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FOCAL ARTICLE

All we like sheep: The need for reflection and reflexivity in I-O psychology

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Abstract

In recent years, various I-O psychologists have raised concerns about the state of the field, with some arguing that we are experiencing a collective identity crisis and have lost our way. In this article, I explore why these concerns have emerged by reviewing the development of our field from a philosophy of science perspective. Then I discuss how the concepts of reflection and reflexivity can help us clarify our professional worldviews and find a way forward. I conclude by suggesting ways to incorporate reflection and reflexivity into I-O research and practice. My hope is to spark a conversation about the role that reflection and reflexivity could play in our field.

Keywords: Reflexivity; reflection; research methods; professional practice

Introduction

In recent decades, various industrial and organizational (I-O) psychologists have raised questions and concerns about the state of the field. For example, when Ann Marie Ryan delivered her 2003 presidential address at the Annual Conference of the Society for Industrial-Organizational Psychology (SIOP), she opened her speech by stating: "I-O psychology is involved in a continuing identity quest" (2003, p. 21). Some, like Lefkowitz (2010), have argued that the field is experiencing an identity crisis because "our central professional value system . . . is inadequate" (p. 294). Others point to a lack of scientific rigor and training. In a critical review of practice, Briner and Rousseau (2011) concluded that despite its empirical foundations, "I-O psychology cannot yet claim to be fully evidence-based" (pp. 19–20). In recent years, some have started to suggest the field is in jeopardy. Ones and colleagues (2017) wrote a *TIP* article entitled "Has Industrial-Organizational Psychology Lost Its Way?" A year later, Rotolo and colleagues (2018) observed that groundless fads and "anti-industrial-organizational solutions" have become increasingly popular in the talent management space. Landers (2019) has warned that the field faces an existential threat because of rapid technological advances. If I-O scientists and practitioners do not keep pace with these changes, he says "we are poised to plunge headfirst into our own obsolescence" (p. 3).

These concerns deserve careful consideration. Science, Karl Popper stated, "grows by way of mutual criticism" (1945, p. 499). Over the course of I-O psychology's history, which spans back over a century now, the field has been shaped by criticism and debate. In the 1940s, for example, Kornhauser (1947) warned that the field was ignoring important workplace topics like labor relations because I-O psychologists were more focused on the interests of management than employees. In the 1950s and 1960s, various models of leadership were developed and competing schools of thought emerged. "There are almost as many definitions of leadership," Fred Fiedler said, "as there are leadership theories—and there are almost as many theories of leadership as there are

psychologists working in the field" (1971, p. 1). In the early 2000s, Ashkanasy and Daus debated Locke and Latham about the merits and validity of emotional intelligence at the 2002 SIOP Annual Conference. Last decade, Kepes and McDaniel (2013) questioned the trustworthiness of the scientific literature in I-O psychology and highlighted the limitations and liabilities of many standard journal publication practices.

Clearly, mutual criticism can be productive. When scientists and practitioners grapple with critical questions, it creates the possibility for scientific evolution, methodological refinement, and theoretical debate. It also creates the opportunity for personal growth, development, and self-awareness. As Donald Schon (1983) noted almost 40 years ago, "Practitioners are frequently embroiled in conflicts of values, goals, purposes, and interests" (p. 17). To navigate these conflicts, professionals in fields like nursing, education, and clinical psychology are trained to engage in regular and ongoing reflective practice, exploring the dilemmas they face and the choices they make as they do their work. The goal of reflective practice is to help scientists and practitioners clarify their values, surface personal blind spots, identify areas for learning, and ultimately increase their overall competence (Mann et al., 2009). Various scholars have theorized that reflection, when properly practiced, can increase self-awareness and self-confidence, improve decision-making and performance, and enhance one's ability to manage complexity and ambiguity (Lyons, 2010).

Considering these potential benefits, reflection seems like an important professional practice for I-O scientists and practitioners to engage in. Clearly, there is evidence that I-O psychologists know how to be reflective: Each article referenced at the start of this paper provides a compelling example of reflective I-O inquiry and scholarship. But concluding that the field as a whole is reflective based on these exemplars is an exception fallacy. Based on a review of various sources, reflection does not appear to be a well-known or widely discussed concept in our field. A keyword search of PscyhINFO did not yield any I-O-specific articles on self-reflective or self-reflexive practice. Neither topic was featured or explored in the March 2014 edition of *Industrial and Organizational Psychology* (Volume 7, Issue 1), which focused on best practices for educating I-O psychologists. And reflective practice is not a part of SIOP's recommended education plan for masters and doctoral level I-0 programs (see https://www.siop.org/Events-Education/Graduate-Training-Program/Guidelines-for-Education-and-Training).

This is unfortunate. If, as Ryan and others contend, our field is in the midst of an identity quest —if we are confused about our values, misusing our methods, struggling with complexities, and uncertain about our future—healthy introspection may help.

The purpose of this focal article is to provide I-O psychologists—including scientists, practitioners, and educators—with a process and framework for engaging in reflective practice. Because our field is an applied science, my goal is to raise a series of reflective research-related and consulting-related questions by covering three main topics. First, I will review I-O psychology from a philosophy of science perspective, exploring the ontological, epistemological, and axiological foundations and assumptions of our field. Then, I will introduce the concepts of reflection and reflexivity; discuss how personal biases, basic assumptions, and interpretive perspectives can affect our work; and pose nine reflective questions for I-O psychologists to consider. Finally, I will suggest ways for I-O scientists, practitioners, students, and educators to incorporate reflection and reflexivity into their professional practice. My hope is that this article will spark a collective conversation about the role that reflection and reflexivity can play in our field.

