Organizational Systems, Leadership, and Teamwork

Steve W. J. Kozlowski, Ph.D.
Department of Psychology
Michigan State University

The views, opinions, and/or findings contained in this presentation are solely those of the author and should not be construed as an official AHRQ, ARI, NASA, NSF, or ONR position, policy, or decision, unless so designated by other documentation

2019 NSF ERC Planning Grant Workshop
October 1-2, 2019

1

MICHIGAN STATE UNIVERSITY

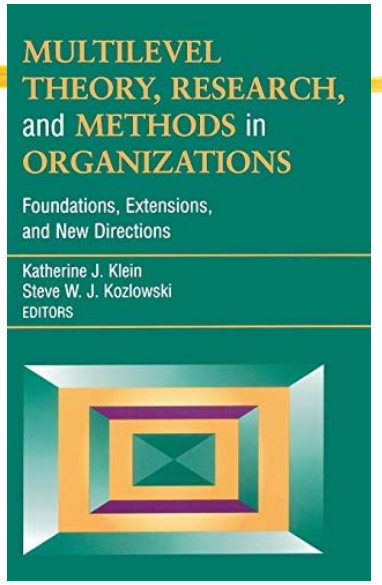
Agenda

- Fundamental Forces in Organizational Systems
- Fundamental Forces for Team Functioning & Effectiveness
- Enhancing Team Processes and Effectiveness
- Team Science Considerations
- Leadership
  - Targeting Team Processes
  - Shaping the System

2

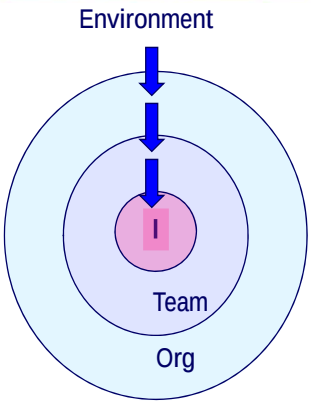
Organizations are Multilevel Systems: *Context, Levels, Task, and Time*

- Context: Interactive and enacted
  - Person-situation interaction
- Multilevel:
  - Top-down Effects and Bottom-up Emergence
- Task: Task-driven interdependencies
  - Determine goals, roles, and coordination demands
- Time: Temporal entrainment and dynamics



Organizations are Multilevel Systems: *Top-Down Context Shapes Team & Individual Phenomena*

- The hierarchical structure of social organizational systems creates a context
- Individuals are embedded in teams and teams are nested in the broader organizational context
- Context influences and constrains behavior at lower levels of the system
- Teams are the primary social unit in organizations – *meso is the juncture of macro and micro forces*



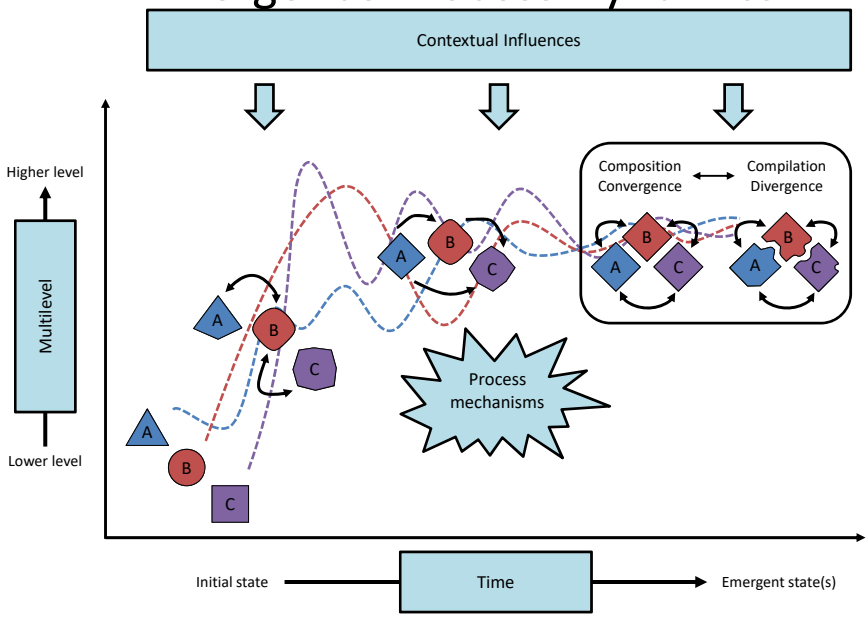
Emergence – Process is bottom-up

"A phenomenon is emergent when it originates in the cognition, affect, behaviors, or other characteristics of individuals, is amplified by their interactions, and manifests as a higher-level, collective phenomenon" (p. 55).

