Edited by Eduardo Salas, Ramón Rico, and Jonathan Passmore

The Wiley Blackwell Handbook of

The Psychology of Team Working and Collaborative Processes

Wiley Blackwell

The Wiley Blackwell Handbook of the Psychology of Team Working and Collaborative Processes

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Foreword

The World Bank reported in 2012 that capital investment in teams represented approximately 20% of the world's economy, owing to the necessity for organizations to increase their efficiency and effectiveness. Little or no work in organizations is performed today by an individual who is working alone. Thus, the ability of an individual is important, but not sufficient, for enhancing a team's effectiveness. This is because of the amount of communication, coordination, mutual support, and sharing of information required of the individuals that comprise a team.

A team consists of two or more individuals who have the same goals to attain. These individuals perform interdependent tasks collaboratively to produce shared deliverables. Because of the intense global competition for increasing market share, increasing profits, and decreasing costs, organizations are forming cross-functional teams to examine ways in which they can improve customer service, discover new revenue streams, and meet, if not exceed, shareholder demands. Consequently, a team's performance is a more complex interactive undertaking than solely improving the skills of an individual. A team's leader must foster in the team's members a shared mental model of the goals and ways of attaining them, the role each member plays in goal pursuit, as well as the interdependent roles of the other team members. A team's leader must foster widespread agreement within the team of what success looks like. A team will fail if its members perceive that they are being pulled in different directions by competing goals.

All of the above is easy to espouse, not so easy to put into practice. Hence, the reason why this book was commissioned and forms part of a wider series of eight titles across the industrial organizational psychology domain. The team of editors for this title represents an outstanding group of academics, lead by Eduardo Salas. Ed is an eminent scientist practitioner who is as interested in practice as he is in developing evidence-based frameworks for guiding practice in different contexts. He is one of only two people who have received both the awards for Distinguished Contributions to Psychology as a Science and as a Profession from the prestigious Society for Industrial-Organizational Psychology. Under Ed's leadership, the editorial team have selected "the" experts on all aspects of forming, developing, and maintaining high-performing teams. Hence, this book will prove to be a stimulus for action in the workplace that is based on solid empirical research. In doing so, this book also points out areas for researchers to pursue to further enhance team effectiveness.

Gary Latham
Secretary of State Professor of Organizational Effectiveness
Rotman School of Management
University of Toronto

Series Preface

Welcome to this sixth book in the *Wiley Blackwell Industrial and Organizational Psychology* series. The focus of this series title is on teams and collaborative processes at work and builds on the previous five titles in the series on leadership and change, coaching and mentoring, training and development, health and safety, and positive psychology.

Collaboration has for centuries been a key feature of success for any enterprise. Since the industrial revolution and rise of large-scale manufacturing of the nineteenth century, through to the development of global corporations of the twenty-first century, team working and collaboration, both within and across the organization boundary, are essential. Teams are the only way NASA, Google, or IKEA can operate to deliver their products, services, or mission. Understanding how to recruit, develop, and manage teams is what this book is all about.

This title is, however, just one of eight books in this series totaling over 200 chapters and two million words on industrial and organizational psychology, and we believe this is the largest single contribution to the field. We believe this series differs in four ways from other titles in the field.

First, the focus for the title is aimed at the academic researcher and student, as opposed to the practitioner, although scholar-practitioners may also find this an interesting read. The aim of this book is to offer comprehensive coverage of the main topics of inquiry within the domain and in each of these to offer a comprehensive critical literature review of the main topic areas. Each chapter is thus an attempt to gather together the key papers, book chapters, and ideas and to present these for the serious researcher, student, and academic as a starting point for research in the key topics of industrial and organizational psychology in a focused (10,000 word) chapter. The book thus aims to operate as a starting point for any in-depth inquiry into the field.

Second, while many books take a UK/European or a US/North American approach with contributors drawn predominantly from one continent or the other, in this series we have made strenuous efforts to create an international feel. For each title in the series, we have drawn contributors from across the globe, and encouraged them to take an international as opposed to a national or regional focus. Such an approach creates challenges. Challenges in terms of language and spelling, but also in the way ideas and concepts are applied in each country or region. We have encouraged our contributors to highlight

such differences. We encourage you as the reader to reflect on these to better understand how and why these differences have emerged and what implications these have for your research and our deeper understanding of the psychological constructs that underpin these ideas.