Using philosophy of science to explore the foundations of our field

> But there is no such thing as philosophy-free science; there is only science whose philosophical baggage is taken on board without examination.—Daniel Dennett (1995, p. 21)

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Many I-O psychologists are well versed in a wide range of theories, research methods, and statistical techniques. But how many have explored the philosophical assumptions on which these theories, methods, and techniques are based? This is a critical question: If we are unaware of the philosophical foundations of our field, our work may be laden with philosophical baggage we are unaware of.

Philosophy of science can help us develop a deeper understanding of the core beliefs, fundamental logic, and implicit values that underpin our field. In this section, I will provide a brief overview of what philosophy of science is. Then I will review the major philosophies of science that have been most influential since our field emerged at the start of the 20th century. Finally, I will explore how these philosophies of science have shaped our field over the past 120 years.

A brief overview of philosophy of science

Philosophy of science is a branch of philosophy that examines and evaluates the basic assumptions, inherent suppositions, and accepted practices of science. According to Peter Machamer, an American philosopher and historian of science, "Philosophy of science takes science and subjects it to critical thought" (1998, p. 2). What is science? What purpose does it serve, and what contributions does it make to society? Where do theories come from? What is the basis for truth? Why do scientists believe some things and not others? What methods do scientists use to make their claims and draw their conclusions? These are the kinds of questions that philosophers have explored for centuries. But although the historical roots of philosophy of science are deep—extending back to Plato and Aristotle—its emergence as a formal academic discipline occurred just in the last century. The influential works of Karl Popper, Imre Lakatos, Paul Feyerabend, and Thomas Kuhn helped establish the field and demonstrate the value of utilizing philosophy to understand science.

Using philosophical principles, scientists and practitioners can gain many important insights. For example, philosophy of science can provide a historical perspective on the evolution of scientific thought, theories, and trends. In *The Structure of Scientific Revolutions* (1962), Kuhn argued that scientific knowledge and practice are shaped by paradigms—common worldviews shared by members of a scientific community. Philosophy can be used to explore how different paradigms have influenced the development of scientific fields over time. In addition to providing historical perspective, philosophy also provides a framework for evaluating the choices that researchers and practitioners make as they do their work. All scientific endeavors are based on philosophical assumptions about the nature of reality (i.e., ontology), the process of knowledge building (i.e., epistemology), and the essence of what is right and wrong (i.e., axiology; Patton, 2002). These philosophical assumptions influence the questions that researchers and practitioners raise, the methods they use to study those questions, and the conclusions they reach (Chilisa & Kawulich, 2012). Knowledge of ontology, epistemology, and axiology can help scientists and practitioners engage in intellectual debates, explore theoretical or methodological disagreements, and discuss competing schools of thought. And philosophy can foster self-reflection, reduce blind spots, and promote new ways of thinking. "A knowledge of the historic and philosophical background," Albert Einstein wrote to philosopher of science Robert Thornton, "gives that kind of independence from prejudices of his (sic) generation from which most scientists are suffering. This independence created by philosophical insight is—in my opinion—the mark of distinction between a mere artisan or specialist and a real seeker after truth" (see Howard, 2005, p. 34).

Three major 20th century philosophies of science

I-O psychology's origins can be traced back to the late 19th century, when the field first started to emerge as an independent area of study (Koppes Bryan, 2021). As the field developed over the

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course of the 20th century, psychology, sociology, and other social sciences were shaped by three major philosophies of science: positivism, post-positivism, and constructionism.

- *Positivism.* Positivism was the dominant philosophy of science for the first half of the 20th century. Based on the 19th century philosophical works of Auguste Comte and John Stuart Mill—and further developed by the Vienna Circle, a group of scientists, mathematicians, and philosophers who met regularly in the 1920s and 1930s—positivism posits a series of logical suppositions that can be found at the core of many scientific fields, including psychology. As its point of departure, positivism assumes that a single, universal, sensible reality—guided by immutable natural laws—exists in the world (Guba & Lincoln, 1994). This reality can be discovered, positivists argue, through empirical methods that allow scientists to observe and measure phenomena using experimental and quasi-experimental methods, and then arrive at truth claims based on statistical analysis (Park et al., 2020). Science is considered to be value-free, objective, and dualistic: Scientists and their subject of study are considered to be completely independent (Erciyes, 2020). Positivist research follows the hypothetico-deductive model, moving from (a) theory and hypothesis formation; to (b) operationalization, experimentation, and hypothesis testing; which ultimately leads to (c) theory refinement and application (Park et al., 2020). Theory and research in this paradigm tend to be reductionist and deterministic (Guba & Lincoln, 1994; Hesse, 1980). From a positivist perspective, the goal of science is to discover "explanatory associations or causal relationships that ultimately lead to prediction and control of the phenomena in question" (Park et al., 2020, p. 690).
- *Post-positivism.* In the second half of the 20th century, a number of prominent scientists, including Popper, Kuhn, and Lakatos, started to challenge and critique core aspects of the positivist paradigm (Letourneau & Allen, 1999; Tanlaka et al., 2019). These critiques led to the emergence of post-positivism, a philosophy of science that has become increasingly popular in various fields of human science—including sociology, anthropology, nursing, and medicine—in recent decades. Like positivism, post-positivism assumes that a single, universal, sensible reality exists. But reality is not fully understandable, post-positivism contends, because human intelligence is limited and subject to biases, whereas reality is vast, complex, and ultimately inscrutable (Guba & Lincoln, 1994). Ontologically, this contention that reality exists but is not fully apprehendable is known as critical realism (Cook & Campbell, 1979), and it is different than the naïve realism supposition (i.e., reality exists and can be fully discovered) that positivism asserts. As a result, post-positivism presents an approach to science that differs from that proposed by positivism. For example, post-positivism rejects the notion of value-free inquiry and scientific dualism (Tanlaka et al., 2019). Doing good research from a post-positivist perspective requires researchers to recognize their biases and consider the limitations of their theories, methods, and findings. To counter these limitations, post-positivism calls for a pluralistic approach to scientific knowledge-building (Houts et al., 1986; Phillips, 1990). Known as critical multiplism, this central tenet of post-positivism posits that the best way to investigate research questions is to conduct multiple studies and use multiple methodologies—including both quantitative and qualitative research—to surface common findings (Guba, 1990). In this paradigm, knowledge claims are warranted based on the extent to which there is correspondence across multiple explorations of the same phenomena (Shadish, 1993). Because reality is considered to be complex and multifaceted, post-positivism emphasizes the importance of conducting research in natural settings, exploring contextual factors, and developing an emic understanding of research participants' perceptions and perspectives (Guba & Lincoln, 1994).
- *Social constructionism.* In the second half of the 20th century, another influential philosophy of science was established. Informed by the thinking of Marx, Durkheim, and George Herbert Mead, sociologists Peter L. Berger and Thomas Luckman first introduced the theory