- Kozlowski, S. W. J., & Klein, K. J. (2000). A multilevel approach to theory and research in organizations: Contextual, temporal, and emergent processes. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research and methods in organizations: Foundations, extensions, and new directions* (pp. 3-90). San Francisco, CA: Jossey-Bass.

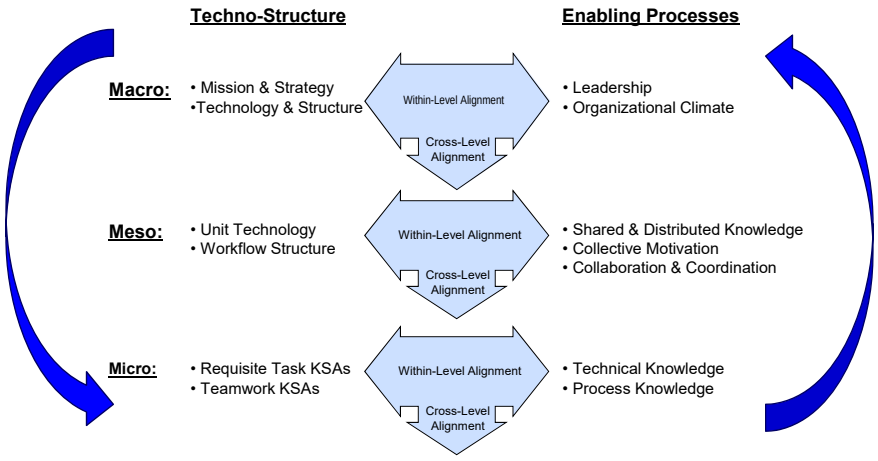
- Dynamic team processes emerge over time as relatively stable "emergent states"
  - *Cognitive, motivational / affective, and behavioral*

Emergence Process Dynamics



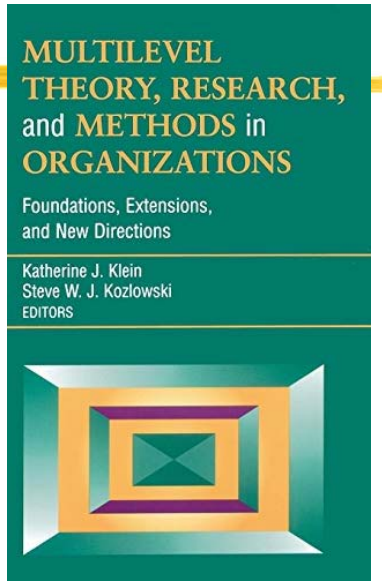
(Kozlowski, Chao, Grand, Braun & Kuljanin, *Organizational Research Methods*, 2013)

Effective Leaders Harness Top-Down Mechanisms to Shape & Amplify Bottom-up Processes

