

Nov. 3, 2014

“Innovative Assessment of Collaboration”

Washington, DC

Confluent and Countervailing Forces Within and Between Teams

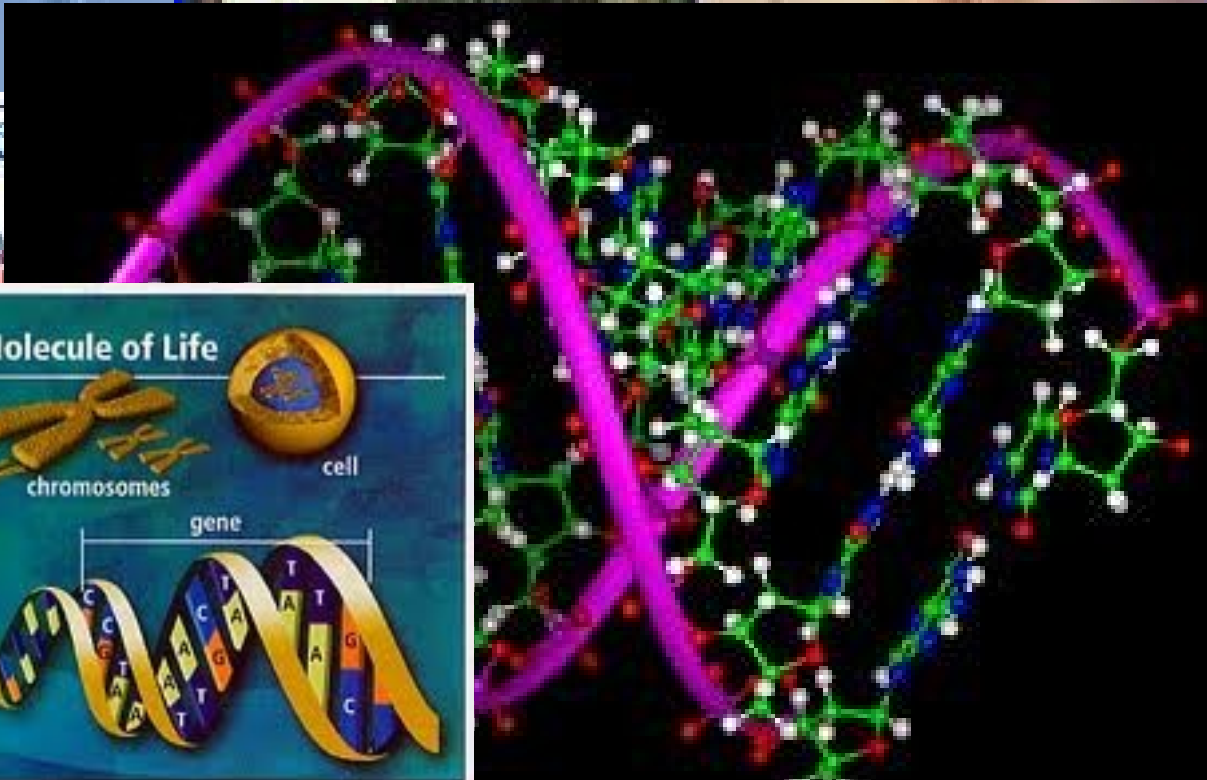
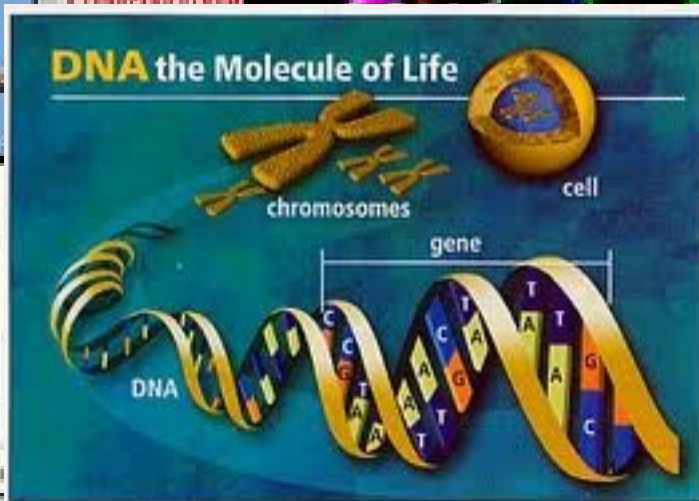
