? A quick primer on #SIOP19. *The Industrial-Organizational Psychologist*, 56(3). <https://www.siop.org/Research-Publications/TIP/TIP-Back-Issues/563/ArtMID/25322/ArticleID/1317/What%e2%80%99s-in-a-Tag-A-Quick-Primer-on-SIOP19>
- Turner-McGrievy, G. M., & Beets, M. W. (2015). Tweet for health: Using an online social network to examine temporal trends in weight loss-related posts. *Translational Behavioral Medicine*, 5(2), 160-166.

The History Corner: Reflections on the SIOP 2019 Living History Series with Benjamin Schneider

Margaret E. Brooks
Bowling Green State University



This past April, Benjamin Schneider was featured in the 2019 SIOP Living History Series interview in National Harbor, MD. You can watch the video of the interview [here](#). Read on for a brief reflection on my experience talking with and interviewing Ben, and for some sneak peaks into what you'll learn about in the video.

This was my first time doing the Living History Series interview, and it occurred to me early in the process (but after I was already committed) that I had never done a live interview like this before. I had no idea what I was doing. It seemed sensible to organize the interview chronologically, and I could plan some of the questions in advance, but what if I underestimated how long Ben's responses would be and we only made it to age 30? Or what if he took the interview in an unexpected direction and I didn't know how to respond? I had never thought about the kinds of skills it might require to do this kind of interview well.

Luckily, I could not have asked for a better interviewee. Ben told us about his career, his personal life, and the history of I-O psychology. He was interesting and entertaining. We made it from childhood to the present, and even had time for some questions; and it is all available on SIOP's YouTube channel. Here are a few reasons to check out the interview:



- Learn how Ben narrowly missed careers as a Sears Roebuck Company store manager and an Army Airborne Ranger.
- Find out why Ben and (wife) Brenda call their son Lee the \$25 baby.
- Hear about a time when PhD programs had 10 comprehensive exams.
- Listen to some of Ben's thoughts about future directions for our field.
- Find out more about how family, friends, and colleagues impacted Ben's path.

Ben was generous with his time and his stories, and I enjoyed talking with him and learning about his career and some of the history of the field. Befitting of the author of "The People Make the Place," much of the interview focused on the people around Ben who shaped his life and career. He expressed gratitude for the places his career has taken him and the people along the way who helped him get there. As Ben said in the interview: "It's been a wonderful run."

Thank you to everyone who provided me with thoughts and reflections about Ben, to past Historian **Nathan Carter** for his helpful advice, and to the SIOP office for doing a great job recording and editing the interview. And most, I want to thank Ben for bearing with me on my first try at this. I am so glad he was willing to share his story with us.

It's Down to the Final Four

Milton D. Hakel
SIOP Foundation President

At the SIOP Conference in Austin, you're invited to attend an Ignite-style session featuring the four finalists for SIOP's first ever \$100,000 Visionary Grant.

We started last summer with 33 entries, in the form of Letters of Intent, coming from SIOP professional and student members. Each sent superb ideas about how to shape the future of work. Content ranged from visionary takes on the traditional mainstays of our field to imaginative and creative extrapolations seeking to unite IQ, EQ and AI.

The Letters of Intent were evaluated on these criteria:

- Is the project visionary, i.e., it looks to the future of work, brings I-O psychology into another realm, asks new questions, and/or engages with other disciplines?
- Does the project integrate the science and practice of I-O psychology?
- Does the project address a problem critical to the future of work or workplaces (for example, maximize organizational effectiveness or individual productivity or well-being)?
- Does the project have clear metrics for success, indicating how the project will change or advance praxis in I-O psychology? In other words, what metrics will be used to indicate that the project makes significant contributions? Can the project be accomplished in a year or close to a year?
- Does the project have the potential for facilitating subsequent work and/or additional funding?
- Is the requested funding reasonable and/or sufficient to accomplish the project?

Evaluations were averaged across criteria and raters, and a composite was calculated ($r=.83$) and then discussed to identify 10 semi-finalists. Full proposals of up to 15 pages, plus budgets, timelines, and staff bios, were received by September 3. The Visionary Grants Subcommittee of SIOP's Awards Committee evaluated these proposals in depth, selecting four finalists.

The finalists, listed in random order, are:

- **Robert B. Davison**, with Omri Gillath, Michael S. Branicky, Shawn Keshmiri, and Ryan Spaulding, *Enabling Peer-level Partnerships in Human-AI Teams*
- **Muriel Clauson**, *The Human Skills Project: A Future-Oriented Work Ontology Toolkit*
- **Jennifer M. Verive**, with **Jonathan Levine**, **Matt Reider**, and Sanket Chobe, *Play 2 Work: Constructing a Competency-Based Video Gaming Profile to Empower Gen Z Job Seekers*
- **Susan Ashford**, with **Brianna Caza** and **Brittany Lambert**, *Working Off the Grid: Building Resilience in the Gig Economy*

Finalists presentations at the 2020 SIOP Conference in Austin will occur on Thursday, April 23 in Lone Star Salon G at 3:30 pm. The winner of the Visionary Circle grant will be chosen by the 82 people who donated to the award. Voting by the donors will open at the end of the live session, and be available until noon CDT on Saturday, April 25. The winner of the inaugural \$100,000 Visionary Grant will be announced at the closing plenary.

