SECOND EDITION

HANDBOOK OF Psychology

VOLUME 12
Industrial and Organizational Psychology

Neal W. Schmitt
Scott Highhouse
Volume Editors

Irving B. Weiner
Editor-in-Chief

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WILEY

John Wiley & Sons, Inc.

This book is printed on acid-free paper. ♾

Published by John Wiley & Sons, Inc., Hoboken, New Jersey.
Published simultaneously in Canada.

Library of Congress Cataloging-in-Publication Data:

Handbook of psychology / Irving B. Weiner, editor-in-chief. – 2nd ed.
v. cm.
Includes bibliographical references and index.
ISBN 978-0-470-61904-9 (set) – ISBN 978-0-470-76887-7 (cloth : v. 12); ISBN 978-1-118-28200-7 (ebk); ISBN 978-1-118-28378-3 (ebk); ISBN 978-1-118-28539-8 (ebk)
1. Psychology. I. Weiner, Irving B.
BF121.H213 2013
150–dc23

2012005833

Printed in the United States of America
10 9 8 7 6 5 4 3 2 1

Editorial Board

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Handbook of Psychology Preface

The first edition of the 12-volume *Handbook of Psychology* was published in 2003 to provide a comprehensive overview of the current status and anticipated future directions of basic and applied psychology and to serve as a reference source and textbook for the ensuing decade. With 10 years having elapsed, and psychological knowledge and applications continuing to expand, the time has come for this second edition to appear. In addition to well-referenced updating of the first edition content, this second edition of the *Handbook* reflects the fresh perspectives of some new volume editors, chapter authors, and subject areas. However, the conceptualization and organization of the *Handbook*, as stated next, remain the same.

Psychologists commonly regard their discipline as the science of behavior, and the pursuits of behavioral scientists range from the natural sciences to the social sciences and embrace a wide variety of objects of investigation. Some psychologists have more in common with biologists than with most other psychologists, and some have more in common with sociologists than with most of their psychological colleagues. Some psychologists are interested primarily in the behavior of animals, some in the behavior of people, and others in the behavior of organizations. These and other dimensions of difference among psychological scientists are matched by equal if not greater heterogeneity among psychological practitioners, who apply a vast array of methods in many different settings to achieve highly varied purposes. This 12-volume *Handbook of Psychology* captures the breadth and diversity of psychology and encompasses interests and concerns shared by psychologists in all branches of the field. To this end, leading national and international scholars and practitioners have collaborated to produce 301 authoritative and detailed chapters covering all fundamental facets of the discipline.

Two unifying threads run through the science of behavior. The first is a common history rooted in conceptual and empirical approaches to understanding the nature of behavior. The specific histories of all specialty areas in psychology trace their origins to the formulations of the classical philosophers and the early experimentalists, and appreciation for the historical evolution of psychology in all of its variations transcends identifying oneself as a particular kind of psychologist. Accordingly, Volume 1 in the *Handbook*, again edited by Donald Freedheim, is devoted to the *History of Psychology* as it emerged in many areas of scientific study and applied technology.

A second unifying thread in psychology is a commitment to the development and utilization of research methods suitable for collecting and analyzing behavioral data. With attention both to specific procedures and to their application in particular settings, Volume 2, again edited by John Schinka and Wayne Velicer, addresses *Research Methods in Psychology*.

Volumes 3 through 7 of the *Handbook* present the substantive content of psychological knowledge in five areas of study. Volume 3, which addressed *Biological Psychology* in the first edition, has in light of developments in the field been retitled in the second edition to cover *Behavioral Neuroscience*. Randy Nelson continues as editor of this volume and is joined by Sheri Mizumori as a new co-editor. Volume 4 concerns *Experimental Psychology* and is again edited by Alice Healy and Robert Proctor. Volume 5 on *Personality and Social Psychology* has been reorganized by two new co-editors, Howard Tennen and Jerry Suls. Volume 6 on *Developmental Psychology* is again edited by Richard Lerner, Ann Easterbrooks, and Jayanthi Mistry. William Reynolds and Gloria Miller continue as co-editors of Volume 7 on *Educational Psychology*.

Volumes 8 through 12 address the application of psychological knowledge in five broad areas of professional practice. Thomas Widiger and George Stricker continue as co-editors of Volume 8 on *Clinical Psychology*. Volume 9 on *Health Psychology* is again co-edited by Arthur Nezu, Christine Nezu, and Pamela Geller. Continuing to co-edit Volume 10 on *Assessment Psychology* are John Graham and Jack Naglieri. Randy Otto joins the Editorial Board as the new editor of Volume 11 on *Forensic Psychology*. Also joining the Editorial Board are two new co-editors, Neal Schmitt and Scott Highhouse, who have reorganized Volume 12 on *Industrial and Organizational Psychology*.