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of social constructionism in *The Social Construction of Reality* (1966). In this book, they made the central argument that all knowledge and truth claims are constructed by people through their social interactions (Berger & Luckman, 1966). Others scientists and academics, like social psychologist Kenneth Gergen, learning theorist Seymour Papert, and anthropologist Clifford Geertz, expanded this theory as they applied it to their own fields. What has emerged is a paradigm that questions the fundamental assumptions of positivism and post-positivism. For example, social constructionism abandons the positivist assumption that an objective reality exists and can be discovered, either fully or partially, through research (Guba & Lincoln, 1994). Instead, social constructionism contends that all knowledge, including scientific knowledge, is a construction—a shared social agreement created by people through interaction, dialog, and inquiry (Gergen & Gergen, 2003). These constructions are created to provide a basis for sensemaking—a shared cognitive map—within a community or social system (Geldenhuys, 2015). From a social construction perspective, human knowledge is always subjective and relative, influenced by social norms and suppositions, and representative of just one of multiple possible perspectives of reality (Steyaert et al., 1996). Ultimately, constructionists argue that meaning and truth are made, not discovered, through human endeavors such as science.

Tracing the development of our field from a philosophy of science perspective

One way to understand the current state of our field is to consider how positivism, post-positivism, and social constructionism have shaped its development. If we are currently experiencing an identity crisis and have lost our way, these divergent philosophies of science may be contributing. Perhaps we are caught on the horns of a dilemma, struggling to reconcile the different ontological, epistemological, and axiological positions advanced by these three influential paradigms.

The foundations of I-O psychology were established in the first half of the 20th century, during the height of positivism, and it is clear that that this philosophy has had a strong and lasting impact on our field. Much of our scientific knowledge, especially the research we publish in textbooks and journals, is based on hypothetico-deductivist inquiry (Locke, 2007; Ones et al. 2017). This central tenet of positivism, which emerged as the predominant approach to psychological research in the 20th century (Cattel, 1966; Haig, 2005), is at the core of much of the research we conduct and value. Our field also places a heavy emphasis on using psychological measurement, quantitative data, and statistical analysis to establish truth claims (Zickar & Gibby, 2021). These practices reflect positivistic principles. I-O research often seeks to discover nomothetic laws based on assumptions that employees can be "reduced to a list of abstractions (skills, attitudes, features, properties)" (Weiss & Rupp, 2011, p. 84). Published studies are often assumed to reveal objective, universal, and timeless truths discovered by objective and bias-free researchers. A close adherence to the scientific method is considered to be the surest way to prevent bias, errors, and untruths from contaminating research findings.

In recent decades, many of the positivistic foundations of our field have been questioned and countered by post-positivistic perspectives. For example, Ones, Kaiser, Chamorro-Premuzic, and Svensson (2017) recently warned that our field's "fixation on methodological minutia is causing the I-O to become more and more precise in ways that matter less and less." They encourage I-O psychologists to escape such "methodological straitjackets" by focusing less on theory building and complex statistical analysis, and more on inductive and exploratory research about real-world issues. Pratt and Bonaccio (2016) made a similar plea, encouraging I-O scientists and practitioners to recognize the value of qualitative research and mixed methods. Locke (2007) highlighted the power of taking an inductive approach to knowledge development and theory building. From a philosophical perspective, these three articles reflect a desire for the field to move beyond the

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confines of positivism and hypothetico-deductivism and toward a more post-positivistic approach to science. Other researchers have called for similar changes. For example, Rousseau and Fried (2001) wrote a piercing editorial that highlighted the risks of universalism and encouraged organizational researchers to carefully consider the impact that contextual factors have on their research. A few years later, Cox and Hassard (2005) reviewed the concept of triangulation—an example of critical multiplism—and discussed how this technique could be used to improve organizational research. More recently, Lapierre and colleagues (2018) have called for stronger partnerships between organizational researchers and organizational stakeholders. Bonaccio and colleagues (2018) have encouraged I-O psychologists to adopt an integrated partnered research model and involve organizational stakeholders in all phases of the research process. Both recommendations represent a participatory, post-positivistic approach to research.

Social constructionism has also influenced our field in recent decades. In the 1980s and 90s, a number of scholars, including Cooperrider and Srivastava (1987), Cooper (1989), Chen and Meindl (1992), starting using constructionist and postmodernist perspectives to analyze and reconsider various aspects of organizational theory and research. Shortly after the turn of the century, Gergen and Thatchenkery (2004) wrote a critical review of organizational science from a social constructionist perspective. A few years later, Weiss and Rupp (2011) noted that most of the research in our field is nomothetic, organization-centric, and reductionist. To develop a deeper, more holistic understanding of the psychology of work, they encouraged I-O psychologists to conduct more person-centric, phenomenological research focused on employees' subjective experiences, personal narratives, and constructed worldviews. In the I-O specialty area of organization development (OD), Bushe and Marshak (2009) have used social constructionist theory to develop a new approach to organization change based on language, dialog, and generative metaphors. Camargo-Borges and Rasera (2013) and Geldenhuys (2015) have identified various ways that social constructionist principles can be used to enhance and expand OD practice and research.