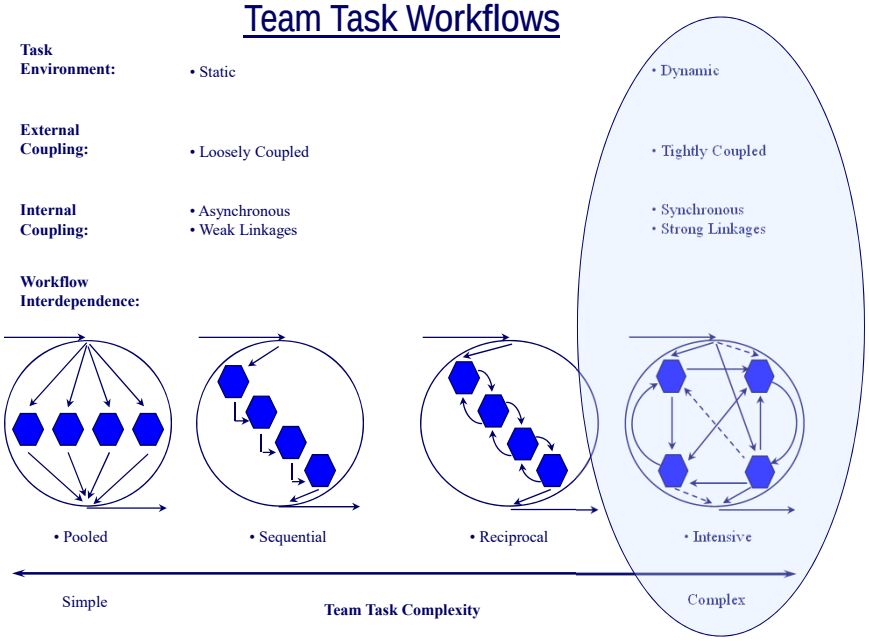


Organizations are Multilevel Systems: *Context, Levels, Task, and Time*

- Context: Interactive and enacted
  - Person-situation interaction
- Multilevel:
  - Top-down Effects and Bottom-up Emergence
- Task: Task-driven interdependencies
  - Determine goals, roles, and coordination demands
- Time: Temporal entrainment and dynamics



Team Task Workflows

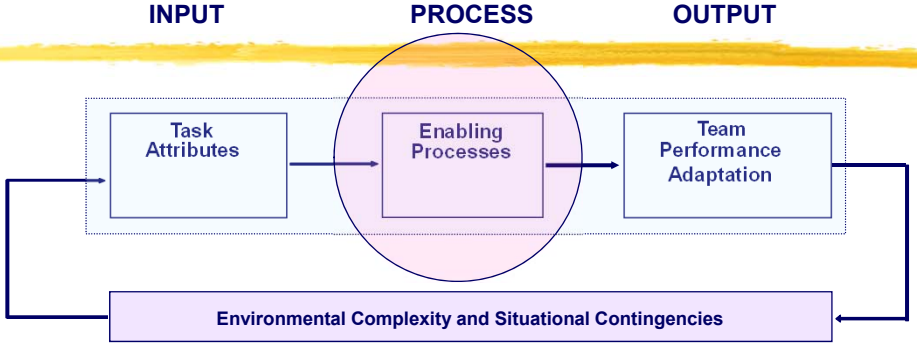


Bell, B. S., & Kozlowski, S. W. J. (2002). Virtual teams: Implications for leadership. *Group and Organization Management*, *27*, 12-49.

9

MICHIGAN STATE UNIVERSITY

Team Processes Resolve Dynamic Task Demands => Performance



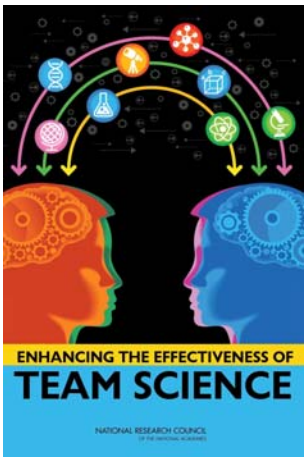
- Environmental variation and shifts drive team task demands
- Team processes resolve (or fail to resolve) task demands
- Team processes link to team performance
- *Team performance is dynamic, adaptive, and emergent*

(Adapted from Kozlowski et al., 1996, RPHRM)

THE NATIONAL ACADEMIES

Enhancing the Effectiveness of Team Science

(National Research Council, 2015)



COMMITTEE ON THE SCIENCE OF TEAM SCIENCE

NANCY J. COOKE (*Chair*), Human Systems Engineering, The Polytechnic School, Arizona State University
ROGER D. BLANDFORD (NAS), Department of Physics, Stanford University
JONATHON N. CUMMINGS, Fuqua School of Business, Duke University
STEPHEN M. FIORE, Department of Philosophy, University of Central Florida
KARA L. HALL, Behavioral Research Program, National Cancer Institute
JAMES S. JACKSON (IOM), Institute for Social Research and Department of Psychology, University of Michigan, Ann Arbor
JOHN L. KING, School of Information, University of Michigan, Ann Arbor
STEVEN W. J. KOZLOWSKI, Department of Psychology, Michigan State University
JUDITH S. OLSON, Department of Informatics, University of California, Irvine
JEREMY A. SABLOFF (NAS), Santa Fe Institute
DANIEL S. STOKOLS, School of Social Ecology, University of California, Irvine
BRIAN UZZI, Kellogg School of Management, Northwestern University
HANNAH VALANTINE, Office of the Director, National Institutes of Health