The *Handbook of Psychology* was prepared to educate and inform readers about the present state of psychological knowledge and about anticipated advances in behavioral science research and practice. To this end, the *Handbook* volumes address the needs and interests of three groups. First, for graduate students in behavioral science, the volumes provide advanced instruction in the basic concepts and methods that define the fields they cover, together with a review of current knowledge, core literature, and likely future directions. Second, in addition to serving as graduate textbooks, the volumes offer professional psychologists an opportunity to read and contemplate the views of distinguished colleagues concerning the central thrusts of research and the leading edges of practice in their respective fields. Third, for psychologists seeking to become conversant with fields outside their own specialty and for persons outside of psychology seeking information about psychological matters, the *Handbook* volumes serve as a reference source for expanding their knowledge and directing them to additional sources in the literature.

The preparation of this *Handbook* was made possible by the diligence and scholarly sophistication of 24 volume editors and co-editors who constituted the Editorial Board. As Editor-in-Chief, I want to thank each of these colleagues for the pleasure of their collaboration in this project. I compliment them for having recruited an outstanding cast of contributors to their volumes and then working closely with these authors to achieve chapters that will stand each in their own right as valuable contributions to the literature. Finally, I would like to thank Brittany White for her exemplary work as my administrator for our manuscript management system, and the editorial staff of John Wiley & Sons for encouraging and helping bring to fruition this second edition of the *Handbook*, particularly Patricia Rossi, Executive Editor, and Kara Borbely, Editorial Program Coordinator.

Irving B. Weiner
Tampa, Florida

Volume Preface

The previous version of this volume was edited by Wally Borman, Dan Ilgen, and Rich Klimoski. Scott Highhouse and I hope that this edition of *Industrial and Organizational Psychology* reflects the same excellence and has the same impact as that volume. As we are sure any reader (or author/editor) will realize, it is easier to do a revision that builds on the strength of the first version of a volume than to organize and solicit the original set of papers. Sixteen of the 26 chapters in this volume were written by at least one of the authors of the previous volume. Three chapters represent content addressed in the previous volume, but by new authors. We have seven completely new chapters, three of which are in a new Part One (Chapter 1, by Scott Highhouse and Neal Schmitt; Chapter 2, on causal inference, by Richard DeShon; and Chapter 3, on communicating research findings, by Nathan Kuncel and Jana Rigdon). Chapter 1 points to areas of concern that we could and should address in future research. Chapter 2 considers the way in which various approaches to research design and analysis allow for causal inferences about the relations among the variables we study. Conducting excellent research does nothing for the society or organizations at large if we cannot effectively communicate the results and implications of our work. Chapter 3 addresses this concern.

The second part in this volume addresses topics that might have been labeled industrial or personnel psychology in the past. The first seven chapters in this part were revised by the authors of the same chapters in the previous volume. All of these authors provide important updates reflecting research and practice since the last edition of this volume. We have added two chapters to this section. Chapter 11, by David Harrison and Daniel Newman, addresses withdrawal behavior. Turnover has always been a concern of some organizations, but psychologists have recognized that a final decision to leave an organization may be part of a process that includes a variety of behaviors that result in a formal withdrawal from an organization. In Chapter 12, Daniel Feldman and Thomas Ng consider the behavior of individuals as they move from one job to another, achieve a promotion, lose a job, become expatriates, or decide to retire. Given the rapid changes in the workforce and the economic turmoil faced by organizations and individuals in the past decade, this chapter seems particularly timely.

The third part, consisting of chapters that have usually been labeled organizational psychology, were all part of the first volume, but two are written by new authors: Chapter 13, by Aaron Schmidt, James Beck, and Jennifer Gillespie; and Chapter 14, by Reeshad Dalal. In all of these chapters there are major revisions that reflect the vitality of the research in this area.

The fourth part of the volume reflects aspects of the work environment that affect the well-being and behavior of individuals in organizations. In this section, we introduce two new chapters. In Chapter 23, Steve Jex, Naomi Swanson, and Paula Grubb speak to the manner in which the work lives of individuals affect their physical and mental health. In the past several decades, women have become an increasingly large component of our workforce, and very likely as a function of that change there has come a concern with how both men and women handle the inevitable conflicts between the demands of work and one's life outside work, especially when both partners are employed outside the home. In Chapter 26, Tammy

Allen describes the research that addresses the work–life interface.

We have been uniformly impressed with the thoughtful and thorough discussions that are part of each of the chapters in this volume. As outlined above, we have made some significant changes in this volume. It is very likely that when this volume is revised in coming decades, there will be new changes, reflecting a growing and exciting area of psychological research and practice. We appreciate the work by all the authors of this volume and feel confident that each chapter that you read will have an impact on your research and practice in the areas addressed.

