Reflections from the Research Scientist

Dear Colleagues,

If you haven’t browsed the Center website in a while, I encourage you to do so! As described in this newsletter, we inaugurated our Distinguished Lecture Series. In addition, our staff have been busy contributing blogs, timely topics, and podcasts covering scientific advances and some of the many exciting new initiatives being taken to improve working lives.

My time at the Work Science Center so far has been marked by a number of opportunities to define what content we publish, but more importantly, how we publish it. These discussions about what type of content better lends itself to a podcast, or a blog post, or a timely topic have made me, as a researcher, self-reflective. How do we, as academics, convey our science, not to each other, but to the people who can use our findings to better their own and others’ lives? In my podcasts with Devin O’Connor and Ali Greenberg, I made a point of asking them where they looked for the empirically supported best-practices, to help guide their endeavors. Unsurprisingly, it was not our top journals. They both looked to outlets like Harvard Business Review, government resources, and resources provided by specific centers at universities. So that begs the question, should we, as researchers, do more to publicize our research? Maybe we won’t be the ones writing the articles for HBR or other outlets, but how can we get our science into the hands of those who will translate it for us? And then, how can we feel confident that our science is being translated in a way that we are comfortable with? One step may be posting to sites like https://www.eurekalert.org/ that act as hubs of novel information for science writers. Maybe we should attend conferences that are out of our comfort zones, that are more geared to those who would be most likely to use our findings. Unsurprisingly, it was not our top journals. They both looked to outlets like Harvard Business Review, government resources, and resources provided by specific centers at universities. So that begs the question, should we, as researchers, do more to publicize our research? Maybe we won’t be the ones writing the articles for HBR or other outlets, but how can we get our science into the hands of those who will translate it for us? And then, how can we feel confident that our science is being translated in a way that we are comfortable with? One step may be posting to sites like https://www.eurekalert.org/ that act as hubs of novel information for science writers. Maybe we should attend conferences that are out of our comfort zones, that are more geared to those who would be most likely to use our findings. I don’t think there is a clear answer or a single path to solve this question. I do know that at many universities, this type of activity is not explicitly rewarded (though I doubt any Dean would be disappointed if faculty were published in HBR). But, at least for me, knowing that my work is being used as more than just a citation is intrinsically motivating.

As always, we welcome your comments and suggestions for how to improve the Center’s value to the science and practice of work psychology.

Wishing you all a peaceful, fulfilling Winter!

Keaton Fletcher
Research Scientist, Work Science Center
**Implications of Moral Organizational Behavior for Employee Beliefs, Motivation, and Well-Being**

In the first of the Work Science Center Distinguished Lecture series, Dr. Michael Ford visited Georgia Tech on Wednesday, September 26, 2018.

Workers are often assumed to construe their organizations as entities and develop a reciprocal social exchange relationship resembling that with other humans. To the extent that this assumption holds true, workers hold their employers responsible for the morality of their behavior. This presentation delves into several conditions of this aspect of the employee-organization relationship that have been previously understudied. First, recent research will be covered on the beliefs and emotions that workers develop toward their employers at large, how quickly these can fluctuate, and implications for employee well-being and motivation. Then, new findings will be presented on the events that trigger moral emotions at work, the perceived entitativity of the organization responsible, and how employees respond to these occurrences and explain them with respect to the collective intent of the organization. Future directions for research on emotions toward and trust in organizations and institutions will be considered.

http://hdl.handle.net/1853/60479

**Task, Team, and Technology Integration in High Technology Surgery**

Dr. Ken Catchpole has spent the last 15 years studying safety and human performance in acute clinical care in general and surgery, in particular. Using examples from cardiac, orthopaedic, neurological, spinal, trauma and urological surgery, he described the results of observational studies that have helped to understand how surgical performance arises from the interaction between what people do, how they work together, and the tools they use. Dr. Catchpole also explored how the introduction of new technologies can have profound, and not always beneficial effects; and what this might mean for the future of healthcare delivery and workforce management.

http://hdl.handle.net/1853/60501
**RELEVANT PUBLICATIONS**


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**ETHICS OF ROBOT NUDGING IN THE WORKPLACE**

Behavioral nudging has become a topic of interest in behavioral economics and, more recently, robotics. A nudge is, according to Thaler and Sunstein’s (2008) bestselling book, “any aspect of the choice architecture that alters people’s behavior in a predictable way without forbidding any options or significantly changing their economic incentives” (p. 6). In a discussion with Jason Borenstein, Director of Graduate Research Ethics Programs and Associate Director of the Center for Ethics and Technology at Georgia Tech, we explore the role of nudging in modern robotics and technology development.