The purpose of the Visionary Circle is to serve as a dependable and renewable source of grant funding for I-O research and development. It can bring a sea change for our applied organizational science, because:

1. The demand for and receptivity to evidence-based practice has never been higher.
2. I-O professionals are the masters of praxis – the synthesis of theory and practice without presuming the primacy of either. We all are applied scientists.
3. SIOP is a growing and evolving node of applied science, and thereby it will attract attention and support from private and public organizations as well as corporate and private foundations.

It's corporate and private foundations that I want to highlight here. Send or call me with your leads and ideas about how to pursue this. Attracting their attention can substantially enlarge the flow of resources invested in creating smarter workplaces.

The SIOP Foundation Trustees welcome your comments, suggestions, and creative imaginings. Our mission is to connect donors with I-O professionals to create smarter workplaces.

Milt Hakel, President, mhakel@bgsu.edu, 419 819 0936

Rich Klimoski, Vice-President, rklimosk@gmu.edu

Nancy Tippins, Secretary, nancy@tippinsgroup.com

Leaetta Hough, Treasurer, leaetta@msn.com

Adrienne Colella, Communications Officer, acolella@tulane.edu

Mirian Graddick-Weir, Trustee, mgraddickweir76@gmail.com

Bill Macey, Trustee, wmacey9@gmail.com

John C. Scott, Trustee, JScott@APTMetrics.com

The SIOP Foundation

440 E Poe Rd Ste 101

Bowling Green, OH 43402-1355

419-353-0032 Fax: 419-352-2645

E-mail: SIOPFoundation@siop.org

SIOP in Washington: Advocating for I-O in Federal Public Policy

Alex Alonso, SHRM
Bill Ruch, Lewis-Burke Associates LLC

Since July 2013, SIOP and Lewis-Burke Associates LLC have collaborated to make I-O science and research accessible to federal and congressional policy makers. SIOP has embedded a foundational government-relations infrastructure within the organization, enabling SIOP to develop an authoritative voice as a stakeholder in science policy in Washington, DC, and to promote SIOP as a vital resource for evidence-based decision making.

As Congress Punts Funding, SIOP Takes a Stand

Faced with another deadline to avert a government shutdown, Congress passed a second continuing resolution (CR) on November 21. The new CR extended federal funding until December 20. CRs lock in the previous year's funding levels for federal programs and do not allow the creation of large-scale new initiatives. This temporary funding status is particularly disruptive for the research community, who rely on consistent direction and support from federal agencies. To this end, SIOP joined over 160 universities, research institutes, and scientific societies to sign on to a letter to congressional leaders. The letter emphasized the importance of federal investment in research and development initiatives and warned of the adverse impact of uncertain funding on scientific progress. (*The complete letter can be found [here](#).*)

SIOP is an active member of the science advocacy community in Washington and signing on to the letter closely aligns with a key guiding principle for SIOP government relations to support workforce and workplace research. To this end, SIOP submitted [testimony](#) to the House Appropriations Committee earlier this year, urging Congress to support \$9 billion in funding for the National Science Foundation (NSF), as well as provide strong support for the Directorate for Social, Behavioral, and Economic Sciences (SBE), which funds a number of I-O research programs.

At the time of this writing, Congress has made some progress toward coming to agreements on funding amounts to finally solidify fiscal year (FY) 2020 appropriations. Still, political disagreements over issues such as the president's proposed wall on the southern border threaten to derail these negotiations. We will provide a full recap on the outcomes of these negotiations in the Spring 2020 edition of *TIP*.

Two New Advocacy Areas Launched

SIOP recently launched two new advocacy area working groups in the areas of defense and security and education and training, respectively. The advocacy areas will focus on advocating for the consideration of evidence-based I-O psychology as policymakers address the various challenges and opportunities related to these fields.

The new working groups will follow the same model as SIOP's Technology-Enabled Workforce Advocacy Area, Veterans Transition Advocacy Area, and the SIOP Policing Initiative. As with the other initiatives, the advocacy areas are supported by a working group of experts with deep understandings of I-O research and practice findings. The Defense and Security Advocacy Area will be led by **Dr. Reeshad Dalal** and the Education and Training Advocacy Area is headed by **Dr. Joe Allen**. Their working groups will further bridge SIOP's

capabilities with the government-relations expertise at Lewis-Burke to efficiently advocate for evidence-based I-O practices in the consideration of federal programs and policies in these realms.

After convening the working groups, the next step will be formally laying out SIOP's capabilities to share with policymakers through digestible [advocacy statements](#). We will share the finished statements in future editions of this column once complete.

SIOP Future of Work Advocacy Takes to the Hill

As previously reported, SIOP launched a new advocacy area on the technology-enabled workforce to provide member-driven support for advocacy for the consideration of evidence-based I-O psychology as policymakers address areas such as the impact of automation and new technologies on the workforce. There has been a flurry of activity in this space since the group was formed nearly a year ago, including several meetings with congressional offices this fall, as interest continues to grow in pursuing legislative solutions to address this multifaceted topic.