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PART I

Conducting and Communicating Research in Industrial–Organizational Psychology

CHAPTER 1

A Snapshot in Time: Industrial–Organizational Psychology Today

SCOTT HIGHHOUSE AND NEAL W. SCHMITT

As we write this chapter, the field of industrial–organizational psychology in the United States has survived its third attempt at a name change. To provide a little perspective, the moniker *industrial psychology* became popular after World War I, and described a field that was characterized by ability testing and vocational assessment (Koppes, 2003). The current label, industrial–organizational (I-O) psychology, was made official in 1973. The addition of *organizational* reflected the growing influence of social psychologists and organizational development consultants, as well as the intellectual and social milieu of the period (see Highhouse, 2007). The change to I-O psychology was more of a compromise than a solution—which may have succeeded only to the extent that everyone was equally dissatisfied. The first attempt to change this clunky label, therefore, occurred in 1976. Popular alternatives at the time were *personnel psychology*, *business psychology*, and *psychology of work*. The leading contender, however, was *organizational psychology* because, according to then-future APA Division 14 president Arthur MacKinney, "all of the Division's work is grounded in organizational contexts" (MacKinney 1976, p. 2). The issue stalled before ever making it to a vote of the full membership, but it simmered for nearly 30 years.

Although a name change initiative finally went to a vote in 2004, many were not satisfied with a process in which none of the alternatives garnered more than 50% of the ballots. Landy (2008) argued persuasively that he and many past division presidents were dissatisfied with an I-O moniker that seemed old-fashioned, too long, and out of step with international labels. As such, after a runoff of possible names, I-O psychology was pitted against organizational psychology in a 2010 vote of the membership of the Society for Industrial and Organizational Psychology (SIOP). It seemed that the nearly 40 years of discontent would finally be resolved with a name with which everyone could live. Alas, *industrial-organizational psychology* prevailed by a mere 15 votes (over 1,000 votes were cast)!

Perhaps it is fitting that our name remains a source of tension, as our field is filled with many fundamental tensions. In this chapter, we briefly discuss some of the tensions that have characterized I-O psychology and continue to exist at different degrees of force.

It is important to keep in mind that tensions are not necessarily bad. Kurt Lewin contended that tensions reflect a body that is alive and well, and, without tensions, we are not learning or accomplishing things.

"I" VERSUS "O" TENSION

The tension between a testing and selection (I-side) focus versus attitudinal and social (O-side) foci has existed

Author Note: We are very grateful to the following people who took the time to provide their thoughtful contributions to this chapter: Herman Aguinis, Clay Alderfer, Neal Anderson, Talya Bauer, Terry Beehr, David Chan, Dave Day, Kevin Ford, John Hazer, Chuck Hulin, Steve Kozlowski, Ron Landis, Joel Lefkowitz, Mike McDaniel, Fred Oswald, Rob Ployhart, Bob Pritchard, Chuck Reeve, Bob Sinclair, Paul Spector, Donald Truxillo, Jeff Vancouver, Bob Vandenberg, and Fran Yammarino.

for at least 50 years. Employee selection has remained a dominant theme throughout the history of I-O psychology (Zickar & Gibby, 2007). Koppes and Pickren (2007) examined published I-O research between 1887 and 1930 and found that, with the exception of research on advertising, I-side research was predominant. Mason Haire (1959) used the term *industrial social psychology* to describe an alternative field that emphasized group processes, motivation, and attitude assessment and had an implicit humanistic foundation. During the same period, prominent scholars were advocating a more systems view of organizations, acknowledging the interrelatedness of an organization and its environment (Katz & Kahn, 1966; Schein, 1965). In order to enlarge the industrial psychology tent, therefore, the name of the field became I-O psychology ("Notification," 1970). Commenting on the marriage of I-side and O-side topics, outgoing Division 14 president Robert Guion stated, "I think that there is no real great difference between traditional industrial psychology and what has become called organizational psychology so far as the topics are concerned. I think the difference has been more in methods and I would like to see more rigor in the methods, regardless of what people call themselves" ("TIP Talks," 1973, p. 30). This comment reflected concerns about the perceived softness of research and practice on many O-side topics (e.g., attitude change, team building). The tables turned over the years, however, in that I-side researchers have been criticized for ignoring theory (Landy, 1986) and for failing to address issues about which managers care (Cascio & Aguinis, 2008).

Perhaps the current attention to levels of analysis issues will further blur this distinction between industrial psychology and organizational psychology. Ployhart and Moliterno (2009) described a multilevel model of human capital resources that links the aggregate unit-level resources to individuals' knowledge, skills, and abilities via a set of emergence-enabling states, which establish the social environment at the unit level. Moreover, task complexity at the unit level influences the type of behavioral, social, and affective enabling states that manifest themselves at the unit level. If one begins to study the organization and the individuals in it at different levels of analysis, one is forced to study and understand factors that have been characterized in the past as either industrial or organizational topics. Examples of I-O factors considered in this manner are beginning to appear in our journals (e.g., Ployhart, Weekley, & Ramsey, 2009; Sacco & Schmitt, 2005; Van Iddekinge et al., 2009) and, in each case, involve a merging of individual difference factors with unit and organizational characteristics and processes in the explanation of unit and organizational outcomes. These models require that both I and O factors be considered in any explanation of human behavior in organizations.