Dr. Borenstein offered the FitBit as an example of technology-enabled behavioral nudging. In order to increase activity to improve a healthy lifestyle, individuals wear a device around their wrists that provides external feedback and tracking of steps (and even other indicators of activity like heart rate). The FitBit also provides positive reinforcement by celebrating (in the form of a distinct pattern of vibrations) with the user when a set goal (e.g., 10,000 steps) is met. More advanced robotic technology, Borenstein adds, may be able to more effectively nudge people, given the increased capabilities and human-like appearance. As robotic technology advances, robots may be able to use facial expression, proximity, body posture to communicate varied messages to nudge human behavior. Dr. Borenstein also adds that as computing and algorithms improve, robots may be able to process a significantly larger amount of data about the situation than any human, potentially making them even more effective at influencing human behavior than humans themselves.

What, then, are the ethical limits an employer should consider when using robotic nudges? Dr. Borenstein suggests that a nudge should not lead to significant harm, should not be overly coercive, and may need to be brought to the employee’s attention. Dr. Borenstein also highlights the potential for well-intended nudges to lead to hyper-competitive workplaces, or corporate environments that result in unhealthy outcomes (e.g., reduced sleep, work-family conflict). Depending on the specifics, then, robotic nudges should either be opt-out (i.e., the default is exposure to the nudge, but employees can choose to not have it) or opt-in (i.e., the default is no nudge, but the employees can choose to have it). Only if the nudge is sufficiently, and clearly beneficial to the employee should no-way-out nudges be considered (i.e., the employee has no choice, and must be exposed to the nudge).

Imagine, then, a robot that uses some sort of behavioral influence to improve employee attention to taskwork. Or a robot that discourages team members from interrupting women and minorities when they speak up during discussions. How might the future workplace be improved through the subtle actions of robotic coworkers or fixtures of the workplace?
By: Alex LoPilato and Keaton Fletcher

We design our clothes, cars, and homes to fit our needs and improve our lives. Our jobs are no exception. One function of industrial-organizational psychologists is to design work to improve employee motivation, satisfaction, and health. A large body of job redesign research indicates five core job characteristics that affect the worker’s experience: skill variety, task identity, task significance, autonomy, and feedback (Hackman & Oldham, 1976). In this spotlight post, we report on new The Centre for Transformative Work Design at the University of Western Australia. The director of The Centre is Dr. Sharon Parker. We talked with Dr. Parker about her career, job design research, and The Centre.

What led to your strong research interest in job design?

I had been working a little bit with self-managing teams in Perth before I went to the UK. I had observed how the workers were so engaged and dynamic and involved in their work. They had voice and were just fully human in a sense. Then I went to Sheffield and observed people in an electronics company working on a very traditional assembly line. It was almost like they were treated like children and they acted like children. When that company introduced self-managing teams, I saw this amazing transformation and suddenly the workers began to develop confidence, talked more with suppliers, and began speaking out. I think that was the moment I really began to focus on capturing that change through my research.

What is the mission of the Centre for Transformative Work Design?

The broad mission of the Centre is to transform work in order to improve health, productivity, and the overall effectiveness of society. Mental and physical health challenges have existed for a long time and work design has potentially powerful role to play in this area. Second, productivity and innovation is critical for organizational success, and work design is a vehicle for unlocking human talent. Third, work is changing. Our role should be to proactively help shape what work looks like in the future. Again, this is where work design has a powerful role to play. We should be asking questions and we should be advocating around better decisions between the allocation of tasks between computers and humans.

How do you affect these changes?

I see the change process as three-pronged. First, is around policy and shaping the high level agenda around decisions, retirement age, and all those things, that in the end affect and constrain work in actual organizations. So one important goal is to try and shape policy. But also I have the view that change is also about practice too. In organizations, you can have all the policies in the world, but unless things actually get enacted in practice by local managers then that doesn’t necessarily result in any change. So we’re also trying to change practice.

The third facet of change is about directly engaging and influencing the community in terms of thinking about work design. So, for example we have this psychology at work MOOC (massive open online course). We’ve got one already on psychology at work that has a little bit about work design. We’re going to put together a work design MOOC that focuses specifically on work design. So that will be another direct interface with the community, but of course we hope it’s going to influence practice as well.