Study sponsored by the National Science Foundation and Elsevier

11

MICHIGAN STATE UNIVERSITY

Enhancing Team Effectiveness

(Kozlowski & Bell, 2003, 2013, in press; Kozlowski & Ilgen, 2006)

- 70+ years of research on work group & team effectiveness
- Focused on well-established findings
- Emergent team processes ➔ team effectiveness
  - Cognitive, motivational/affective, and behavioral processes
- Interventions that show demonstrated effects or promising findings for influencing the quality of team processes

- *Findings guide application; Gaps guide future research*

12

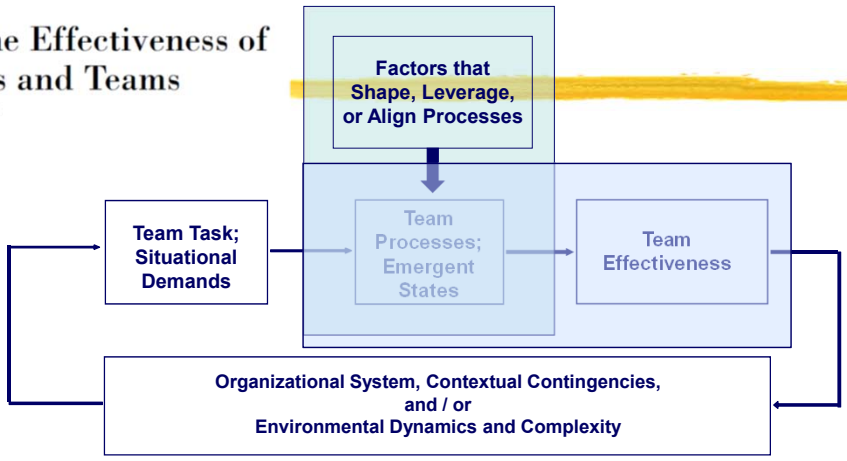
Work Teams Are …

- Two or more individuals (~ 7+/- 2 or they self-organize into smaller units)
- Who interact (face-to-face or virtual network)
- Have one or more common goals
- *Exist to perform task-relevant functions*
- *Exhibit work interdependencies (goals, workflow, outcomes) and differentiated roles*
- *Embedded in an organizational system*
- *With boundaries and dynamic linkages to the system and task environment*

PSYCHOLOGICAL SCIENCE IN THE PUBLIC INTEREST

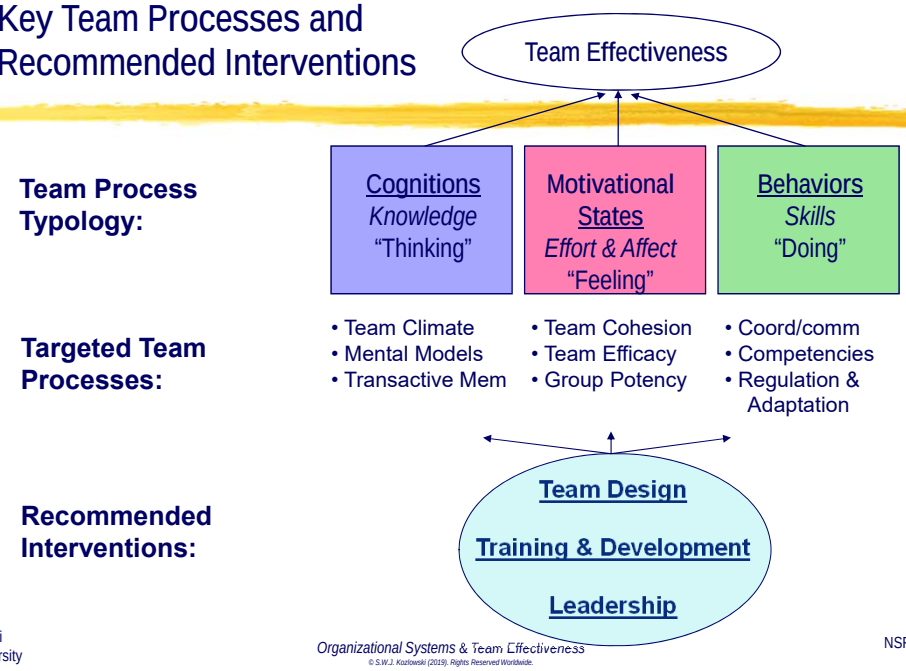
Enhancing the Effectiveness of Work Groups and Teams