PSYCHOLOGY VERSUS BUSINESS TENSION

The emigration of I-O psychologists and I-O training to business schools has been a long-time source of concern in the field (Highhouse & Zickar, 1997; Lawler et al., 1971; Naylor, 1971; Ryan & Ford, 2010). Ryan and Ford suggested that the distinctiveness of I-O psychology as a discipline is threatened when a majority of the scholarly gatekeepers and influencers are housed in schools of business. Table 1.1 shows the current location of people who won the SIOP early career award during the first decade of this century. Note that only 3 of the 12 award winners are currently housed in psychology departments. The remainder are in management (or related) departments in business schools. If we take these numbers as indicators of where the future and current stars of the field of I-O are doing their research and teaching, they suggest that only one of every four are training future I-O psychologists.

Judge (2003) noted that research-oriented business schools do not consider the leading I-O psychology journals (e.g., *Journal of Applied Psychology*, *Personnel Psychology*) to be the "right" journals. Adapting one's research program to management journals, however, often results in moving from a more micro (i.e., psychological) emphasis to a more macro (i.e., sociological or economic) emphasis (Staw, 1991). This may at least partially explain

TABLE 1.1 Winners of the SIOP Distinguished Early Career Contributions Awards 2000–2010

Awardee	Year	2011 Home Institution
Dan Cable	2001	London Business School
Jose Cortina	2001	George Mason University*
Michele Gelfand	2002	University of Maryland*
David Chan	2003	Singapore Management University
Jeffrey LePine	2004	University of Florida
Jason Colquitt	2005	University of Florida
Filip Lievens	2006	Ghent University*
Gilad Chen	2007	University of Maryland
Joyce Bono	2007	University of Minnesota
Remus Ilies	2008	Michigan State University
Hui Liao	2009	University of Maryland
Riki Takeuchi	2010	Hong Kong University of Science and Technology

*Located in the Department of Psychology.

why studying topics at higher levels of analysis (see the articles cited earlier) has so engaged I-O psychology researchers in recent years. Even traditional I-O topics, such as assessment and selection, are now being viewed from the lens of strategy or supply-chain management (e.g., Cascio & Boudreau, 2011). Whereas this may provide some positive benefits to the field by making it more interdisciplinary, there is a danger that I-O psychology becomes synonymous with human resources management or organizational behavior (see Ryan & Ford, 2010, for an elaborated discussion of this). Later, we discuss in more detail concerns about the competing pressures that I-O psychologists in psychology departments face from the I-O practitioner community and from constituencies at their home institutions.

Management Customer Versus Worker Customer Tension

The question of whether I-O psychology serves managerial concerns or worker concerns was the focus of Loren Baritz's classic 1960 book (Baritz, 1960), *The Servants of Power*. Baritz, a sociologist, argued that the rise of industrial psychology between 1913 and 1920 corresponded with an upsurge of managerial interest in increasing profits by increasing attention to the human element. This resulted in a science, according to Baritz, that was beholden to the interests of managers rather than to the interests of the less powerful workers. Contributing to this perspective were high-profile indictments of employment testing in popular books published in the 1950s and early 1960s (i.e., *The Organization Man*, *The Brainwatchers*), which painted the picture of psychologists as management shills interested only in identifying potential employees who might be more easily exploited by management.

Most I-O psychologists view themselves as serving both management and workers when they ensure hiring is merit based, or when they help organizations create environments that are satisfying and motivating for people (Avedon & Grabow, 2010). There are compelling minority voices, however, that suggest that I-O psychologists must include humanist values among its core principles (e.g., Lefkowitz, 2010). Also, with the decline in union representation over the past several decades, the conflict between management and union interests does not receive the same attention in the United States that it receives in other countries. I-O psychologists are almost always perceived by union representatives as being aligned with management (see Gomberg, 1957, and Zickar, 2004, for a summary of early views that may still be current), and, of course, they are almost always employed by management. A consideration of union views on topics of interest to I-O psychologists (e.g., selection, training, organizational commitment, organizational citizenship behavior, counterproductive work behavior, seniority) would yield very different perspectives and might even involve reconceptualizations of some constructs (Conlon & Gallagher, 1987; Gordon, Philpot, Burt, Thompson, & Spiller, 1980).