Over the past few months, SIOP's federal relations partners at Lewis-Burke have met with staff from the House Science, Space, and Technology (SST) Committee; the House Education and Labor Committee; and the office of Rep. Raja Krishnamoorthi (D-IL). Lewis-Burke also joined advocacy area working group member **Tara Behrend** for a meeting with staff from various congressional offices within the New Democrat Task Force on the Future of Work. Lewis-Burke targeted these offices for their interest in promoting sound, evidence-based policy reforms to address the future of work. The meetings are part of a larger strategy to inform policymakers of the importance of I-O psychology and encourage the inclusion of I-O principles in future legislation and deliberations. Lewis-Burke and the advocacy area working group are now in the process of providing feedback and analysis to congressional offices as needed.

As previously mentioned, working group efforts have ensured I-O consideration in legislation introduced in this Congress regarding artificial intelligence (AI) and the workforce. Lewis-Burke will be sure to provide updates on any outcomes of these and future engagements on this topic.

SIOP Advocacy 101

For those interested in learning more about SIOP Advocacy and how to leverage your personal advocacy in service of I-O psychology, we recommend attending SIOP 2020 in Austin, Texas. The Lewis-Burke team will be offering direct training to new advocacy area members and offering lessons learned during a session featuring SIOP GREAT Committee leaders Alex Alonso and **Kristin Saboe**—SIOP Advocacy 101: Making Your Voice Heard Where It Matters. This session will be held on Friday, April 24, 2020 @ 1:30pm in the JW Grand Salon 2. Don't be afraid to get involved during our upcoming annual meeting and make your voice heard.

For questions regarding SIOP advocacy, please feel free to contact Alex Alonso at alexander.alonso@shrm.org or Bill Ruch at bill@lewisburke.com.

**Advanced Professional Development:
A New SIOP Program for Experienced Professional Members**

**Rob Silzer
HR Assessment and Development, Inc./Baruch, Graduate Center CUNY**

Career and Professional Development for Practitioners Committee

Chair - **Lynn Collins**
BTS USA

One of the primary objectives of any professional organization is to provide ongoing training and development programs for professional members. This is done by APA, APS, AMA, and other well-known professional organizations. The existing system of professional licensing typically requires ongoing continuing education for professionals.

SIOP Practitioners Needs Surveys from 2008, 2015, and 2019 have all shown that SIOP members want SIOP to provide more programs that meet their professional needs and development (Oliver, Ferro, Napper, & Porr, 2015a; Silzer, Cober, Erickson & Robinson, 2008a; Solberg & Porr, 2019).

In the last 3 years, the Professional Practice Committees in SIOP have worked very hard to deliver numerous development programs and resources (see Silzer, Collins, Porr, Nagy & Morris, 2019). They have introduced 16 new programs and initiatives for practitioners and have expanded another 15 existing programs for practitioners. Table 1 outlines SIOP development programs for practitioners at different career stages, as offered by the Professional Practice portfolio and other SIOP committees.

Table 1
Professional Development Programs for SIOP Practitioners

Career stage	SIOP development programs
Early career practitioners	<ul style="list-style-type: none">• Early Career Practitioner Consortium• Speed mentoring programs for Practitioners• Group mentoring programs for Practitioners• Speed Benchmarking Program• SIOP Conference workshops• Leading Edge Consortium workshops• Leading Edge Consortium• Practitioner Career Exploration Program• Practitioner Networking Reception• Professional Practice Webinars

Mid-career practitioners	<ul style="list-style-type: none"> • Leading Edge Consortium • SIOP Conference workshops • Leading Edge Consortium workshops • Speed mentoring programs for Practitioners • Group mentoring programs for Practitioners • Speed Benchmarking Program • Practitioner Career Exploration Program • Practitioner Networking Reception • Professional Practice Webinars
Advanced, experienced practitioners	<ul style="list-style-type: none"> • Advanced Professional Development Program • Leading Edge Consortium • Practitioner Networking Reception

Practitioner members over the last 10 years have repeatedly asked for additional professional development from SIOP (Ferro, Porr, Axton & Dufman, 2016; Oliver; Ferro, Napper & Porr 2015b; Silzer, Erickson, Robinson & Cober, 2008b; Solberg & Porr, 2019). In the 2008 and 2015 surveys, members specifically asked for professional development in:

- Consulting skills
- Individual assessment skills
- Organizational assessment and program evaluation
- Coaching and developing others
- Leadership skills, such as influencing and motivating others
- Strategic skills, such as strategic thinking and planning
- Project management skills
- Professional communication skills, such as presenting, writing, and speaking in organizations

Few of these professional skill and knowledge areas are taught in I-O PhD graduate programs (Nagy, 2018) and are rarely taught in post-graduate professional training. Outside of Baruch, CUNY, there are no known programs that teach practice knowledge and hands-on skills in executive coaching and individual assessment (Nagy, 2018). This is distinct from SIOP workshops which focus on knowledge in I-O content areas (Silzer & Parson, 2014). Professionals pick up the skills and knowledge in these areas on their own, (Silzer, et al, 2008a) through post graduate career experiences and typically in an unstructured way.