Steve W.J. Kozlowski and Daniel R. Ilgen
Michigan State University



- Environmental dynamics and complexity drive team task demands
- Team processes align team member resources to fit demands
- Team outputs influence the environment
- Cycles are reciprocal over time

Key Team Processes and Recommended Interventions



Steve W. J. Kozlowski
Michigan State University

15

Cognitive Processes

Cognitive Processes	Concept	Evidence	Recommendations
Team Climate	Strategic imperatives	Meta-analysis; Substantial research foundation	Application ready; Train science team leaders to build a strong team vision & mission climate
Team Learning	Psychological safety; learning from errors; supportive feedback; open leadership	Substantial systematic research foundation	Application ready; Train science team leaders to create psychological safety to support team learning
Knowledge Building	Information sharing mechanisms	Meta-analysis; Computational modeling	Develop communication and knowledge sharing protocols; Leadership can shape the process
Team Mental Models	Shared knowledge structures	Meta-analysis	Application ready; Train science team leaders to conduct pre-briefs and debriefs; Provide team training
Transactive Memory	Team distributed memory	Meta-analysis	Facilitate interaction and shared experience; Research needed on interventions

16

Motivational / Affective Processes

Motivational / Affective Processes	Concept	Evidence	Recommendations
Team Cohesion	Task commitment and social attraction	Multiple meta-analyses	Leaders can shape and influence cohesion formation
Team Efficacy	Shared confidence for goal attainment	Meta-analysis	Application ready; Train science team leaders to build and instill team efficacy; Provide team training
Conflict Management	Group emotions	Research foundation	Application ready; Train basic skills to team leaders and team members to manage task, relationship & process conflict

17

Behavioral Processes

Behavioral Processes	Concept	Evidence	Recommendations
Team coordination, cooperation, and communication	Combination of member actions; information exchange	Systematic research foundation	Application ready; Design supporting goal and feedback systems; Train science team leaders to develop team regulatory skills; Provide team training
Team member competencies	Teamwork KSAs	Systematic research foundation	Application ready; Provide teamwork skills training to science team members
Team regulation	Regulation of attention and effort	Systematic research foundation	Application ready; Train science team leaders to develop team regulatory skills

18

Science Team Challenges:
- They are like other work teams, but can be *complicated*

TABLE 1-1. Dimensions of Team Science

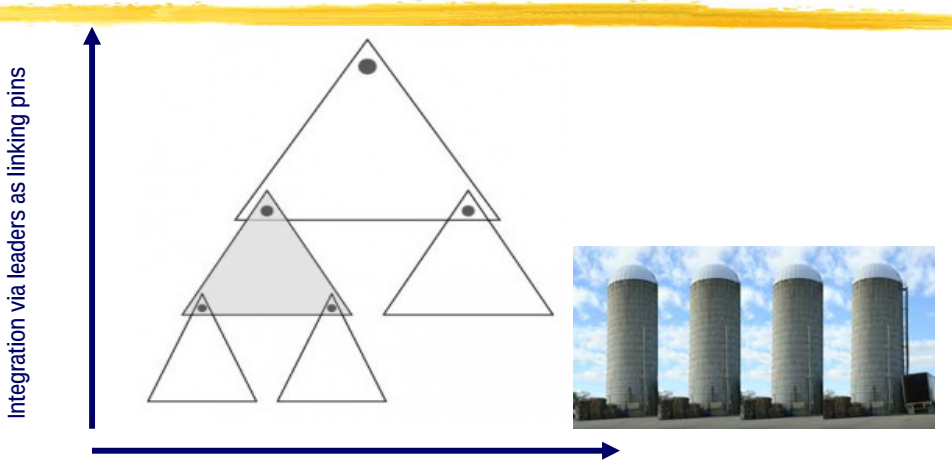
Dimension	Range	
Diversity of team or group membership	Homogeneous	Heterogeneous
Disciplinary integration	Unidisciplinary	Transdisciplinary
Team or group size	Small (2)	Mega (1000s)
Goal alignment across teams	Aligned	Divergent or Misaligned
Permeable team and organizational boundaries	Stable	Fluid
Proximity of team or group members	Co-located	Globally distributed
Task interdependence	Low	High