Alternatively, there are some voices in the I-O community calling for *more* attention to business concerns (Cascio & Aguinis, 2008; Ployhart, 2012). Cascio and Aguinis (2008) argued that I-O psychologists are failing to address in their research problems of significance to human resource practitioners, senior managers, or outside stakeholders. Instead, they argue that I-O researchers must pay close attention to current and future "human capital trends" in order to be relevant. We are less concerned about the need for I-O psychology to be following business trends. One of the authors of this chapter has argued, for example, that "We should not be a field that merely services organizational problems, and we should not allow research programs to be dictated by rapidly fluctuating economic conditions and management whims" (Highhouse, 2006; p. 205). We do, however, believe that there can be a role for psychology in understanding issues like corporate planning and strategy. Ployhart (2012) has observed that strategy scholars are increasingly turning their attention toward "microfoundations" of competitive advantage. He suggested that I-O psychologists have an important role to play in helping to identify resources that present advantages for a specific firm, relative to another. Such thinking, however, requires a shift from identifying general principles of behavior toward identifying context-dependent issues that may or may not generalize.

SCIENCE VERSUS PRACTICE TENSION

The paramount tension in I-O psychology is the perceived science versus practice gap. I-O psychologists attempt to balance the very different roles of scientist (developing and testing theories) and practitioner (solving real-world problems). Those who succeed in this endeavor are championed scientist-practitioners and, according to Walker (2008), "are the true heroes of our profession and should therefore be held in high regard" (p. 1). The black hats are presumably worn by exclusive academics and pure consultants.

It is important to realize that I-O psychology is not alone in acknowledging a gap between science and practice. Belli (2010) noted that hundreds of scientific articles have been published on the research–practice gap, theory–practice divide, or some combination of those terms. Fields ranging from social work to foreign policy studies have lamented the poor connection between science and practice. Many in the marketing profession, for example, lament the fact that marketing scholarship is not instructing them on how to effectively market a product or service. Brennan (2004) cautioned marketing scholars, however, against an uncritical rush toward management relevance "since their claim to a unique position in the knowledge process relies on maintaining objectivity and a certain distance from the day-to-day pressures of marketing management" (p. 492).

Murphy and Saal (1990) noted that the scientist-practitioner model might better describe the multiple roles that *different* members of the field take on, as opposed to describing the multiple roles that *each* I-O psychologist must fill. They suggest that there is an important place for people who do only basic research, as well as for those who do only practice. It is unrealistic to expect everyone to take on both roles. Anderson (2007) made a similar point, arguing that the so-called gap is a perfectly natural distance between two wings of a discipline. He noted that the distance between pure science and pure practice is not harmful when appropriate bridging mechanisms exist. The SIOP holds an annual conference that is well attended by both scholars and practitioners, and it sponsors a journal that encourages commentary from both camps. To the extent that SIOP continues to satisfy both constituencies with these bridging mechanisms, the field stands as a good example of the scientist-practitioner model. We do worry about the ability for SIOP to maintain that balance, when many scholars complain that the conference lacks a research focus and many practitioners complain that the conference is too scientific. We may find I-O scholars drifting more and more toward the Academy of Management conference, which is not geared toward practitioners.

Rynes (in press) recently completed a comprehensive discussion of the science versus practice gap in I-O psychology. One thing she noted is that disagreements among academics—a characteristic endemic to and healthy for science—create an impression that there are too few principles that can guide practice. Although it is true that academics celebrate "gray areas" and practitioners search for certainty, the problem-solving skills and emphasis on continuous learning that are central to a rigorous science-based curriculum and graduate school experience will serve both practitioners and academics well and serve to generate an appreciation of the different roles played by I-O psychologists by all in the profession. Doctoral programs that train I-O psychologists must first and foremost train researchers regardless of the context in which they work.

Other Tensions

As part of our attempt to provide a snapshot of I-O psychology today, we sent I-O program directors and prominent members of scholarly societies (i.e., Society for Organizational Behavior, Personnel and Human Resources Research Group) an e-mail inquiring about issues on their minds in 2010. Specifically, we asked these people, among other things, what they think are the most pressing issues I-O psychologists should be addressing. Fred Oswald reminded us that a similar inquiry had been made 30 years ago by Campbell, Daft, and Hulin (1982). As part of their effort, Campbell and his colleagues identified a number of "conflicting positions" within their sample of I-O psychologists. These conflicts are presented in Figure 1.1, along with representative comments from our 2010 respondents. As you can see, some issues have faded from concern (e.g., cognition vs. behaviorism), but many tensions are alive and well. For example, the issue of whether the field is too focused on theory (or not focused enough) continues to be a source of tension. One of our respondents commented: "Rarely does a paper really describe a clear theory test, or a comparative test of two competing theories." Another commented:

> In sum, it is less a matter of turning our attention to different constructs to study—we have a lot of those already. . . . Rather, it's going back to the basics with regard to pushing researchers to do a better job of developing strong causal inferences. . . .