Advanced Professional Development Program

In September 2018, Rob Silzer and **Milt Hakel** (Executive Board members) proposed an **Advanced Professional Development (APD) Program** (Silzer & Hakel, 2018) to provide in-depth advanced professional development for SIOP members on topics, skills, and practice areas that are central to their work. The program was unanimously approved by the SIOP Executive Board. That approval was based on the need expressed by members, coupled with the successful pilot course offered at the 2018 SIOP Chicago conference the previous April.

This is a critical, long term, strategic initiative by SIOP that is designed to

1. Address members' professional development needs

2. Engage, involve, and retain seasoned members
3. Build the knowledge and skill level for professional members and for the profession as a whole
4. Support the further evolution of SIOP into a leading professional organization that models our own professional advice we give to our organizational clients on how to build effective, successful, and sustainable organizations.
5. Raise the level of professional competence among our members while also raising the competence and skill level in our profession.

2018 and 2020 Program Offerings

At the request of **Gavan O'Shea**, SIOP Workshop Chair (2017-2019), the **Individual Leadership Assessment** course was piloted at the 2018 SIOP Conference in Chicago. Five highly experienced assessment psychologists (with an *average* of more than 35 years of leadership assessment experience) developed and delivered the first two course modules that provided advanced assessment insights and skills building experiences. The leaders included Drs. Rob Silzer, **Sandra Davis**, **John Fulkerson**, **Vicki Vandaveer**, and **Andrea Hunt**.

The course was designed for Practitioners with *extensive* leadership assessment experience. The participant group of 76 assessment psychologists (36 for Module 1 and 40 for Module 2; some participants took both modules) had an average of 15 years of assessment experience (Fulkerson & Silzer, 2018)

The course modules were the result of a collaborative effort between the five course leaders, the Professional Practice Portfolio, the SIOP Administrative staff, and the Workshop Chair and coordinators, particularly Gavan O'Shea, Rob Michel, and Alyson Margulies. The Individual Leadership Assessment course has four modules (each is a half-day session).

- Modules 1 & 2 were offered at the 2018 SIOP Annual Conference in Chicago
 - Module 1: Overview, Assessment Competencies & Context, Designing an Assessment Process,
 - Module 2: Leadership Assessment Interviewing skills
- Modules 3 and 4 are being offered at the 2020 SIOP Annual Conference in Austin
 - Module 3: The Secret Sauce: An Insider's Guide to Assessment Interpretation and Integration
 - Module 4: From Insight to Action: Advanced Approaches for Providing Assessment Feedback and Using it for Growth and Action

Enrollment in 2018 is not a prerequisite for registering for the 2020 modules. Participants who complete all four modules will receive a certificate indicating they completed the full course.

Future Directions

The goal for SIOP is to offer numerous ongoing advanced professional development courses. It is expected that at least two more advanced courses will be offered in the next few years. If SIOP members continue to register for advanced professional development courses then we expect that this program will continue for many years into the future.

References

- Ferro, M., Porr, B., Axton, T., & Dufmani, S. (2016). Practitioner professional development: Results from the 2015 Practitioner Needs Survey. *The Industrial-Organizational Psychologist*, 53(3), 114-124.
- Fulkerson, J. & Silzer, R. (2018). Survey of participants in the Individual Leadership Assessment Course, Modules 1 & 2, offered at the 2018 Chicago SIOP conference. Unpublished report.
- Nagy, M. (2018). I/O Psychology Graduate Program Survey results. Conducted by SIOP Licensing and Certification Committee. Society for Industrial and Organizational Psychology, Bowling Green, OH. Unpublished report.
- Oliver, J., Ferro, M., Napper, C., & Porr, B. (2015a). *2015 SIOP Practitioners Needs Survey technical report*. Bowling Green, OH: Society for Industrial and Organizational Psychology.
- Oliver, J., Ferro, M., Napper, C., & Porr, B. (2015b). Overview of the 2015 Practitioner Needs Survey. *The Industrial-Organizational Psychologist*, 52(1), 49–56.
- Silzer, R. F., Cober, R. T., Erickson, A.R., & Robinson, G. (2008a). *Practitioner Needs Survey: Final survey report*. Bowling Green, OH: Society for Industrial and Organizational Psychology.
- Silzer, R., Collins, L., Porr, B., Nagy, M., & Morris M. (2019). Professional practice committees are working for you. *The Industrial-Organizational Psychologist*, 57(2). <https://www.siop.org/Research-Publications/Items-of-Interest/ArtMID/19366/ArticleID/3164/Professional-Practice-Committees-Are-Working-for-You>
- Silzer, R. F., Erickson, A. R., Robinson, G., & Cober, R. T. (2008b). Practitioner professional development. *The Industrial-Organizational Psychologist*, 46(2), 39–56.
- Silzer, R. & Hakel, M. (2018). Proposal for Advanced Professional Development. Submitted to and approved by the SIOP Executive Board, September, 2018.
- Silzer, R. F., & Parson, C. (2014). SIOP workshops: Thirty years of professional development for SIOP members. *The Industrial-Organizational Psychologist*, 52(2), 37–46.
- SIOP. (2018). *Participant Evaluations of Pre-conference Individual Leadership Assessment Course, Modules 1 and 2*. Society for Industrial- Organizational Psychology, Bowling Green, Ohio. Compiled by Sirota, Inc.
- Solberg, E. & Porr, B. (2019), What do practitioners want? Practitioner Survey results revealed! *The Industrial-Organizational Psychologist*, 57(2). <https://www.siop.org/Research-Publications/Items-of-Interest/ArticleID/3179/ArtMID/19366>