Putting the current state of our field in perspective

This review provides three important perspectives on the current state of our field. First, it puts our identity quest (Ryan, 2003) into a historical context and highlights how the scientific foundations of I-O psychology have evolved over the past century. When our field was founded, scientific management and differential psychology were influential (Zickar and Gabby, 2021). But over the past century, a number of other important schools of thought—including human relations theory, open systems theory, and complex adaptive systems theory—have emerged. Each new theory has introduced different ways of thinking about the nature of work, the dynamics of organizations, and the determinants of employee motivation and performance. From an ontological perspective, the field has expanded, moving beyond its reductionist and atomistic roots toward more complex, holistic, and multilevel theories of work. There have been epistemological shifts as well; rigid reliance on hypothetico-deductivism and quantitative methods has given way to a more flexible, pragmatic, and multimethod approach to research. Axiological assumptions are also in flux. For many I-O psychologists, the positivistic premise that our field produces neutral and value-free science is no longer tenable. In recent years, various scientists and practitioners have called for critical reviews of the research we conduct, the people we serve, and the role that our profession plays in society. For example, Woo and colleagues (2021) recently argued that our field is overly influenced by capitalism and power, our research is often based on WEIRD (White, educated, industrialized, rich, and democratic) samples and has limited real-world impact, and we need to embrace a set of different, more inclusive values.

This review also points toward a new way to think about our current crisis and the growing sense of anomie that some say we are experiencing. Perhaps we are lost. Perhaps we, like sheep,

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have in fact gone astray, each turned to our own way. Or perhaps we are just operating in a world of work and science that is bigger, broader, and filled with more choices. When our field was founded, scientific monism was the dominant logic. Truth was assumed to be singular, specific, and fully discoverable by scientists using the right theory and method. But over the last 30 years, a growing number of philosophers and scientists have started to argue that some phenomena are too vast to be explained by a single theory or methodology (see Kellert et al., 2006). This philosophy, known as scientific pluralism, contends that multiple theories and methods are required to understand certain complex realities, and multiple truths can exist at the same time (Smythe & McKensie, 2010). The epistemological, methodological, and analytical options available to us today are also much broader than ever before. We can base our studies on deductive, inductive, or abductive logic. We can gather data using traditional methods, like surveys and experiments, or new ones, like wearable sensors and eye-tracking technology. We can analyze data using tried and true analytical techniques, like t-tests and factor analysis, or new approaches, like set theoretical analysis (Ford et al., 2013). In a day and age when corporations rule the world (Korten, 2001) and organizational actions impact everything from the environment and the economy to social justice and human rights, the values that inform our work matter. If our research, our recommendations, and our interventions shape the way people behave at work—for better or for worse—then the ethics, principles, and ideals that we bring to our work are consequential.

If this is the case—if we are operating in a world of more choices, and these choices have consequences—then this review ultimately leads to a series of critical questions. How do we make choices as I-O psychologists? As we do our work as scientists and researchers, students and teachers, coaches and consultants, what is guiding the literature we are reading, the methods we are using, the interventions we are recommending? How do our values, ideals, and life experiences affect the hypotheses we develop and the interpretations we make? If we are to find our way forward and move beyond our current identity crisis, these are the types of reflective questions I believe we need to explore.

Reflection, reflexivity, and I-O psychology

"Social research requires us to account for our humanness."—Jon Dean (2017, p. 1)

How do we account for our humanness as we practice our profession? This is a question that scientists and practitioners in other fields, like sociology (Gouldner, 1970), anthropology (Rubinstein, 1991), nursing (Nelson, 2012), education (Brookfield, 1995), and clinical and counseling psychology (Chinn, 2007), have been considering for decades. But based on a review of the I-O literature, it does not appear to be a question we are exploring broadly or deeply.

Perhaps we are not exploring how our perspectives, life experiences, and worldviews affect our work because we do not have a common language or approach to do so. In this section, I will introduce two concepts—reflection and reflexivity—that may help us consider the ways our subjective selves influence our research and analyses, our recommendations and interventions, and our teaching and learning. Then, I will discuss how reflection and reflexivity can be applied in our field. Finally, I will explore a series of questions to demonstrate how our personal perspectives and worldviews—our humanness—are inherent in the work we do.

Reflection

For over a century, psychologists, philosophers, and educators have been writing about the importance of reflection. In *How We Think* (1910), John Dewey identified reflection as a critical component of learning. Over the past 50 years, a broad body of literature exploring the role that reflection plays in professional development and practice has emerged. Starting in the 1970s,

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several foundational reflective models and frameworks (e.g., Argyris & Schon, 1978; Borton 1970; Kolb & Fry 1975) were developed. In the 1980s, Donald Schon's influential book, *The Reflective Practitioner* (1983), examined how professionals in five fields—engineering, architecture, management, psychotherapy, and town planning—integrate knowledge, learning, inquiry, sensemaking, and intuition in their day-to-day decisions and practice. In the 90s, Jack Mezirow (1997) developed transformative learning theory and highlighted how critical reflection can help adult learners identify their habits of mind, discover their biases, and become autonomous thinkers. In recent decades, reflection has become an important part of the educational experience in many professions, including medicine (e.g., Sandars, 2009), nursing (e.g., Miraglia & Asselin, 2015), social work (e.g., Pawar & Anscombe, 2015), and teaching (e.g., Shandomo, 2010).