SOURCE: Created by the committee.

Inputs

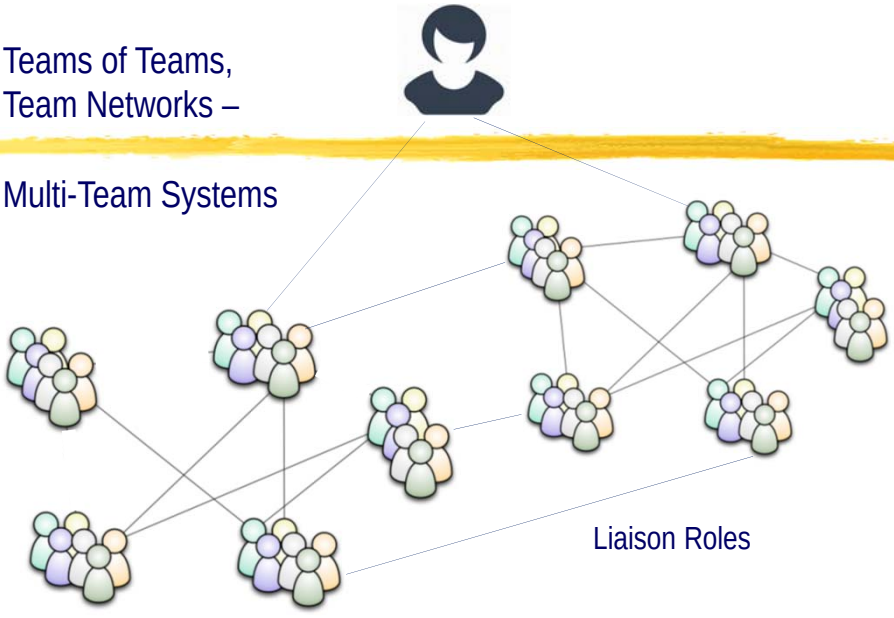
Inputs	Concept	Evidence	Recommendations
Organizational Structure	Structure of roles, responsibilities, goals, and authority	Substantial research foundation	Application ready; Apply design principles for larger science "teams"
Workflow Design	Structure by which information and effort flow among team members	Substantial research foundation	Application ready; More complex workflows necessitate more active leadership, coordination, and communication protocols
Virtuality	Distribution of team members across time and space	Substantial research foundation	Places increased demands on science team leaders to coordinate information & effort
Team Composition	The pattern of individual differences (e.g., demographics and ability, experience, values, personality, culture, etc.) across team members	Meta-analyses	A critical input for team effectiveness Focus on key knowledge & skills; orientation toward collaboration & teamwork