Third, the chapters avoid offering a single perspective, based on the ideas of a single contributor. Instead we have invited leading writers in the field to critically review the literature in their areas of expertise. The chapters thus offer a unique insight into the literature in each of these areas, with leading scholars sharing their interpretation of the literature in their area.

Finally, as series editor I have invited contributors and editors to contribute their royalties to a charity. Given the international feel for the title we selected an international charity – The Railway Children – a charity that supports runaway and abandoned children across the world. This means approximately 10% of the cover price has been donated to charity and in this way we collectively are making a small contribution to making the world a slightly better place.

With any publication of this kind there are errors. As editors we apologize in advance for these.

Jonathan Passmore
Series Editor, Wiley Blackwell Handbooks
in Organizational Psychology

Supported Charity
Railway Children

Railway Children supports children alone and at risk on the streets of India, East Africa, and in the UK. Children migrate to the streets for many reasons, but once there they experience physical and sexual abuse, exploitation, drugs, and even death. We focus on early intervention, getting to the street kids before the street gets to them, and where possible we reunite them with their families and communities.

In addressing the issue, we work through our three-step change agenda to:

- Meet the immediate needs of children on the streets – we work with local organizations to provide shelter, education or vocational training, counseling and, if possible, reintegration to family life.
- Shift perception in the local context – we work with local stakeholders to ensure that street children are not viewed as commodities to be abused and exploited, but as children in need of care and protection.
- Hold governments to account – if we are to see a long-term, sustainable change for the children with whom we work, we must influence key decision-makers, ensuring that provisions for safeguarding children are made within their policies and budgets.

Last year we reached over 27,000 children; 14,690 of these were in India where we reunited 2,820 with their families. In the UK, we launched our research, "Off the Radar," which revealed the experiences of over 100 of the most detached children in the UK. Many of these children received no intervention either before leaving home or once they were on the streets. We have made recommendations that include emergency refuge for under 16 s and a wrap-round of other services, such as Misper schemes, local helplines, outreach, and family liaison to allow children and young people to access interventions in a variety of ways.

To find out more about our work, or to help us support more vulnerable children, please go to www.railwaychildren.org.uk or call 00 44 1270 757596

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Introduction

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The Psychology of Teamwork and Collaborative Processes

Eduardo Salas, Ramón Rico, and Jonathan Passmore

Introduction

Teams are an integral part of society. This handbook endeavors to tease apart the psychological aspects of teamwork and understand the applications and ramifications of teams, both within organizations and in society at large. In this short introductory chapter, we aim to briefly review the nature of teams and the developing research agenda, before highlighting the chapters contained in this book.

What Are Teams?

While the layperson may understand a team simply as a group of people, the scientific literature has spent considerable effort exploring and defining distinguishing characteristics. What makes a given group of people a team – that is, what sets it apart from any other unit? At its core, a team can be operationalized as a set of *two or more individuals* that *adaptively and dynamically interacts* through *specified roles* as they work towards *shared and valued goals* (Dyer, 1984; Salas, Dickinson, Converse, & Tannenbaum, 1992). Researchers have also identified several other features that characterize the unique dynamics specific to teams, including: existing to perform organizationally relevant tasks; exhibiting task interdependencies (e.g., workflow, goals, knowledge, and outcomes); interacting socially (face-to-face or virtually); maintaining and managing boundaries; and being embedded within an organizational context that sets boundaries, constrains the team, and influences exchanges with other units in the broader entity (Arrow, McGrath, & Berdahl, 2000; Hackman, 1987; Kozlowski & Bell, 2003; Kozlowski, Gully, Nason, & Smith, 1999; Salas et al., 1992). Clearly, teams are more than just a collection of people; they are functional units, a complex and crucial

component of broader human systems. While the science of teams has been expanding rapidly in academic spheres, so too has their import in practice.

Since the late 20th century, the global economy has seen drastic changes economically, strategically, and technologically. In response, organizations have shifted, from focusing on hierarchically structured, individual work to structuring of collective efforts more efficiently (Lawler, Mohrman, & Ledford, 1995). Owing to increasing competition, consolidation, and innovation, organizations must tap into, and make sense of, diverse skills, expertise, and experience. Accordingly, teams have emerged as a core building block of organizations (Kozlowski & Bell, 2012). Much can be accomplished when many minds are put together.