**SIOP Conference, Austin, 2020:
All-New Individual Leadership Assessment Course**

**Rob Silzer
HR Assessment and Development Inc./
Baruch, Graduate Center, City University of New York**

**Sandra Davis
MDA Leadership Consulting**

**Vicki Vandaveer
The Vandaveer Group, Inc**

Save the Date > Wednesday, April 22, 2020

SIOP is introducing this as the first course under the new **Advanced Professional Development Program (ADP)**. This initiative is offered by the Professional Practice Portfolio to provide advanced professional development for experienced SIOP members.

This first ADP course is on **Individual Leadership Assessment** (see related article on the ADP Program in this issue of *TIP*).



The purpose of this course is to provide a development opportunity for experienced assessment psychologists to strengthen their assessment skills and techniques, and to learn from other highly experienced colleagues. This course is offered in four half-day modules.

The benefits to course registrants include:

- Further deepen your Individual leadership assessment skills and expertise,
- Get assessment insights and techniques from leading assessment experts,
- Improve your skills in collecting, interpreting, and integrating assessment data and in leveraging the results for providing feedback and converting to developmental actions, and
- Increase your awareness of best practices in leadership assessment.

At the Austin 2020 SIOP conference, two modules of the leadership assessment course will be [offered](#). Both modules are offered together as a full-day program registration at the Austin conference.

- **Module 3: The Secret Sauce: An Insider's Guide to Assessment Interpretation and Integration** (AM session)

This assessment course module reviews and discusses approaches to interpreting and integrating assessment data to reach assessment decisions and conclusions. It is a unique opportunity for experienced psychologist assessors to advance their own assessment skills and learn from other highly experienced assessors, as well as practice those skills.

Intended audience: Advanced/intermediate. Participants should have a solid understanding of assessment concepts, processes, and tools. The course is intended for SIOP members who have substantial leadership assessment experience and who are, or may be, eligible for psychologist licensing.

Course leaders:

- **Rob Silzer**, PhD, HR Assessment and Development Inc.; Baruch, Graduate Center, CUNY
- **Sandra Davis**, PhD, MDA Leadership Consulting
- **Vicki Vandaveer**, PhD, The Vandaveer Group, Inc.

- **Module 4: From Insight to Action: Advanced Approaches for Providing Assessment Feedback and Using it for Growth and Action (PM session)**

This assessment course module focuses on advanced approaches and techniques for providing assessment feedback, reporting assessment results, and outlining development action recommendations. It is a unique opportunity for experienced psychologist assessors to advance their own assessment skills, to learn from other highly experienced assessors, as well as to practice those skills.

Intended audience: Advanced/intermediate. Participants should have a solid understanding of assessment concepts, processes, and tools. The course is intended for SIOP members who have substantial leadership assessment experience and who are, or may be, eligible for psychologist licensing.

Course leaders:

- Rob Silzer, PhD, HR Assessment and Development Inc.; Baruch, Graduate Center, CUNY
- Sandra Davis, PhD, MDA Leadership Consulting
- Vicki Vandaveer, PhD, The Vandaveer Group, Inc.

This course is designed for experienced SIOP members who are eligible for psychologist licensing, because individual psychological assessment falls under most state licensing regulations. Further information about this course will be provided in forthcoming SIOP announcements, in future *TIP* issues, and on the [SIOP website](#). Any questions should be directed to Rob Silzer (robsilzer@prodigy.net). We anticipate that this 1-day program (both modules) will be fully subscribed.



The full leadership assessment course is being offered in four modules.

- Module 1 – Assessment design and overview
- Module 2 – Assessment Interviewing
- Module 3 – Assessment Interpretation and Integration
- Module 4 – Assessment feedback and development actions

Participants who complete all four modules will receive a course certificate indicating they completed the full course. The modules *can be completed in any order*.

The first two modules of this course were offered at the Chicago 2018 SIOP Chicago conference as a pilot. Both modules sold out early and received very strong positive evaluations from participants.

Chicago, 2018 conference, course outcomes (first two modules).

- Both modules were fully sold out ahead of time.
- Participants had an average of 15 years of individual assessment experience and conducted an average of 77 assessments each year. 76% of participants rated their assessment expertise as expert or highly experienced
- Participants expressed strong interest in completing the full course

Sample participant reactions

- Excellent and fast paced—should be a staple at any future SIOP conferences.
- Excellent session for experienced professionals. Content was relevant, leaders were expert. Participating in a session limited to experienced practitioners was very valuable in terms of discussion and using peers as resources—and I encourage SIOP to do more of this.
- Having an advanced practitioner's course was worth the registration fee.
- Wonderful to have experienced colleagues in the room, learning at a higher level from each other, and led by the wise sages.
- This was terrific as a first run for advanced and experienced assessors.
- This was a great start and, hopefully, this will launch future efforts to put individual psychological assessment on the SIOP docket for SIOP programs.
- We need to make this a staple of any future SIOP planning. I thoroughly enjoyed the experience.
- The idea of having a course certification in individual assessment is a great idea, and it would distinguish me from some of my competitors
- All of you are to be commended for doing such a fine job. It was a real act of leadership to get these modules on the program, and hopefully, all of us can help you build momentum going forward.