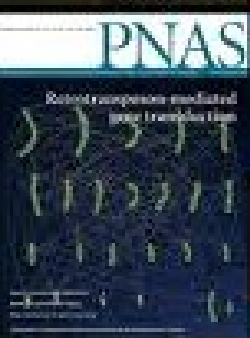
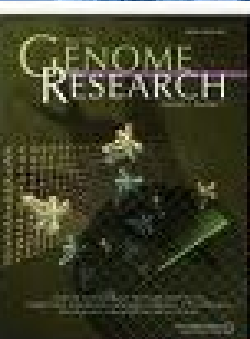
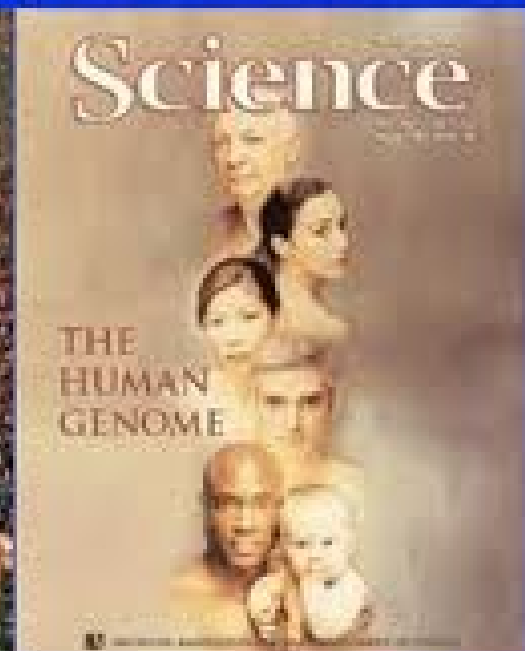
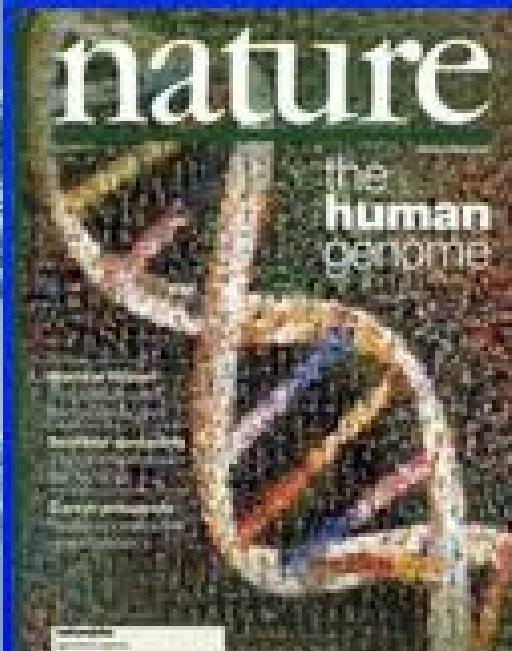
Leslie A. DeChurch