This person is concerned with the overabundance of meditational models, based on passive observation, using data collected roughly at the same period of time. Drawing causal inferences from such models is often dubious and keeps us from adequately testing inferences about cause and effect.

Another respondent was concerned less about theory and more about relevance in I-O psychology. According to this person:

> The need for pragmatic science in our field is undeniable; we are well placed to benefit from more practically relevant research agendas being pursued and funded and, yet, we somehow seem to lose ourselves in the detailed minutia,

Side One	Side Two	Representative Comments from 2010
Research should be carried out in a theoretical context and should be directed at theory testing.	We have too much "theory" in I-O psychology. We need to go after ecologically important (i.e., practical) questions.	"My point is that theories generalize . . . ." — "I think the emphasis on theory over practice is not on a sustainable course."
We need broader, more generally applicable theory.	We need narrower, more detailed theories that are appropriate for specific domains of behavior.	Did not emerge as a tension.
Descriptive studies are bad. They pile up uninterpretable data and do not lead anywhere.	Descriptive studies are good. We have very little knowledge of the behavior we are trying to research.	"Better integration of lab-based studies and field studies to produce findings that are more rigorous and relevant." — "I think just about every area of I-O science and practice could gain insights from qualitative research and that I-O grad students could benefit from a greater emphasis on training in qualitative methods and approaches, such as running focus groups, interpreting narrative comments, etc."
There is too much emphasis on measurement for measurement's sake.	There is too little emphasis on valid measurement. The field is replete with lousy unvalidated measures.	Did not emerge as a tension.
Research should focus on the processes within the individual or group that describe the causal sequences. We need understanding, not prediction.	Research should focus on important outcomes as dependent variables. That is, we must try to predict and explain the bottom line.	"I believe the field should deemphasize the conceptualization of theory as the description of relationships and focus more on the explanation of relationships." — "We need to treat organizational performance as the [criterion] in addition to individual job performance."
An information processing (cognitive) model is our best foot forward.	A functional, behavioristic stimulus control approach will pay the biggest dividends.	Did not emerge as a tension.
Perhaps capitalism is not the only value system in which we should do research. For example, what happens if we take a Marxist perspective?	The U.S./capitalist/profit incentive system is the value system within which we should work.	"Rather than adopt a managerial perspective, perhaps we should adopt more of a societal perspective." — "Managers are the ultimate consumers of our science, and we know almost nothing about what our customers want."
Organizations are dehumanizing institutions.	The quality of the people in the work force is declining sharply.	Did not emerge as a tension.
We have learned virtually nothing about organizational behavior.	We have learned virtually nothing about organizational behavior.	"To be a bit provocative, How well do Industrial–Organizational psychologists understand individuals, groups, and organizations?" — "We know a lot, but we always hedge . . . . We need to do a better job of translating our knowledge into policy."

Figure 1.1 Conflicting positions in Campbell, Daft, and Hulin (1982), along with 2010 scholar comments

> and the hegemony of dominant methodological and epistemological approaches.

This person represents the view of many that I-O psychology needs to focus on relevance to stakeholders, even at the expense of methodological precision.

Certainly, the views expressed here are not incompatible. Greater theory does not preclude greater relevance. As one of our contributors noted, "Theories generalize"—a modern translation of Lewin's dictum, "There is nothing so practical as a good theory" (quoted in Marrow, 1969). Too often, we mistake methodological rigor and superficial characteristics of the setting and sample with generalizability (Highhouse, 2009; Highhouse & Gillespie, 2009). However, we run the risk of talking only to ourselves when we become hyperconcerned with pedantic science (Anderson, Herriot, & Hodgkinson, 2001) and when we insist that all studies present definitive data based on a complete theoretical model (Sutton & Staw, 1995).

Looking Forward

In looking through our respondent comments, we saw little consistency in future directions for the field. This is probably reflective of a more diverse set of topics of interest to I-O psychologists, along with a growing internationalization of the field. Illustrative of this is the large set of topic labels used to categorize presentations at the SIOP conference. Table 1.2 shows the topic labels used for the 2011 conference in Chicago, along with the percentage of presentations in each category. This table shows that even though selection-related topics (e.g., job analysis, legal issues, personality, testing) still constitute approximately one fourth of the content at SIOP, many topics have been less commonly associated with I-O psychology. For example, occupational health, retirement, and work–family issues were well represented, as well as international- and diversity-related issues.