Another thing we’re doing as part of influencing the community is to have a sketch artist come and live with us here at the Centre. We’re going to be taking her out to workplaces and she’s going to be sketching people during the work day. We’re going to use those sketches to communicate to a more lay audience, a general community, what we mean by good work design. Because in a sense I feel good work design can sometimes be too abstract for people to readily grasp, so we’re going to try to make it more tangible through sketches combined with interviews. We’re trying to do different things. That’s one of them. That’s how we’re trying to have impact.
FIVE CORE CHARACTERISTICS OF JOB DESIGN

1. **Skill variety**: Particularly satisfying jobs are likely to require workers to draw upon multiple skills and abilities to be successful.

2. **Task identity**: Workers are more likely to enjoy a job if it allows them to see a task or project through from beginning to end.

3. **Task significance**: It is important for workers to feel as though their jobs contribute to the bigger picture, whether that is the functioning of the organization or society.

4. **Autonomy**: Jobs that offer workers opportunities to exert control, make their own decisions, and feel independent are especially motivating.

5. **Feedback**: Employees are especially satisfied and motivated if their work provides timely and relevant information about their performance.

For further information on The Centre for Transformative Work Design, visit https://www.transformativeworkdesign.com/

WORK SCIENCE CENTER BOOK SHELF

The members of the Work Science Center Advisory Council have been very busy writing and editing books this year.

**Human Resource Management: People, Data, and Analytics**
Companies have access to more data, and more big data, than at almost any time in our history. This abundance offers new horizons of opportunity as well as new pitfalls to ethic and management. In Human Resource Management: People, Data, and Analytics, the four authors, Talya Bauer, Berrin Erdogan, David Caughlin, and Donald Truxillo, tackle the fundamentals of how to use data analytics to make better decisions for people in organizations.

Students, practitioners, and researchers will walk away from the text better able to manage talent in this era of big data. The authors offer real-world illustrations and hands-on examples for readers to implement the analytical and decision-making skills that will enable them to thrive in today’s work world. This book will release in January 2019.

**How People Learn - National Academies of Science, Engineering, and Medicine**
In this anticipated follow up to the expanded 2000 publication, How People Learn: Brain, Mind, Experience, and School, the National Academies of Science, Engineering, and Medicine integrate new research in motivation, neuroscience, and additional sciences to enrich our understanding of learning. This installment continues to clarify the many factors that influence learning. Elements explored range from near-invisible, like lead levels in a learner’s home, to the larger scale and visible ones, such as cultures. The work encompasses the new eras of learning, including how to incorporate technology for effective learning and adapt for older learners as life expectancies extend across the world. How People Learn constitutes an essential exploration of learning for psychologists, educators, engineers, and anyone who desires to more deeply understand learning experiences from a variety of perspectives. Order by clicking here.
RELATED PUBLICATIONS


RECENT PODCASTS

**WSC Podcast Episode 4: Designing Coworking Spaces for Women**

Host, Keaton Fletcher, talks with Ali Greenberg, founder of The Broad, a coworking and community space for women and gender minorities in Richmond, Virginia. Keaton and Ali discuss the specific needs of women in the modern workforce, and what it means to design a space for women. Ali explains the thought that went into creating The Broad, and how science has informed her choices.

[http://hdl.handle.net/1853/60384](http://hdl.handle.net/1853/60384)

**WSC Podcast Episode 5: Employing People with Disabilities in the Modern Workforce**

Host, Keaton Fletcher talks with Devin O’Connor, Founder of the Grow Group, about ways to better incorporate individuals with disabilities in the modern workforce and how the science and practice of management can better include this underrepresented population. They discuss obstacles to gaining and maintaining employment for individuals with disabilities as well as potential resources for those working to help these individuals find meaningful employment in the modern workforce.

To download, visit [http://hdl.handle.net/1853/60466](http://hdl.handle.net/1853/60466)

**Upcoming Episodes**

- Interview with Dr. Richard Landers on modern I-O Psychology and the role of technology in the field.
- Interview with Dr. Kimberly French about balancing work and family in the modern workforce.
- Interview with Dr. Gretchen Spreitzer about alternative work arrangements.
Being Mindful About Mindfulness, By: Jacqueline Jung

In this timely topic, we explore mindfulness in the tradition of Kabat-Zinn. Select correlates of trait mindfulness, and mindfulness-based interventions are discussed. Lastly, areas for improvement in mindfulness research are highlighted, including an improved definition, clarification of potential adverse effects, and better understanding of intervention procedures.