Georgia Institute of Technology

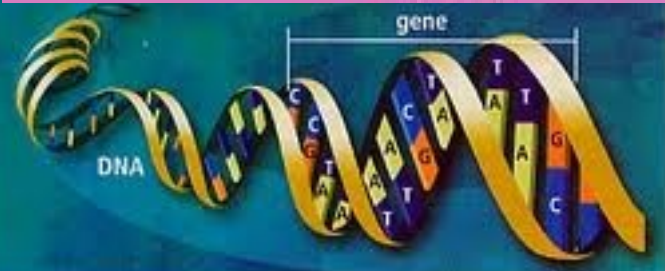
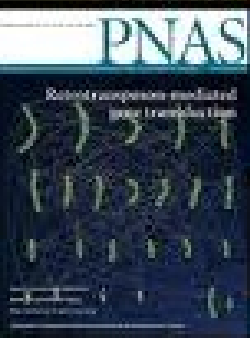
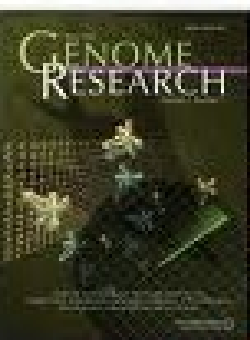
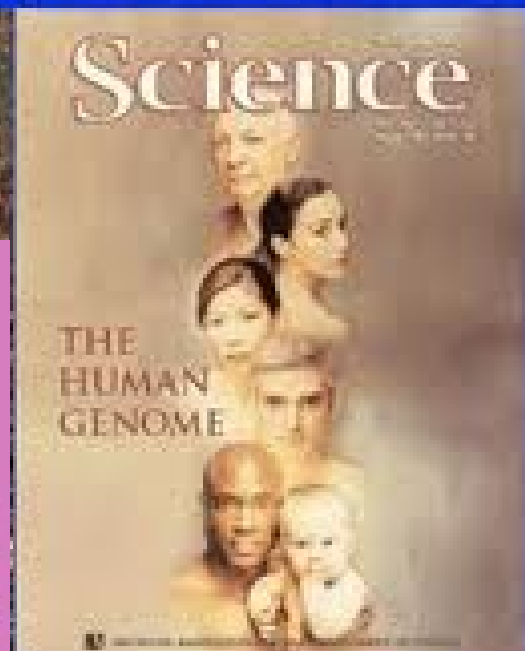


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Human Genome Project



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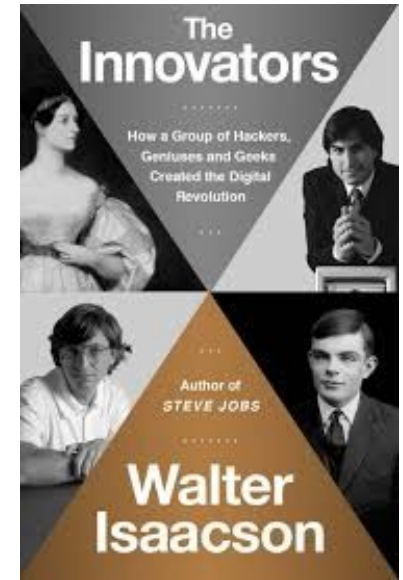
Science



GENOME RESEARCH



“Biographers make it sound like there’s some great individual ...When you look at innovation...it happens in teams. Having written about Steve Jobs, I realized how important the **team** around him was.”



Multiteam Systems

- Two or more teams who work interdependently pursuing both proximal team goals and at least one distal MTS goal