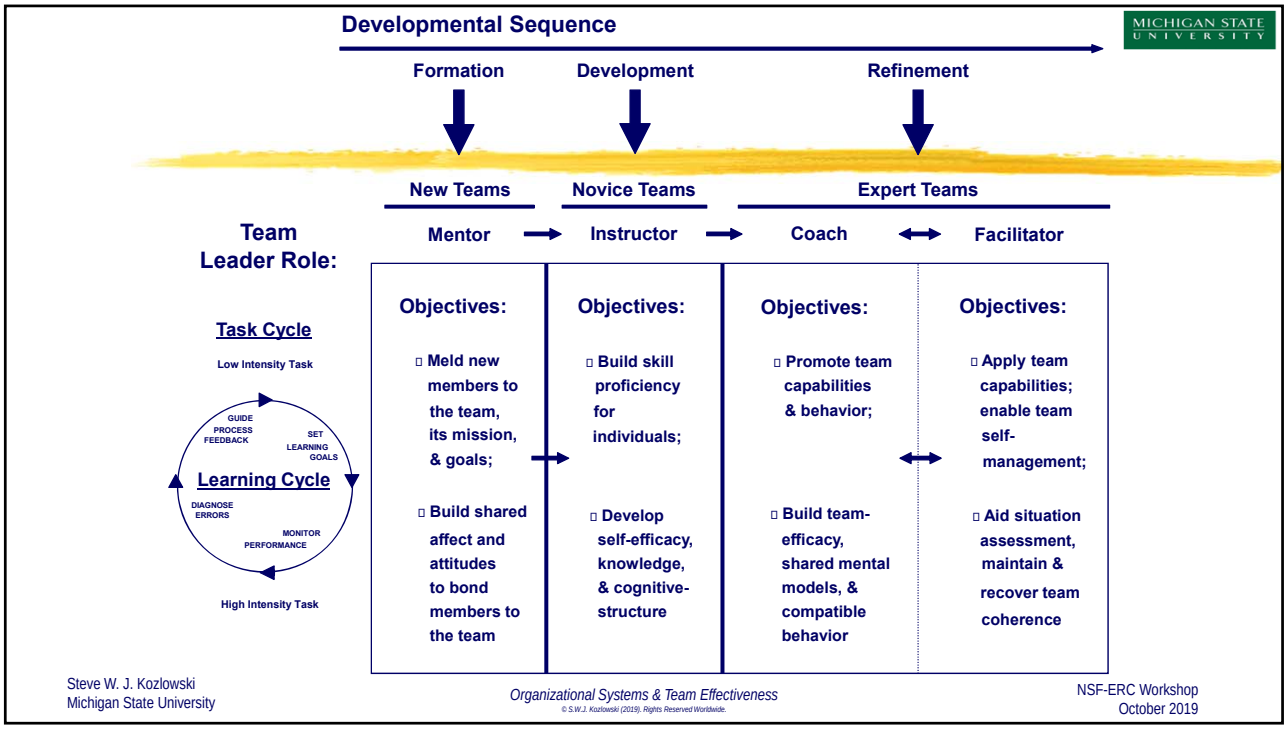
Team Leaders are "linking pins" that integrate teams or units in a hierarchical organizational system



Teams of Teams, Team Networks –

Multi-Team Systems

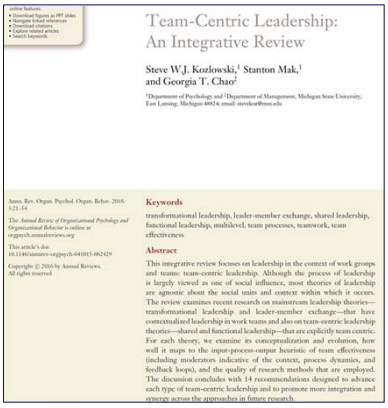




MICHIGAN STATE UNIVERSITY

Leadership Theory "Tools" or Concepts

- Transformational Leadership
  - Compelling vision, engaging members, collective orientation
- Relational Leadership ("Leader-Member Exchange")
  - Crafting roles & relations, facilitating proaction & initiative
- Functional Leadership
  - Ensure task accomplishment & team functioning
  - 'leader's job make sure it's done, not necessarily to do it all'
- Shared Leadership
  - Leadership functions are distributed across the team


Team-Centric Leadership: An Integrative Review

Steve W.J. Kozlowski,[1] Stanton Mak,[1] and Georgia T. Chao[2]

[1]Department of Psychology and [2]Department of Management, Michigan State University, East Lansing, Michigan 48824; email: stevekoz@msu.edu

Keywords

transformational leadership, leader-member exchange, shared leadership, functional leadership, multilevel, team processes, teamwork, team effectiveness