Link: http://work21.gatech.edu/being-mindful-about-mindfulness-0

The Places People Go, By: Cathy Liu

The topic of geographic mobility is important to organizations and workers alike. In this paper, we review the definition of, and some antecedents to, geographic mobility. Specifically, data suggests that younger adults move more frequently than older adults, and college graduates are more likely to move than non-college graduates. Further, unemployed people are more willing and more likely to move to areas where they have no personal connections, and this increases as the length of their job search increases.

Link: http://work21.gatech.edu/places-people-go

Science for Good: Humanitarian Work Psychology, By: Brian Hengesbaugh

As a relatively new field, Humanitarian Work Psychology can offer I-O psychologists insight into how to make our work more meaningful. HWP draws from, but is distinct from, I-O, vocational psychology, occupational health psychology, and positive psychology. One area of HWP that has garnered attention is that of decent work, including who has access to it and how can we create it.

Link: http://work21.gatech.edu/science-good-humanitarian-work-psychology

Team Science: What Do We Know? What’s Next?, By: Keaton Fletcher

The modern workforce is relying increasingly upon teams. The science of teams in the workplace has created a wealth of knowledge and understanding. We have identified characteristics of the team, task, and environment that influence team processes which, in turn, influence outcomes. Looking forward, we need a better understanding of multi-team systems and how teams can work with one another to improve overall organizational outcomes.

Link: http://work21.gatech.edu/team-science-what-do-we-know-whats-next

Understanding Workspace, By: Sanjana Basker

The workplace has undergone many transformations over the past two hundred years. The oscillating popularity of the open office, the use of physical features and symbols to communicate organizational values and culture, and modern work arrangements are discussed in this paper. Teleworking alternatives such as non-territorial workspaces and third places are explored as alternatives to the open office.

Link: http://work21.gatech.edu/understanding-workspace

Corporate Sustainability: More than Going Green, By: Hannah Ramil

 Corporations spend well into the trillions on corporate sustainability efforts, but what exactly is corporate sustainability? This timely topic explores how corporate sustainability is different from other, related constructs, and why it is important to consider in the modern workforce, and how it can affect employees.

Link: http://work21.gatech.edu/corporate-sustainability-more-going-green
Automation and A.I. are becoming more pervasive across both white and blue-collar jobs. McKinsey Global Institute estimates that about half of global work activities could be automated by adapting current technology (Manyika et al., 2017), which suggests that many of the common tasks that employees now perform could easily be outsourced to technology in the coming years. There are mixed reactions to these kinds of projections in the media. Some opinions are quite positive, citing the potential for more creative, high-skill forms of labor as an outcome of increased automation. Others suggest the potential for ‘technological unemployment’, echoing the fear by many workers around the globe that their jobs are at risk. It is more likely, at least in the near term, that workers will incorporate automation into work roles rather than being completely displaced.

Automation is currently best suited for repetitive, routine tasks, rather than tasks that are novel or that require creative or social intelligence (Frey & Osborne, 2013). Given the complexity and social nature of many workers’ job responsibilities, it is unlikely that many jobs would be able to be completely automated into a set of routine tasks. For example, there are many tasks in healthcare that can be automated, such as patient check-ins and medical record management, but the strong socioemotional component of caregiving in healthcare has a very low risk of being automated. Moreover, automation exists on many different levels, differing on the degree to which the automation assists a human operator, which implies that automation is not an ‘all-or-nothing’ phenomenon in the workplace (Parasuraman, Sheridan, & Wickens, 2000). So, rather than technology completely taking over jobs or humans continuing to use technology merely for assistance on tasks, it appears that the structure of most work roles will adapt into a collaboration of sorts between humans and automation.

How will I-O psychologists pave the way to understand the psychological impacts of this new era of work? Our traditional models do not account for the shared nature of work between humans and technologies. If we want to understand ‘the future of work’, we need to start investigating the individual and organizational level impacts of the introduction of automation across the workforce. How will automation impact workers’ experiences of control, motivation, and engagement in their work? How will automation impact issues like selection and training for job roles that have heavily incorporated automated technologies? How will workers who are displaced by automation be retrained for a more skill-polarized workforce? These are the kinds of questions that we need to ask now to be recognized as thought leaders on this topic in the future.

To keep the public and other scientists up-to-date on work-related research, the Work Science Center team is going to start posting the latest research on the Work Science Center site. If you have any recent work-related news, you would like featured on the Center site, are interested in participating, please contact Keaton Fletcher at kfletcher40@gatech.edu