Military Engagements



Team Science



Open Source Software

Emergency Response



New Product Development

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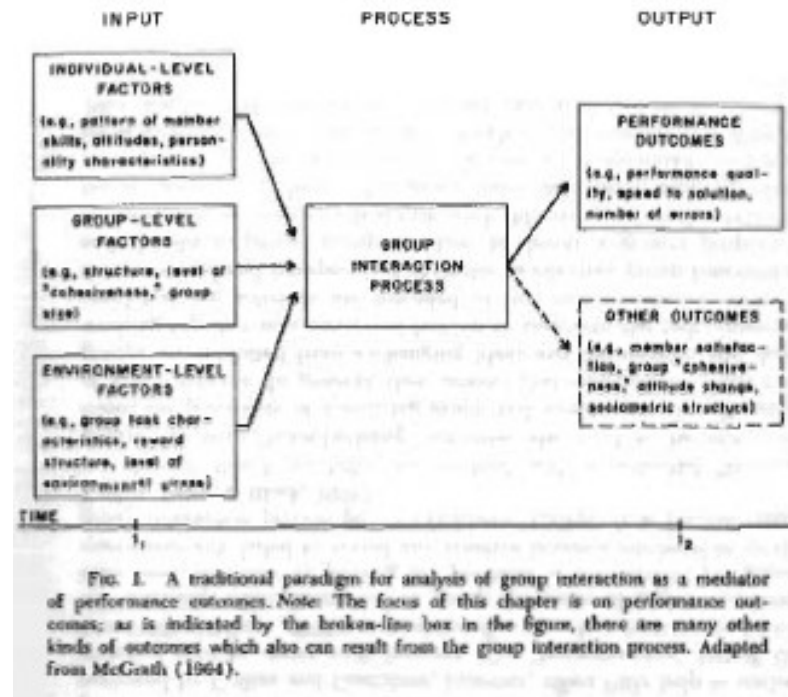
New Product Development

What are *teams* and what makes them *work*?

The Science of Teams

What Is a Team?

A team can be defined as (a) two or more individuals³ who (b) socially interact (face-to-face or, increasingly, virtually); (c) possess one or more common goals; (d) are brought together to perform organizationally relevant tasks; (e) exhibit interdependencies with respect to workflow, goals, and outcomes; (f) have different roles and responsibilities; and (g) are together embedded in an encompassing organizational system, with boundaries and linkages to the broader system context and task environment (Alderfer, 1977; Argote & McGrath, 1993; Hackman, 1992; Hollenbeck et al., 1995; Kozlowski & Bell, 2003; Kozlowski, Gully, McHugh, Salas, & Cannon-Bowers, 1996; Kozlowski et al., 1999; Salas, Dickinson, Converse, & Tannenbaum, 1992).



Kozlowski & Ilgen (2006)

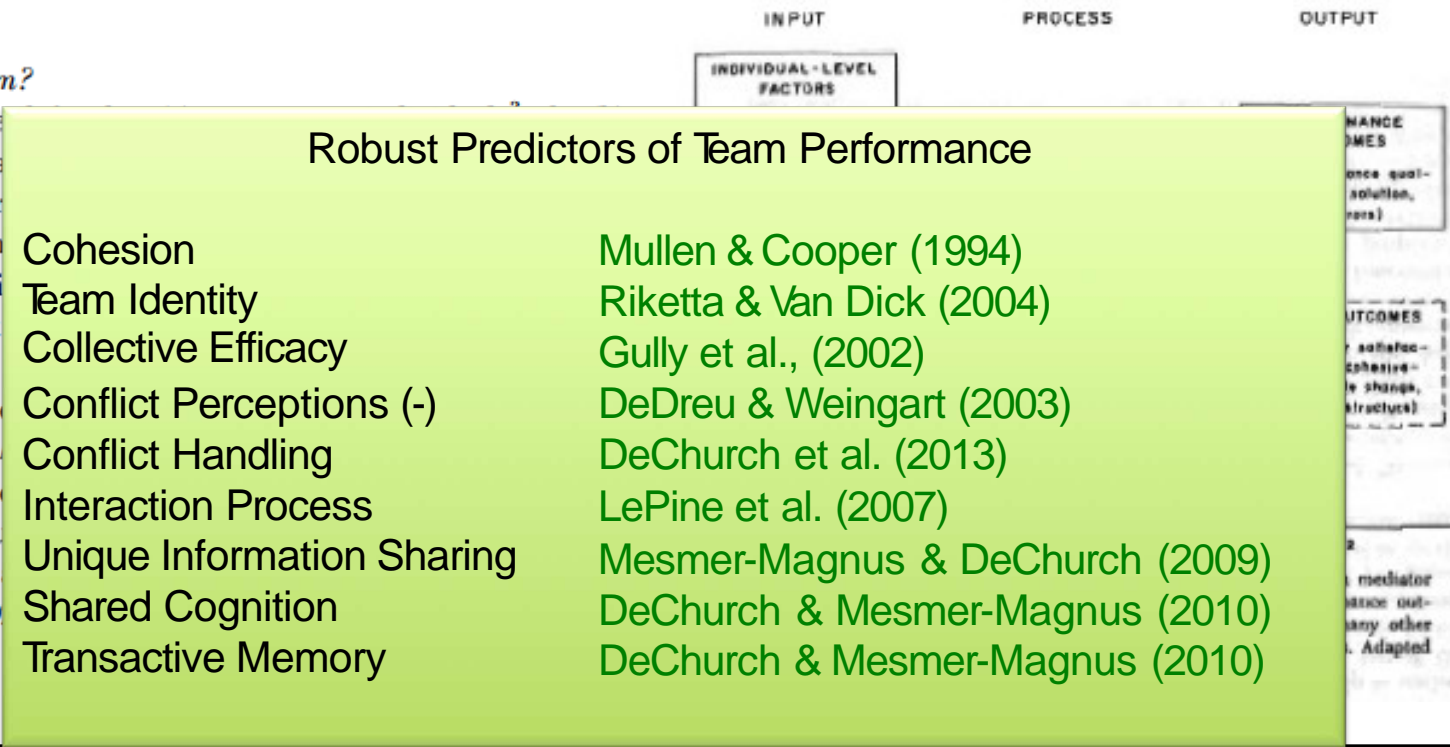
Hackman & Morris (1975)