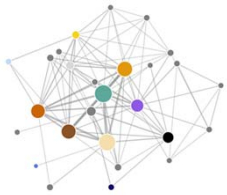
Abstract

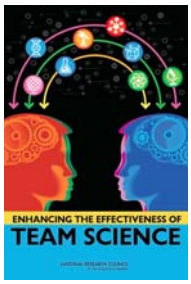
This integrative review focuses on leadership in the context of work groups and teams: team-centric leadership. Although the process of leadership is largely viewed as one of social influence, most theories of leadership are agnostic about the social units and context within which it occurs. The review examines recent research on mainstream leadership theories—transformational leadership and leader-member exchange—that have contextualized leadership in work teams and also on team-centric leadership theories—shared and functional leadership—that are explicitly team centric. For each theory, we examine its conceptualization and evolution, how well it maps to the input-process-output heuristic of team effectiveness (including moderators indicative of the context, process dynamics, and feedback loops), and the quality of research methods that are employed. The discussion concludes with 14 recommendations designed to advance each type of team-centric leadership and to promote more integration and synergy across the approaches in future research.

Improving Science Team Effectiveness

- A wealth of solid research support for the importance of several key team processes ➡ team effectiveness
  - Cognitive – Unit-team climate, TMM, TM
  - Motivational – Team cohesion and team efficacy
  - Behavioral – Team competencies and regulatory mechanisms
- A wealth of theory and empirical support for interventions that enhance team processes and performance
  - Team design, team training, team leadership

Thanks


MICHIGAN STATE UNIVERSITY

Resources

Kozlowski, S. W. J., & Bell, B. S. (in press). Advancing team learning: Process mechanisms, knowledge outcomes, and implications. In L. Argote & J. Levine (Eds.), *Oxford handbook of organizational learning*. New York, NY: Oxford University Press.

Kozlowski, S. W. J., & Bell, B. S. (in press). Evidence-based principles and strategies for optimizing team functioning and performance in science teams. In K. Hall, R. Croyle, & A. Vogel (Eds.), *Strategies for team science success: Handbook of evidence-based principles for cross-disciplinary science and practical lessons learned from health researchers*. New York: Springer. [Refereed]

Kozlowski, S. W. J., Grand, J. A., Baard, S. K., & Pearce, M. (2015). Teams, teamwork, and team effectiveness: Implications for human systems integration. In D. Boehm-Davis, F. Durso, & J. Lee (Eds.), *The handbook of human systems integration* (pp. 555-571). Washington, DC: APA. [refereed]

Kozlowski, S. W. J., & Ilgen, D. R. (2006). Enhancing the effectiveness of work groups and teams [Monograph]. *Psychological Science in the Public Interest, 7*, 77-124.

Kozlowski, S. W. J., Watola, D., Jensen, J. M., Kim, B., & Botero, I. (2009). Developing adaptive teams: A theory of dynamic team leadership. In E. Salas, G. F. Goodwin, & C. S. Burke (Eds.), *Team effectiveness in complex organizations: Cross-disciplinary perspectives and approaches* (pp. 113-155). New York, NY: Routledge Academic.

National Research Council. (2015). *Enhancing the effectiveness of team science*. Committee on the Science of Team Science; Board on Behavioral, Cognitive, and Sensory Sciences; Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.

Mak, S., & Kozlowski, S. W. J. (2019). Virtual teams: Conceptualization, integrative review, and research recommendations. In R. Landers, (Ed.), *The Cambridge handbook of technology and employee behavior* (pp. 441-479). Cambridge, UK. The Cambridge University Press.

Pearce, M., Powers, C. L., & Kozlowski, S. W. J. (2015). The development of project teams. In F. Chiocchio, E. K. Kelloway, & B. Hobbs (Eds.), *The psychology and management of project teams* (pp. 423-456). New York: Oxford University Press.

Salas, E., Shuffler, M. L., Thayer, A. L., Bedwell, W. L., & Lazzara, E. H. (2015). Understanding and improving teamwork in organizations: A scientifically based practical guide. *Human Resource Management, 54*(4), 599-622.

Shuffler, M.L., DiazGranados, D., & Salas, E. (2011). There's a science for that: Team development interventions in organizations. *Current Directions in Psychological Science, 20(6)*, 365-372.