The growing awareness of teamwork in the public consciousness, however, is not the only compelling reason for its study. Teams are historically and demonstrably essential to the functioning of organizations and societies. Failing to value and invest in teamwork can have catastrophic consequences, varying in scope from the relatively personal (e.g., a surgery) to the international (e.g., a military engagement). Oftentimes, such unfortunate turns of events can be prevented or contained if participants had been able to coordinate their efforts, adapt to the environment, and overcome stressors as a unit (Salas, Stagl, & Burke, 2004). The promotion of synchronicity in teams has therefore come to the forefront as a crucial way to affect change and influence outcomes. This handbook therefore begins by breaking down the basic theoretical underpinnings of teams before understanding their importance across differing contexts, and looking towards the future of research and practice.

The Developing Research Agenda for Teamwork

Our hope in writing this book was to develop a rich, comprehensive resource on the psychology of teamwork for those in academia and industry alike. This handbook is intended to offer students breadth and depth of knowledge and researchers a sound and stimulating basis upon which to build their lines of inquiry, while also elucidating evidence-based practices useful to scholar-practitioners. In order to facilitate deeper understanding, it has been organized to take readers from a macro to a micro perspective on teams, beginning with broad strokes and narrowing down to more specific, detailed components.

Part I

The first section of the handbook gives a bird's-eye view of the teamwork literature. The authors describe factors that influence team performance, in terms of overall effectiveness, contextual efficiency, and intrateam synchronicity. These chapters give a general summary of teams in terms of psychological dynamics and greater societal significance.

Part I begins with a chapter by Julie V. Dinh and Eduardo Salas, which provides an overview of the processes underlying teamwork. While both taskwork (e.g., work-related goals) and teamwork (the behavioral, attitudinal, and cognitive interactions that drive such performance) are critical for efficient team performance, it is paramount to understand and strongly implement the latter across contexts. In particular, nine critical considerations, based on earlier work (Salas, Shuffler, Thayer, Bedwell, & Lazzara, 2015), shape the nature of teamwork, including core processes and emergent states – conflict, coordination, communication, coaching, and cognition – and contextual factors – composition, culture, and context. The model examined in this chapter captures the team dynamics explored in further detail later in the handbook.

In Chapter 3, Daniel J. Slyngstad, Gia DeMichele, and Maritza R. Salazar discuss team performance. The chapter provides a thorough review of conceptualizations of performance before proposing a three-dimensional framework by which to judge team functional utility. They pay special attention to knowledge work, which, due to its inherent complexity, can pose unique challenges in performance measurement. The conclusion synthesizes strong theoretical and empirical research into an integrative framework for team effectiveness in knowledge work.

Chapter 4 examines team effectiveness from a transnational perspective. Dana Verhoeven, Tiffany Cooper, Michelle Flynn, and Marissa L. Shuffler explore team performance through a theoretical lens of cultural diversity within a team. This approach is particularly useful given today's rapid globalization and its ramifications for team performance across contexts (such as the development and functioning of geographically dispersed teams). The chapter follows the input–process–output (IPO) framework to discuss, in detail, the components of team effectiveness, before offering alternate, comprehensive models and future directions for research.

Part II

Having set a comprehensive framework through which to understand teams, the second section of the handbook focuses on antecedents of team effectiveness. Each of the chapters addresses considerations regarding the formation and structure of teams, including design, composition, diversity, membership, and status.

The first step in creating a team is understanding and responding to the constraints in which it will operate. Current socioeconomic trends have forced researchers and practitioners to rethink how they organize the work and design teams that compose organizations. Today, teams are frequently formed and disbanded rapidly, distributed across multiple sites, and composed of members simultaneously working on myriad projects, with different bosses competing for their attention. "Further, these teams' work increasingly demands substantial coordination and integration of specialized expertise within and outside of the team" (Cross, Ehrlich, Dawson, & Helferich, 2008, p. 75). As such, it is critical to understand how these new realities affect the way in which we design teams. Chapter 5 explores the fundamental design elements that express what it means to be a team. Authors John L. Cordery and Amy W. Tian review recent research and theory relating to team constitution, team structure, and external support as it informs the effective design of organizational teams.