Conclusions from Chicago pilot

- Participants were very excited about the course before, during, and after taking the first two course modules
- Participants greatly appreciated going through an Advanced Professional Development Program with other advanced participants so they could learn from each other.

If you are an experienced assessment psychologist, please consider joining us in Austin for the next two modules of the Individual Leadership Assessment course.

Plan Now to Attend the 2020 SIOP Preconference Consortia!

Debbie DiazGranados
Consortia Chair

SIOP continues to create opportunities for networking and professional development at all career levels of our membership base. We offer programming relevant to students, junior faculty, and early career practitioners. On Wednesday **April 22, 2020** the SIOP Consortia Committee will host four (4) partially integrated consortia tracks that will help meet the educational and developmental goals of all in attendance. A primary goal of the Consortia is to provide a networking opportunity to graduate students, junior faculty, and early career practitioners embarking on their career paths. Thus, the 3-decade tradition continues of hosting consortia to graduate students (**Master's Consortium** and **Doctoral Consortium**), faculty (**Junior Faculty Consortium**), and our most recent addition, the **Early Career Practitioner Consortium**!



This four-part program provides a well-rounded, comprehensive career- and professional-development experience for the entire I-O pipeline. Consortia participants gain the benefit of information exchange and networking with others within the same career track AND similar stage of career. **This year we will have a reception for registrants; please join us!** Below are some highlights of this year's planned events.

Calling All Master's Students! Attend SIOP's Master's Consortium!



If you are a current student in a master's-degree program, are planning to attend SIOP 2020, and want to learn more about career options or prepare yourself for the job market, make sure to add the Master's Consortium to your conference agenda! The Master's Consortium is a developmental and networking event that includes a diverse set of I-O professionals who offer unique perspectives on the opportunities and challenges faced by I-O practitioners today. Speakers will focus on key developmental

experiences that can lay the groundwork for a successful career in industrial and organizational psychology with a master's degree, including topics like nailing your interview, first-job best practices, creating your professional brand, and career lessons from the trenches.

The day is highly participative and includes formal presentations by I-O practitioners, a Q&A-style panel with our speakers, informal networking opportunities with students from master's programs across the country, and behavioral-interviewing practice. Our impressive list of 2020 speakers include:

- **Emily Crowe**, MA, Consultant & **Erika Reckert**, MA, Director, Assessment Practice at BTS
- **Rachel Kennell**, MS, & **Michaela Fisher**, MS, Business Services Consultants at InVista Talent
- **Christopher Rosett**, MA, Senior Director at Comcast Cable

- **Kathy Stewart, MA**, Supervisory Personnel Research Psychologist at U.S. Customs and Border Protection

Each program can nominate up to two student representatives. Space is limited, so register now! If you are interested, be sure to let your program chair know and/or indicate your interest via a form provided when registering for SIOP!

Calling All Doctoral Students! Attend the Lee Hakel Doctoral Consortium!

The Doctoral Consortium is a developmental and networking event that includes a diverse set of I-O professionals who offer unique perspectives on the opportunities and challenges faced by both I-O practitioners and academics today. The Doctoral Consortium offers two tracks: applied and academic. Topics include surviving the dissertation, navigating the job process, and learning from successful early career academics and practitioners.

New this year, we are also inviting participants to submit a research idea (max. 2 pages) and receive personal feedback from an editor at one of our leading journals (e.g., *AMJ*, *JAP*, *JOM*, *PPsych*, *JOB*, *ORM*, *JBP*, etc.). This idea should not be your dissertation but looking ahead to your research pipeline post dissertation. Submitting a research idea is optional; the deadline to submit will be mid-March and more details will be sent to registered participants.



Each program can nominate up to two student representatives. Students must have passed comprehensive exams to be eligible to attend. Space is limited, so register now! If you are interested, be sure to let your program chair know and/or indicate your interest via a form provided when registering for SIOP!

Calling All Junior Faculty! Attend SIOP's Junior Faculty Consortium!



The Junior Faculty Consortium invites current and future junior faculty in departments of psychology and management to participate in a full day of career-focused activities and sessions. The program features opportunities for **networking** with junior faculty members from a diverse array of institutions as well as senior-faculty presenters that will share their respective research paths and stories about how they navigated their academic career.

The 2020 Junior Faculty Consortium will focus on the **art of successful teaching, making the switch to being a mentor, and surviving and thriving through the tenure-and-promotion process.** These sessions will include previous winners of the SIOP Distinguished Teaching Contributions Award, faculty who have recently gone through the tenure-and-promotion process, and faculty who have successful mentoring relationships.