What are *teams* and what makes them *work*?

The Science of Teams

What Is a Team?

A team can be defined as a socially interacting group of two or more people who possess one or more skills and knowledge to perform organized and coordinated activities, in which they have interdependencies with one another. Teams are embedded in an organizational context, with boundaries and an environment (Kozlowski, 1992; Hackman, 1992; Kozlowski, 1992; Kozlowski et al., 1992; Tenenbaum, 1992).



Kozlowski & Ilgen (2006)

Hackman & Morris (1975)

What are *multiteam systems* and what makes them work?

1992: 4). Building on the notion of a single team, MTSs are defined as: *two or more teams that interface directly and interdependently in response to environmental contingencies toward the accomplishment of collective goals. MTS boundaries are defined by virtue of the fact that all teams within the system, while pursuing different proximal goals, share at least one common distal goal; and in doing so exhibit input, process, and outcome interdependence with at least one other team in the system.* In

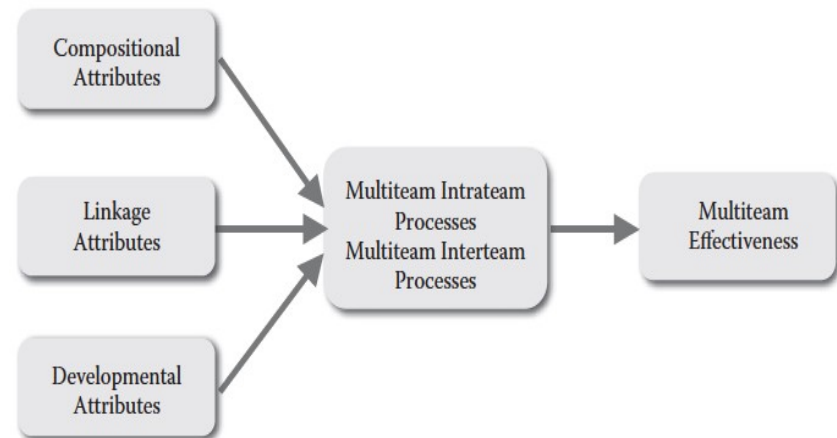


FIGURE 1.1
A model of multiteam system effectiveness.