TABLE 1.2 2011 SIOP Presentation Categories

	#	%
Careers/Mentoring/Socialization/Onboarding/Retirement	39	4.44%
Coaching/Leadership Development	21	2.39%
Consulting Practices/Ethical Issues	9	1.03%
Counterproductive Behavior/Deviance	23	2.62%
Emotions/Emotional Labor	27	3.08%
Employee Withdrawal/Retention	15	1.71%
Global/International/Cross-Cultural Issues	35	3.99%
Groups/Teams	44	5.01%
Human Factors/Ergonomics	3	0.34%
Inclusion/Diversity	48	5.47%
Innovation/Creativity	11	1.25%
Job Analysis/Job Design/Competency Modeling	14	1.59%
Job Attitudes/Engagement	46	5.24%
Job Performance/Citizenship Behavior	17	1.94%
Judgment/Decision Making	9	1.03%
Leadership	58	6.61%
Legal Issues/Employment Law	8	0.91%
Measurement/Statistical Techniques	29	3.30%
Motivation/Rewards/Compensation	25	2.85%
Occupational Health/Safety/Stress & Strain/Aging	32	3.64%
Organizational Culture/Climate	24	2.73%
Organizational Justice	14	1.59%
Organizational Performance/Change/Downsizing/OD	13	1.48%
Performance Appraisal/Feedback/Performance Management	30	3.42%
Personality	48	5.47%
Research Methodology	27	3.08%
Staffing	47	5.35%
Strategic HR/Utility/Changing Role of HR	15	1.71%
Teaching I-O Psychology/Student Affiliate Issues/Professional Development	21	2.39%
Testing/Assessment	71	8.09%
Training	31	3.53%
Work and Family/Non-Work Life/Liesure	24	2.73%
Total	878	100%

With that being said, there were some broader concerns of our respondents that are worth touching upon. Some of these concerns emerge in this volume of the *Handbook*. These include (a) more consideration of time in research and theory, (b) more attention to the meaning of work, (c) greater consideration of worker well-being, and (d) the future of I-O training in psychology departments.

Time and Change

A number of our respondents commented on the need to better appreciate, both methodologically and conceptually, the role of time in theories of work behavior. As one person said:

> I think the field needs to get serious about incorporating time in theories (process cannot be a box!) and about conducting more sophisticated research that goes beyond cross-sectional designs.

Another commented:

> Similarly, we need to recognize that most phenomena in the real world are temporal and dynamic, as opposed to static and cross-sectional, and this should push us to pay more attention to changes over time and longitudinal assessment.

These comments, and others, seem to raise two issues simultaneously. The first is that individual and organizational change needs to be studied more systematically. The second issue is that causality is impossible to establish with cross-sectional research designs. Both concerns can be partially addressed by longitudinal or moment-to-moment research designs, but both concerns also seem to reflect a passive–observational (aka correlational) perspective on I-O research. Experimental research can also be used to study change and to establish causality. As one contributor noted:

> As a field, we need more intervention studies! . . . intervention effectiveness can be a key diagnostic test of theory . . . if interventions are designed to enhance or debilitate a mediating mechanism, then the relationship between the exogenous and endogenous constructs should be increased/decreased respectively.

We believe that more appreciation of the use of strong inference (Bouchard, 2009; Platt, 1964) could provide a more efficient route to studying change.

Correlational attempts to measure change should also involve data collection that is not just longitudinal, but theoretically tied to the timing of the process one is studying. Longitudinal research is becoming more common in our field, but very often the timing of data collection is opportunistic and not meaningfully connected to critical process concerns. When one sees that the average tenure of persons in an employee socialization project that is pitched as longitudinal is 10 years and data were collected annually over the past 5 years, one has no confidence that critical features of the socialization process that occur early in one's tenure in an organization have been captured. Note that this caveat imposes an obligation on theorists to specify when and how long theoretical processes unfold and on researchers seeking to test the theory an obligation to stagger data collection efforts in such a way that critical processes can actually be captured.

Work Meaning

Some of the comments we received suggested a greater focus on the role of work in people's lives. The idea is that work defines us and provides meaning. Psychologists, therefore, need to concern themselves more with the fundamental functions of work that define human nature. Accordingly, one respondent noted:

> Work and the study of work is not a minor applied offshoot of psychology writ broadly. It is arguably the most important and defining characteristic of individuals today and in the past. We need to attempt to move its study into the center of psychology rather than tuck it away into the corner office in the basement.

Another respondent noted:

> Much of I-O work is pretty technical and theoretical, so nonexperts have a tough time relating. Studies of things that people experience themselves are easier for them to connect to.

These calls for orienting I-O more toward studying the person at work are similar to Weiss and Rupp's (2011) recent call for a more person-centric work psychology. Weiss and Rupp argued that the current paradigm in I-O treats workers as objects, rather than trying to understand their experiences at work. A similar view has been expressed by Hulin (2011) in which he encouraged work researchers to examine popular music and literature, among other things, for reactions to work. Studs Terkel's 1974 book *Working* is the classic example of this type of information, but similar and more current reactions are available in Bowe, Bowe, and Streeter (2000) and in Internet blogs. These ethnographic sources of information about the impact of work on people have been underutilized by I-O scholars.