The day will also include the following sessions:

- How to find data and build coauthor relationships that benefit applied and academic partnerships
- How to negotiate your job package and use startup funds
- Tips for finding and obtaining grants
- Special table discussions with journal editors to discuss presubmitted research idea as well as a question & answer session

Because the success of the Junior Faculty Consortium comes from interactive sessions with invited speakers, attendees should prepare questions prior to attending. Many attendees choose to attend the consortium multiple times to capitalize on new programming and information presented in subsequent years. If you (a) are a PhD student who has successfully proposed their dissertation, (b) are seeking an academic position for the Fall 2020 term, or (c) have accepted an academic position offer for Fall 2020, then you are eligible to participate. Space is limited; registration for this consortium is available when registering for the SIOP conference, so register early. We look forward to seeing you there!

Calling Early Career Practitioners! Attend *SIOP's Early Career Practitioner Consortium!*



Are you interested in how to set yourself up for career success? Need to figure out the connection between graduate-school courses and workplace realities? Wondering how to leverage your current role into a larger career? Do you want to connect and get mentoring from successful I-O practitioners?

Early career practitioners often find themselves navigating challenging realities of the working world not covered in many graduate programs. It's common to be uncertain about your career early on. The Early Career Practitioner Consortium (ECPC) will share insights for identifying

and leveraging your strengths or areas of development in your current work and connect you with accomplished I-O practitioners who can share their wisdom and guidance to propel your career forward.

Who Can Attend?

This 1-day career development experience is for I-O practitioners pursuing nonacademic careers, with **no more than 5 years of work experience** after their MA or PhD (graduation 2015-2020).

What's the experience like?

- Keynote presentation on creating a career plan that places your well-being at the center
- Complete leading personality and skill-based assessments
- Receive guidance on common challenges faced early in one's career
- Interact with seasoned I-O practitioners in mentoring and peer-coaching conversations
- Explore career trajectories through networking, peer coaching, and completing your career-development plan

The ECPC is here to start an ongoing conversation among I-O practitioners through SIOP. Submit your application today! [<https://docs.google.com/forms/d/e/1FAIpQLSd6S7N1wTUVDrfRCrSlcGINu1O-cf-n1PaCsAeJObqEvKVWwQ/viewform>]

Consortia occur the day before the SIOP conference, so plan now!

Participants must register prior to the conference and a fee is associated with each Consortium. Application to the Master's Consortium and the Doctoral Consortium is through nomination process; contact your program director and/or indicate your interest via a form provided when registering for SIOP. Registration for The Junior Faculty Consortium and Early Career Practitioner Consortium can be completed when registering for the conference.

Seating is limited across all consortia programs; you should register early! For more information about these programs, please contact the specific Consortia Committee members listed below.

Doctoral Consortium Co-Chairs: Emily Hunter at Emily_M_Hunter@baylor.edu or Kate Keeler at keeler.79@osu.edu

Master's Consortium Co-Chairs: Kelsey Stephens at kmstephens328@gmail.com or Matisha Montgomery at matisha.montgomery@ice.dhs.gov

Junior Faculty Consortium Co-Chairs: Alexander Jackson at alexander.jackson@mtsu.edu or Megan Nolan at mnolan@wcupa.edu

Early Career Practitioner Consortium Co-Chairs: Maya Garza at maya.garza@betterup.co or Rob Stewart at rstewamz@amazon.com

See you in Austin, TX y'all!!

Membership Milestones

Jayne Tegge

New Sterling Circle Members

Thank you for your dedication to SIOP.

Gary Adams
Natalie Allen
Steven Allscheid
Laurie Buchanan
Zinta Byrne
Carrie Christianson DeMay
Yochi Cohen-Charash
Bart Craig
Deborah Danzis
Catherine Daus
Kristl Davison
Eric Day
Juergen Deller
Jennifer Dembowski
Jill Ellingson
Amir Erez
Anna Erickson
Alison Eyring
William Farmer

Joan Finegan
Michael Frese
Scott Goodman
Gerald Goodwin
Alicia Grandey
Mary Ann Hannigan
Renee Hansen
Michael Helford
Leng Dang (Karina) Hui-Walowitz
Steven Hunt
Donna Huska
Michael Keeney
Jenifer Kihm
Stephanie Klein
Christopher LeGrow
Tim McGonigle
Patrick McKay
Douglas Molitor

Scott Morris
David Morris
Mary Anne Nester
Fred Oswald
Shane Pittman
Alberto Ramirez
Sylvia Roch
Steven Rumery
Donald Scott
Carol Shoptaugh
Maura Stevenson
Joseph Stewart
Eric Surface
Eric Sydel
Peter Warr
Laura Wolfe
Amy Wrzesniewski
Michael Zottoli

New Professional Members

Welcome to SIOP!