Although different theories, models, and definitions of reflection have been proposed, most share four core characteristics. First, reflection is typically described as a metacognitive process that reveals the assumptions, worldviews, and perspectives that influence the way we think, learn, and act. Double-loop learning (Argyris, 1976), whereby professionals evaluate how organizational norms, policies, and practices affect their decision-making, is an example of metacognitive reflection. Second, reflection focuses on praxis. Reflection-in-action and reflection-on-action (Schon, 1983), two exercises that encourage practitioners to think about their behaviors during and after an actual work experience, epitomize this focus on real-world practice. Third, reflection requires deep inquiry and critical examination, of both oneself and others. Kim's critical reflective inquiry model (1999), for example, encourages practitioners to engage in three types of inquiry (descriptive, reflective, and emancipatory) to promote both personal and shared learning. Finally, the purpose of reflection is to enhance one's professional capabilities and facilitate continuous learning, growth, and development. Although research on the efficacy of reflection is limited (Mann et al., 2007), and many studies are based on small samples, observational data, and qualitative methods (Dubé & Ducharme, 2015), researchers have found empirical links among reflective practice, skill development, and performance. For example, Mamede et al. (2008) found that reflective practice improved medical residents' ability to diagnose complex clinical cases. In a recent working paper, Di Stefano et al. (2016) found that after call center employees engaged in reflective practice, both their self-efficacy and task understanding increased, which in turn improved their performance.

Reflexivity

Reflexivity and reflection are related but distinct concepts. Both emphasize the importance of self-examination, but each points to different reasons for looking within. For advocates of reflection, the purpose of self-inquiry is to foster professional development. For proponents of reflexivity, the purpose of self-inquiry is to produce better science.

The origins of reflexivity can be traced back to the early 20th century, when George Herbert Mead (1934) defined reflexivity as "the turning back of the experience of the individual upon [oneself]" (p. 134). For Mead, reflexivity was a critical component of his theory of social behaviorism, which argued that our experiences shape our self-identity, and our self-identity shapes our experiences (Cook, 1977; Salzman, 2002). In the decades that followed, scholars started to consider how this interplay between self and experience might affect the research process and jeopardize scientists' ability to conduct objective research. For example, American sociologist Robert Merton (1948) introduced the self-fulfilling prophecy concept and described how expectations and predictions can shape behaviors and outcomes. Karl Popper (1957) and Ernest Nagel (1961), both philosophers, explored the epistemological implications of this phenomenon and warned that if scientists' predictions can influence the outcomes of their studies, then the research process actually fashions reality, creates findings, and constructs knowledge. Toward the end of the 20th century, French philosopher and sociologist Pierre Bourdieu and his colleague Loic Wacquant raised similar concerns in their seminal book, *An Invitation to Reflexive Sociology* (1992). To counter the

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effects of researcher bias, they encouraged sociologists to explore the impact that their subjective worldviews may have on their scientific investigations.

Like reflection, reflexivity has been defined in many ways since it was first introduced. In Holland's (1999) review of the concept at the end of the 20th century, he noted that "the word is used in so many different senses that it often sustains confusion rather than clarifying any underlying issues" (p. 463). Although the concept remains broad and perplexing 2 decades later, several useful definitions have been developed. For example, Holland (1999) describes reflexivity as a process by which the researcher reflects on the research process and seeks to understand how it may shape research outcomes. Dowling (2006) defines reflexivity as a practice of self-critique whereby the researcher considers how his or her own experiences may influence the research process. Cunliffe (2003) describes reflexivity as an ongoing self-examination of the philosophical commitments and assumptions that shape a researcher's work. Finlay (2002) states:

> Reflexive analysis in research encompasses continual evaluation of subjective responses, intersubjective dynamics, and the research process itself. It involves a shift in our understanding of data collection from something objective that is accomplished through detached scrutiny . . . .to recognizing how we actively construct our knowledge. (p. 532)

Over the decades, multiple models of reflexivity have been proposed. Many are abstruse, but there are exceptions. Perhaps one of the most clarifying frameworks was developed by Sue Wilkinson, a British psychologist and feminist scholar. In *The Role of Reflexivity in Feminist Psychology* (1988), she identifies three aspects of reflexivity: personal, functional, and disciplinary.

- Personal reflexivity is an introspective process of evaluating how the researcher's subjective life—their interests, concerns, values, and experiences—affects the research they conduct, the topics they study, the questions they explore, and the theories they consider. It also involves considering how the research process affects the researcher. "The fully reflexive analysis," Wilkinson says, "would entail asking not only how life experience influences research, but also how research feeds back into life experience: that is, about the reciprocal relationship between the two" (p. 494).
- Functional reflexivity focuses on exploring the epistemological assumptions and methodological choices that scientists make as they conduct their research. Wilkinson describes this as a "continuous, critical examination of the practice/process of research to reveal its assumptions, values, and biases" (p. 495). How do the researcher's values, worldviews, ideologies, and social identities affect the way they design studies, develop hypotheses, select methods, and interpret results? How do the methodologies they use both limit and lead to the findings they discover? Wilkinson says these are important questions to explore. Otherwise, researchers risk overlooking how the methods they use shape the science they create and the knowledge they construct.
- Disciplinary reflexivity is the term Wilkinson uses to describe what she says is the broadest—and potentially the most transformative—type of reflexivity. This involves a collective, critical reflective process whereby members of a scientific community take account of their field of study, evaluate its sociohistorical context, examine its ontological, epistemological, and axiological underpinnings, and "explain its own form and influence, utilizing a developed form of the sociology of science" (p. 495). As part of this critical review, Wilkinson encourages scientists and practitioners to take a hard look at sources of power, privilege, authority, and legitimacy within their field. As a feminist scholar frustrated with the state of academic psychology in the late 1980s, Wilkinson concludes her article by stating: "one of our most powerful tools in working for change is a serious application of the concept of reflexivity" (p. 498).

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Are we experiencing a reflexive turn in I-O psychology?