Beyond the design of teams, it is important to compose teams appropriately. In Chapter 6, Mikhail A. Wolfson and John E. Mathieu summarize research and advancements in the vast team composition literature. After describing conventional team composition approaches and their shortcomings, the authors propose the incorporation of network theory and methods as a potential solution. In particular, meta-networks and multiplex ties may help model the complex nature of teams, exposing areas of need, revealing unique combinations of interpersonal ties, and, in combination, helping optimize individual knowledge, skills, and abilities. The authors thus contribute to the literature by clearly delineating a social network approach that can facilitate a better understanding of team composition.

An important piece of team diversity is found within composition. Research on team diversity has produced many promising, but also many inconsistent, findings. In Chapter 7, Bertolt Meyer organizes the literature on this regard into different streams, differentiated by the ways in which they resolve the bi-theoretic approaches to diversity: the information/decision-making paradigm, which predicts positive effects of team diversity, and the social

categorization paradigm, which predicts negative effects. Taken in summary, the concep-
tualizations suggest that practitioners who seek to reap the benefits of team diversity
should increase team members' diversity beliefs and avoid the formation of homogeneous
subgroups. Finally, new multilevel/contextual and status-based models of team diversity
extend the theoretical foundations of diversity research beyond the bi-theoretical approach.

Membership change in organizations inevitably results in the introduction of new-
comers, who typically represent a numerical minority in the teams that they join (Choi &
Levine, 2004). Theories propose that newcomers, with their different background, are
important sources of innovation that facilitate team performance and can thus enhance the
long-term survival changes of teams. Chapter 8's review of over 50 years of research on
this topic demonstrates that this potential is often not realized. Authors Floor Rink, Aimée
A. Kane, Naomi Ellemers, and Gerben van der Vegt suggest that the three team receptivity
components – team reflection, knowledge utilization, and newcomer acceptance – are
interrelated and jointly influence sustained team performance. This framing sheds light on
the variables that facilitate team receptivity to newcomers.

Inherent to the discussion on membership within organizations is that of individual role
within a larger structure. Explaining the role that status plays in teams and organizations
had been a main concern for scholars from the fields of social psychology, sociology, and
management. Chapter 9 begins with a review of the definition of status and, more impor-
tantly, differentiates it from other related concepts (e.g., power and influence). Kun Luan,
Qiong-Jing Hu and Xiao-Yun Xie then review the status effects on individual behaviors,
team processes, and outcomes, as well as interteam interactions based on different theo-
retical perspectives. Insightful directions for future exploration that contribute to develop
team status study are offered.

Section 2 closed with Chapter 10 by exploring the use of cross-cultural teams, a growing
trend resulting from current globalization processes. Understanding and achieving
cross-cultural team effectiveness are key to the success of many multinational companies.
Accordingly, authors Ningyu Tang and Yumei Wang use the IPO framework to consider
each of the components that have been studied, considering linkages between each of
them. Inputs include cultural diversity, individual characteristics, team factors, and organi-
zational factors, while processes involve action processes (e.g., coordination, learning),
interpersonal processes (e.g., cooperation, communication, conflict), and psychological
processes (e.g., psychological safety, negative affective state, team shared value). Outputs
can be measured through performance (e.g., task performance, creativity performance)
and affective reactions (e.g., wellbeing, satisfaction). The chapter then identifies several
gaps and consequent directions for future research, in both theory and methods, using the
input–process–output analysis, and concludes with the proposal of a more comprehensive
multilevel cross-cultural team effectiveness model.

Part III

The third section of the handbook takes a finer-grained look at dynamics within teams:
core processes, emerging states, and mediators. Each of the authors describes, in detail,
different psychological forces that both affect and stem from team interaction.

Section 3 starts with Chapter 11 by discussing teamwork processes and emergent states.
Authors Rebecca Grossman, Sarit B. Friedman, and Suman Kalra use an adaptation of the
traditional IPO model, the input–mediator–output–input (IMOI) framework, to frame
the discussion, given the interconnected and cyclical nature of teamwork processes. In
doing so, they are able to fully describe the affective, behavioral, and cognitive mecha-
nisms that influence teamwork, including, respectively: cohesion, team confidence, and