Shivangi Agarwal
Nelly Avila
Kim Binsted
Pam Boney
Justin Bown
Ethan Burris
Yessenia Cancel
Benjamin Carpentier
Mo Chen
Jack Ting-Ju Chiang
Barbara Cole
Amy D'Agostino
Edna Davoudi
Kathryn Devon
Pablo Diego-Rosell

Ben-Roy Do
Ginevra Drinka
Emma Edoga
Emily Ferrise
Austin Fossey
Francine Frese
Michael Geden
Margaret Giddings
Lesley Hernandez
Sumedha Jaggi
Smriti Jain
Michelle Johnston
Sheila Keener
Aylin Koçak
David Krackhardt

Vedika Kuttanda
Dora Lau
Curt Lawhead
Mike Lehman
Zehra LeRoy
Franziska Leutner
John Lipinski
Holly Magunson
Alex Marbut
Jaquelyn Marcinak
Neema Mbonela
Tiffany McDowell
Courtney McMahon
Jeremy Meuser
Rebecca Nader

Deepti Namjoshi
 Marvin Neumann
 Colin O'Farrell
 Matt Ohrt
 Mary Onyejose
 Evelyn Orr
 Joon Hyung Park
 Sandra Parsons
 Sarvangi Patni
 Eric Patton
 Glo Pereira
 Beatrice Piccoli
 Yvette Prior
 Edna Rabenu
 Snigdha Rai
 Karthiyayani Rajithkumar
 Gunika Renjen

Reginald Richards
 Matt Romond
 Kristi Romuald
 Claudia Rooman
 Gema Ruiz de Huydobro
 Abdulhafeez Salauddin
 Monica Scamardo
 Antje Schmitt
 Payal Sharma
 Matthew Sikorski
 Andrew Slaughter
 Austin Smith
 Sarah Smith-Barry
 Mary Starke
 Tara Strakalaitis
 Sarah Sullivan
 Albana Telhai

Karishma Thakur
 Shannon Thompson
 Jennifer Thorpe-Moscon
 Amber Tichenor
 Joellyn (Joie) Townsend
 Chou Yu Tsai
 Nico Tschöpe
 Wendelien van Eerde
 Michelle Van Laethem
 Asiyat Villalba
 Mary Waller
 Zheng Wang
 Jeremy Winget
 Thomas Zagenczyk
 Maria Zapata Guerrero
 Liwen Zhang
 Petr Zusis

New Associate to Member Pathway Members

Congratulations!

Adrian Buchner
 John Furcon
 Jared Riel



In my first year as a graduate student, fellow SIOP member **Michael Horvath** encouraged me to join SIOP, and I have been a proud member for nearly 2 decades. With each passing year, I am impressed with our leadership, strategy and innovation within I-O psychology. I find SIOP membership professionally and personally rewarding on multiple levels. Professionally, I love the resources SIOP provides (e.g., white papers, *TIP*), along with the opportunities for engagement within the society at large and at our annual conference; I appreciate the focus on member support and alignment with the changing nature of our field. On a personal level, I enjoy the connections with colleagues both old and new. The annual conference feels like a reunion, which I look forward to as a point of renewed connection. That noted, my absolute favorite part of SIOP membership is celebrating contributions of colleagues - it's always wonderful to see a grad school friend receive well-deserved recognition! I greatly value my SIOP membership, and I look forward to being a part of SIOP in the future.

Jeanie Whinghter

Members in the Media

Mariah Clawson

Awareness of I-O psychology has been on the rise thanks to articles written and featuring our SIOP members. These are member media mentions found from September 1, 2019 through January 1, 2020.

We scan the media on a regular basis but sometimes articles fall through our net. If we've missed your or a colleague's media mention, please [send them to us!](#) We push them on our social media and share them in this column, which you can use to find potential collaborators, spark ideas for research, and keep up with your fellow I-O practitioners.

Popular Press Topics

Sy Islam says its best to reward [behaviors](#), not just results.

Developing a [creative hobby](#) improves problem-solving at work according to **Kevin Eschleman**.

Daisy Chang and her team will examine the challenges related to [human resources decisions](#) brought on by autonomous vehicles in the workforce.

Nancy Doyle says noticing the positives of [neurodiversity](#) can be helpful for mental health and regaining focus and purpose.

Adam Grant's podcast, [WorkLife](#), may help you become a more informed professional in 2020.

Figuring out the [appropriate tools](#) and ways in which to share information is an important part in building resilient sales teams says Sy Islam.

Nathan Mondragon explains a [face-scanning algorithm](#) used to evaluate job candidates.

Employee Management, Motivation, and Turnover

There's a confusion over the definition of [culture fit](#) says **Joeri Hofmans** and **Timothy Judge**.

Zara Greenbaum interviews SIOP members on how [remote work](#) can improve employee productivity and creativity.

Adam Grant discusses the importance of [criticism](#).

[Arrogant individuals](#) introduce significant problems for coworkers according to **Stanley Silverman**.

Tomas Chamorro-Premuzic says pick a job or career that provides the right amount of [distractions](#) for your personality.

Employee Burnout, Work–Life Balance

Louis Tay lists ways to maintain your well-being and [prepare yourself](#) when things aren't perfect during the holiday season.

Mahima Saxena says employment contributes to [well-being](#) and happiness.

Piers Steel talks about new ways to battle [procrastination](#).

Time flies during the [holidays](#) because we repeat the same events says **Ronald Riggio**.

Leadership, Management, and Organizational Culture

Steven Rogelberg discusses the science of [meetings](#).

Tara Behrend explores the [future](#) of work.

[Voicing political opinions](#) on social media may affect hiring managers' perceptions of the candidate's culture fit according to **Philip Roth, Jill Ellingson, and Caren Golberg**.

Matt Barney considers [questions](#) to ask before adding AI to coaching.

Eugene Ohu discusses [work-life balance](#), virtual reality, AI, and the future of work.