In recent decades, reflective and reflexive turns have occurred across a number of fields—including sociology, anthropology, ethnography, medicine, nursing, education, clinical psychology, counseling psychology, and psychiatry. Within each of these disciplines, researchers, scholars, and practitioners have called for critical reviews and collective examinations of their scientific communities and their areas of practice.

Our field seems to be taking a similar turn. As discussed throughout this paper, I-O psychologists have raised a mounting number of questions about our professional identity and relevance, our research methods and practices, our ethics and principles, and our role in organizations and society. Self-reflection and reflexivity provide a process for exploring these questions and create change, both for individual psychologists and for the field as a whole.

But there are risks associated with taking a reflexive turn. Across disciplines, critics have cautioned that reflexivity can lead to a number of problems. Maton (2003), for example, said that although "the road to reflexive practice is paved with good intentions," it can increase scientific narcissism and cause researchers to produce studies that are more focused on themselves than their topics of interest (p. 56). Salzman (2002) questioned the ability of scientists and practitioners to conduct an honest evaluation of themselves. Finlay (2002) warned that "the process of engaging in reflexivity is full of muddy ambiguity and multiple trails as researchers negotiate the swamp of interminable deconstructions, self analysis, and self disclosure" (p. 209).

Additionally, our field does not have a robust body of literature or set of established practices for engaging in introspection and scientific self-examination. To date, no published studies have explored if or how reflection or reflexivity might affect the practice of I-O psychology. In the field of OD, the concept of self as instrument emphasizes the importance of reflection (see Cheung-Judge, 2012). But this concept is usually presented as a process for practitioners to use when conducting fieldwork and observing group or organizational dynamics; it has not been studied empirically. As a result, it may not be widely known or utilized by I-O researchers and scientists.

A model of reflection and reflexivity for our field

Despite these challenges, I think there is a way to reap the benefits of reflection and reflexivity without getting lost in navel gazing and mired in solipsism. Wilkinson's review of reflexivity (1988) provides a helpful structure for building a reflective framework for our field. Based on her tripartite definition, here are three personal, three epistemological, and three disciplinary questions for I-O psychologists to consider.

1. *How does your positionality affect your science and practice?* Positionality is a term used to describe a scientist's worldview and the stance they take in relation to their research (Darwin Holmes, 2020; Foote & Bartell, 2011; Savin-Baden & Major, 2013). For researchers and practitioners in many fields, including ethnography, anthropology, sociology, workplace diversity, counseling, and social work, examining their positionality is a critical part of their professional practice. It involves exploring how one's background and social identity, life experiences and history, demographics and psychographics, and personal ontology, epistemology, and axiology affect one's work (Rowe, 2014). Through this process, scientists and practitioners can develop a better understanding of how their internal perspectives and personal ideologies influence the hypotheses they develop, the research they conduct, the interpretations they make, and the interventions they design.
2. *What paradigmatic assumptions guide your work?* Over 40 years ago, Gibson Burrell and Gareth Morgan explored the theoretical foundations of social theory in their influential book, *Sociological Paradigms and Organizational Analysis* (1979). All social theory, they said, can be analyzed along two dimensions: "assumptions about the nature of science

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can be thought of in terms of what we call the subjective-objective dimension, and assumptions about the nature of society in terms of a regulation-radical change dimension" (p. 21). Based on these two dimensions, Burrell and Morgan identified four paradigms that they say underpin all approaches to organizational analysis: radical humanism, radical structuralism, functionalism, and interpretivism. This framework raises a series of reflective questions. As an I-O psychologist, are you seeking to maintain order within organizations, systems, and society as a whole, or are you seeking to disrupt the status quo? Do you focus on the idiographic experiences of individual employees or the nomothetic characteristics of workforces as a whole? Do you gravitate toward diagnosing individual differences or social dynamics? Do your interventions tend to shake things up or settle things down? By exploring these types of questions, we can each develop a better understanding of the paradigmatic assumptions that guide our work.

3. *What philosophy of science do you subscribe to?* Over the course of I-O psychology's history, three prominent philosophies of science have emerged. As discussed earlier, our field was founded based on positivistic principles. But post-positivistic and social constructionist ideas have become increasingly influential in recent decades. Considering this context, it is important to explore how these various schools of thought have shaped our own interpretive perspectives. Do you consider yourself a positivist, a post-positivist, or a constructionist? Have you selected your philosophy of science based on careful reflection? Or is it a set of received beliefs imparted on you in graduate school? What are the potential blind spots associated with your philosophy of science? How has your philosophy of science helped you make sense of phenomena? How has it limited your science and sensemaking?
4. *Is our research too reductionistic?* Most I-O psychologists would agree that organizational phenomena are complex. Our field has been influenced by Lewin's behavioral heuristic (1936), Bandura's theory of reciprocal determinism (1978), and Rice's multilevel model of group dynamics (1969). As a result, we have developed robust interactional models of behavior and sophisticated statistical techniques for conducting multilevel analysis. But most scientific disciplines produce research that is more reductionistic than holistic (Verschuren, 2001). As noted earlier, Weiss and Rupp see this tendency in our own field (2011). Considering the complexity of modern organizations, is our approach to research broad enough to understand contemporary workplaces? Do our methodologies allow us to understand equifinality and multifinality within systems, explore emergent organizational dynamics, and develop holistic insights into the employee experience? Over 2 decades ago, Lewis and Grimes (1999) demonstrated how multiparadigm inquiry—a process of using different theories to study the same phenomena—can yield powerful insights into workplace events. A few years later, Richard Hackman (2003) showed how researchers can learn more about complex organizational dynamics by crossing levels and integrating micro-, meso-, and macro-level data findings. More recently, Ford et al. (2013) demonstrated how set-theoretic analysis can be used to explore complex leadership dynamics in a new and holistic way. These three articles provide compelling examples of what a broader epistemological approach to I-O research might look like.
5. *Is our approach to statistical analysis outdated?* In the 20th century, null hypothesis significance testing (NHST) emerged as one of the most common methods to establish truth claims within a number of scientific fields, including our own. Based on analytical approaches developed by Fisher (1925) and Neyman and Pearson (1933), "NHST is based on positing that a certain condition . . . is true and then calculating the probability . . . of the observed data, or of unobserved data more extreme, given the hypothesis and the probability" (Gerrodette, 2011, pp. 404–405). In recent decades, concerns have been raised about the limitations and shortcomings of this approach. Rozeboom (1960) was one of the first to question the utilization of NHST in psychology, stating that "its most basic error lies in