Worker Well-being

A related but different concern that arose in some comments of our respondents was a trend toward more I-O focus on worker well-being. For example, one respondent commented:

> A greater focus on the individual employee, and not simply the organization or employer. I realize the latter are the ones who support our work financially, but we really do have an obligation to workers and how what we do affects them as people.

Some of these respondents felt that too little attention was given to worker physical and financial well-being, relative to attention paid to increasing worker output. For example, one respondent commented:

> Deemphasizing performance as the ultimate criterion and increasing emphasis on survival, well-being, and similar outcomes. There are multiple worldwide economic, environmental, etc. trends with significant implications for organizational practice and/or organizational science but that have received disproportionately little attention in I-O.

These calls echo Lefkowitz's (2010) call for a more humanistic I-O psychology, and are based on a belief that

I-O could increase its relevance by addressing societal needs, in addition to business needs.

An area in which it seems to us I-O psychologists could (and should) contribute is that of worker health. While we have addressed concerns about mental health, stress, and its correlations with aspects of the workplace, we have not done much with the impact of work on physical health. Many workplaces now provide various opportunities to exercise or take part in physical regimens designed to promote health. These facilities are often underutilized, and even those who do use them often cease to continue after a relatively short period of time. The motivation of such participation and continued participation should be investigated and be part of interventions developed and evaluated by psychologists. Similarly, the demands of work and long commutes often result in dietary practices that increase obesity and other negative health outcomes. Psychologists could contribute to the adoption of better dietary practices among working adults.

Although research into work–family conflict has increased dramatically in the past couple of decades, and we have meta-analyses of the antecedents and consequents of work–family conflict, we have done little by way of evaluating effective interventions at either the family or work level that might reduce this conflict. Research on how to foster more effective family and work situations, along with evaluation of interventions, seems overdue.

Yet another area in which research and interventions ought to be developed involves the welfare of workers who have lost jobs and cannot secure new employment. In the recent recession, the official unemployment rate in the Detroit area hovered between 20% and 30%. Unofficially, it was estimated that a similar percentage were underemployed or were no longer seeking employment. The impact of this unemployment on the workers (most dramatically an increase in suicide rates) and their families can be catastrophic, yet very little research on these issues appears in our literature. Nor are organizations that serve this population the target of our research and interventions. One example of what can be done in this regard is a series of studies reported by Harrison (1995). Interested in understanding the motivation of volunteers in a homeless shelter to continue their volunteer commitment, Harrison began his work with participant observation (he worked as a volunteer in a homeless shelter), which served as the partial basis of a survey of recent and current volunteers exploring their reason for both volunteering and then later discontinuing their participation. The survey evaluated the efficacy of a theory of planned behavior (Ajzen, 1991), the theory of reasoned behavior (Fishbein & Ajzen, 1975), and a theory emphasizing the subjective expected utility of anticipated rewards. A theory that included provision for a moral obligation component was superior across time and samples. This research was conducted in a nontraditional setting with an unusual sample, along with attention to theoretical implications and rigorous measurement of constructs.

Training Future I-O Psychologists

A final theme that emerged from our respondents had more to do with the health of I-O psychology as an academic discipline. This was a concern over the ability to keep I-O psychologists in psychology departments and thus produce future I-O psychologists. I-O psychologists in psychology departments face lower salaries relative to their counterparts in management departments, and are faced with demands often not appreciated by practitioners in the field. Whereas practitioners often call for I-O faculty to train interpersonal and business skills and produce research that is immediately relevant (e.g., Silzer & Cober, 2011), universities are pressuring them to produce research that may be supported by external funding. Funding agencies such as the National Science Foundation (NSF) and the National Institutes of Health (NIH) typically support basic (not applied) research. As one contributor commented:

> What is the role of I-O psychology in psychology departments in coming years? The demands for federal funding obviously place us in a precarious position relative to areas such as cognitive or behavioral neuroscience.

Certainly, some topics (e.g., teams, leadership) are of interest to funding sources from the military, but many core areas of I-O are of more interest to private industry, which has become less and less inclined to fund research and development activities. It would be a shame if the field of I-O shaped its priorities around only fundable topics.

I-O faculty in research-oriented departments also face pressures within their own departments to be less applied and more scientific. To remain locally relevant, I-O faculty need to be seen as doing the science of psychology. One respondent commented:

> I think the issue of replication of I-O is an important one—unless people only want MA programs or professional PhDs in I-O there needs to be more of a focus on long-term sustainability of I-O programs in psychology programs—or we are no longer a psychology-based discipline. This must acknowledge the pressures psychology programs are facing, including the increased pressure for grant activity and bringing money into the department to fund graduate students. We