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mistaking the aim of a scientific investigation to be a decision, rather than a cognitive evaluation of propositions" (p. 428). Experimental psychologist Geoffrey Loftus (1996) identified six major problems with NHST and argued that psychology would be a better science if the field adopted a different approach to data analysis. Some editorial boards, such as the one serving *Basic and Applied Social Psychology (BASP),* have heeded this advice and banned NHST (Trafimow & Marks, 2015). In light of these concerns, we should consider if our field has become over reliant on NHST. Alternative approaches, such as Bayesian inference and likelihood ratio testing, have been suggested (see Szucs & Ioannidis, 2017). As we advance into the 21st century, we should explore these alternatives and ensure our approach to statistical analysis is aligned with new approaches to statistical analysis (see Cumming, 2014) and the latest epistemological reasoning.

6. *Is the law of the instrument narrowing our methodological choices?* "It comes as no particular surprise," Abraham Kaplan said, "to discover that a scientist formulates problems in a way which requires for their solution just those techniques in which he himself [sic] is especially skilled" (1964, p. 28). This tendency to design research studies based on one's methodological expertise is known as the law of the instrument. As Kaplan points out, it can be limiting. Based on various literature reviews, the vast majority of published I-O research is based on quantitative methods (see Eby et al., 2009; Pratt & Bonaccio, 2016). This raises an important question: has our field become methodologically narrow minded and lopsided? As Pratt and Bonaccio note, there are multiple reasons I-O psychologists should use qualitative methods (2016). As Edmondson and McManus (2007) argue, the methodologies we use should be based on the level of extant knowledge about the topic we are studying. Considering the complexity of work in the 21st century, now seems like a good time to move beyond methodological dualism (see Yang & Boo, 2018) and bridge the inductive-deductive divide. In applied fields such as nursing and social work, many researchers and practitioners are doing just that, moving toward a pragmatic research paradigm that is based on abductive logic and promotes a mixed method approach to data collection (see Lipscomb, 2012; Yvonne Feilzer, 2010). In our own field, Woo (2019) recently demonstrated how inductive and abductive approaches can be used to understand employee turnover. By exploring these new approaches, we can move our field beyond the limitations of our positivistic past and find new and integrative ways to utilize quantitative and qualitative methods.
7. *How has our field been shaped by sociohistorical forces?* Harre and Moghaddam (2006) note that psychologists tend to view research through an ahistorical lens: Findings are often "presented as, and probably believed . . . to be, universal, pan-temporal laws of human nature" (p. 95). But Rousseau and Fried (2001) remind us that "research is a product of its times" (p. 5). Over the past century, our field has been influenced by several different social and historical forces (see Koppes Bryan, 2021, for a recent review). Any well-trained I-O psychologist knows this. But there is a notable difference between (a) understanding the history of our field and (b) evaluating how sociohistorical factors affect our current-day science and practice. How have dominant ideologies and economic philosophies shaped the studies we design and the research questions we pursue? How have social and political movements impacted the theories we develop and the interventions we implement? Highhouse and Schmitt's analysis (2012) of four longstanding tensions within I-O psychology is a compelling example of the insights that historical reviews can provide. By reflecting on the ways that world events, social concerns, technological advances, political movements, legal regulations, and economic ideologies have influenced our science and practice, we can become more aware of the choices we make as I-O psychologists. Otherwise, we risk being steered by forces of which we are unaware.
8. *Who do we serve?* Because of the applied nature of our field, our work is consequential. The questions and populations we study, the methods and theories we teach, the articles and

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books we write, and the recommendations and interventions we advance have broad economic, political, societal, and ethical implications. In a recent commentary, Lefkowitz (2019) emphasized that because our mandate as psychologists is "to improve the condition of individuals, organizations and society" (See the American Psychological Association's Ethical principles of psychologists and code of conduct (apa.org)), we have a professional and moral responsibility to reflect on who we have served in the past and who we should serve in the future. This has been a topic of concern and debate for decades. Some, like Cascio and Aguinis (2008) and Ployhart (2012), have argued that to remain relevant, our science and practice should address the real-world challenges—like managing human capital and maintaining competitive advantages—that business executives, senior leaders, and human resource practitioners face. Others have said this approach has made us servants of power (Baritz, 1960) and handmaidens of capitalism (Gerard, 2017), focused more on the POSH needs of privileged professionals (Gloss et al., 2017) than the day-to-day struggles of the working class (Bergman & Jean, 2016) and the poor (Berry et al., 2009).

9. *What future do we envision?* We are living in a time of unprecedented challenge and change. The COVID-19 pandemic has strained public health systems, tested governments, toppled companies, disrupted economies, and caused a global mental health crisis. New technologies, including robots, machine learning, and artificial intelligence (AI), are transforming the way we work and ushering in a fourth industrial revolution (Schwab, 2017). Social justice movements are reshaping values, norms, and expectations inside and outside organizations. Climate change and income inequality are causing world leaders and citizens to reconsider their personal, professional, and political choices. Many of the challenges organizations face today are adaptive, rather than technical, problems: They are complex and multicausal and require innovative solutions (Heifetz, 1994). They are also disruptive, raising new ontological, epistemological, and axiological questions for our field. What is the purpose of work and organizations in the 21st century? How will data science and open science impact the way we conduct research? What are the ethical implications of AI? Do we have a public policy role to play when it comes to social, environmental, and economic sustainability? If we are going to live up to our mandate as psychologists, these are the kinds of questions we need to explore and discuss.

Toward a more reflective and reflexive approach to I-O psychology

Identity crises are, by their very nature, disorienting and disruptive. But they can also be reorienting and renewing. In this paper, I have tried to argue that reflection and reflexivity can provide I-O researchers, practitioners, educators, and students with a reorienting perspective and serve as a catalyst for renewing our science and practice. By engaging in the personal practice of self-reflection and self-examination, we can discover our interpretive lens (Denzin & Lincoln, 2000), expose the assumptions, biases, and blind spots we bring to our work, and account for our humanness as social scientists. By reviewing the current state of our epistemological practices, we can question the logic and limitations of our current research methods, identify and consider new methodological approaches, and prevent scientific dogmatism and anachronisms from curbing our curiosity (Rabenu & Tziner, 2018). By engaging in a collective dialog about our field's past, our future, and our values, we can develop a deeper and broader understanding of the impact that I-O psychology has had, and can have, on individuals, organizations, and society.

For reflection and reflexivity to take hold in our field, mindsets, practices, and praxis will need to change. The classroom is a good place to start implementing these changes. As noted earlier, reflection and reflexivity are not currently part of SIOP's recommended education plan for graduate I-O programs. But considering the number of choices that are made in the learning process,

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both by teachers (e.g., which theories and research will I feature; which articles and texts will we read) and students (e.g., which line of research will I pursue; which advisor will I choose), this seems like a glaring oversight. As Brazilian educator and philosopher Paulo Freire stated, "education . . . is never neutral. When we try to be neutral . . . .we support the dominant ideology. Not being neutral, education must be either liberating or domesticating" (1985, p. 17). If this is the case, reflection and reflexivity should be cornerstones of all I-O training programs.

There are many ways faculty and students can work together to embed more reflection and reflexivity into the learning process. Having a critical discussion about the questions posed in this article is one place to start. Exploring various models of reflection (see Nguyen et al., 2014 for a recent review) and reflexivity (see Cunliffe, 2004), and learning how other professional fields—like nursing, medicine, education, and counseling—utilize both concepts is another possibility. Developing a positionality statement (Darwin Holmes, 2020) and comparing perspectives about personal paradigms, philosophies of science, topics of interest, methods of choice, professional values, and career aspirations could also be fruitful and enlightening. Keeping a reflective learning journal, engaging in reflective conversations, and sharing reflective practices and learnings—with peers, teachers, mentors, or advisors—may also yield valuable developmental insights.

These practices should not be limited to the classroom. Early, mid, and late-career scientists and practitioners can benefit from the learnings and insights generated from reflection and reflexivity. Much of the advice we provide as I-O psychologists emphasizes the importance of curiosity (Celik et al., 2016), learning agility (Hoff & Burke, 2017), mental flexibility (Grant, 2021), and adaptability (Van Dam, 2013) at work. Committing to the practice of professional self-reflection is a way for us to practice what we preach.

Reflective practices can also be used at the community level to identify, discuss, and address issues that are affecting our field. According to the principles of generative change (Marshak & Bushe, 2018), social systems can increase their resilience and adaptability by engaging organizational members in generative dialogs about the challenges they face. With over 9,000 members and 60 local communities, SIOP provides a possible global network for fostering these types of dialogs. By convening small and diverse groups of interested scientists and practitioners to engage in reflective dialogs about critical topics, we could tap into the collective wisdom of our field and learn from each other. For example, the scientist—practitioner gap has been a topic of concern—in our field and in others—for decades (Olenick et al., 2018). Intergroup dialogs (Nagda et al., 2012) or polarity management-based discussions (Johnson, 1996) between practitioners and scientists interested in bridging this gap may help identify root causes and identify common ground. Other reflective collaborations, focused on other topics of interest, could also be launched. Communities of learning and communities of practice could be established to explore emerging topics and new scientific and practitioner developments. Scientometric analyses (see König and colleagues, 2018) could be conducted to gain a better understanding of publishing trends in our field. Collaborative inquiries could be initiated to learn how other fields are evolving their epistemologies, methodologies, and praxis. Large group interventions, like open space technology (Owen, 2008) or future search (Weisbord & Janoff, 2000), could be used to discuss the future of work, the future of our field, and the roles and responsibilities we have to our stakeholders and society. Given the size of our field, the diversity of members, and the complexity of modern-day science and 21st-century organizations, arriving at consensus on how to resolve all the challenges we face is probably not possible or even desirable. But metaconsensus—agreement about the breadth, depth, and nature of the issues we face as a field (Niemeyer & Dryzek, 2007)—is critical.

Fifty years ago, American psychotherapist Margaret Rioch (1971) wrote an article entitled *"All we like sheep" (Isaiah 53:6): followers and leaders.* Using verse 53.6 from the book of Isaiah as her point of departure, she explored the dynamics of leadership and followership. Toward the end of the article, she highlighted a common tension that comes with being part of a group:

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> To return to Isaiah, the passage seems to say that there can be no human society so long as each one turns to his (sic) own way. A group cannot function so long as each one insists upon his (sic) own autonomy. But paradoxically neither can a group function if each individual abdicates his autonomy. (p. 177)

The same can be said of our field. We need to share common standards and values to guide our work, evaluate our research, and build evidence-based solutions for real-world problems. We need a core epistemology and axiology to hold us together. But we also need a field full of curious and independent-minded scientists and practitioners, eager to question traditions, push boundaries, and explore new ideas. Otherwise, our work will grow stale. Reflection and reflexivity provide a way for us to explore this tension between adherence and autonomy, evaluate ourselves and our research, expand our skills and capabilities, and evolve our science and practice.

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