Mathieu, Marks, & Zaccaro (2001)

Zaccaro, Marks, & DeChurch (2012)

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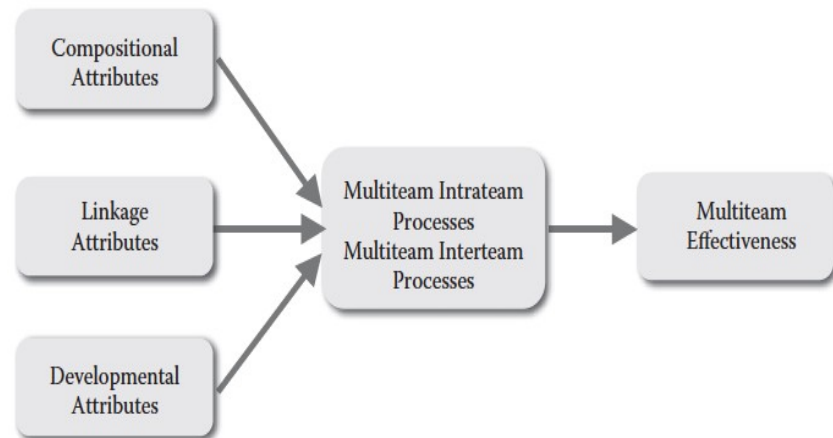


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A model of multiteam system effectiveness.

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Lines of Thinking on MTS Effectiveness

- Early work, circa 2005
 - What predicts MTS effectiveness?
 - Single level, e.g., BT coordination – MTS performance
 - Many confluence studies, e.g., intra- and inter-team coordination needed

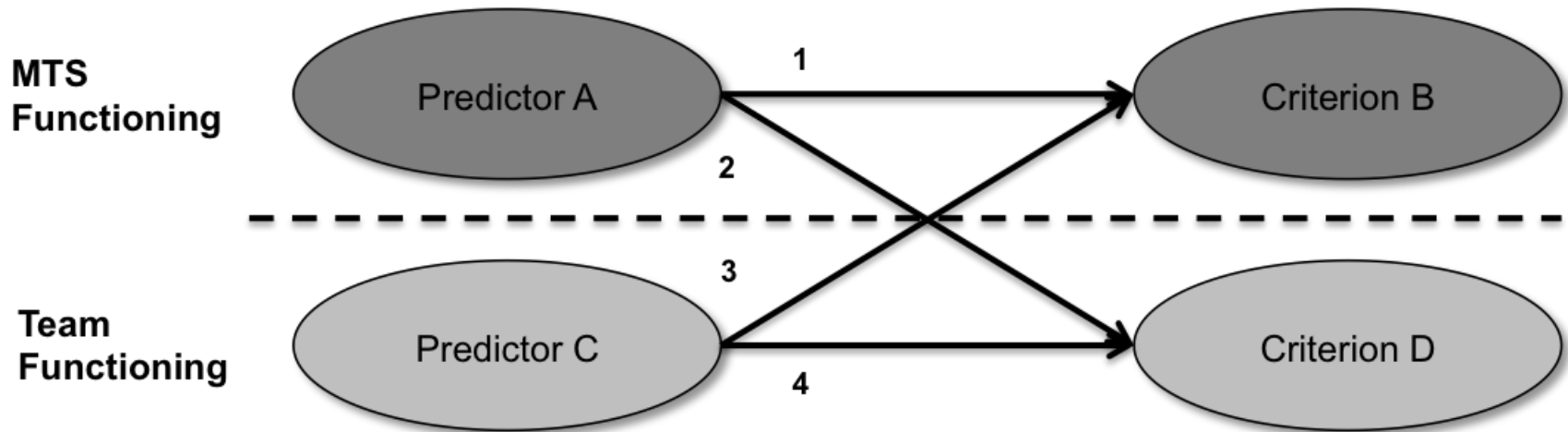
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 - What predicts team versus MTS effectiveness?
 - Single level, but compare to other studies at other levels
- A new paradigm, circa 2014
 - What predicts team and MTS effectiveness?
 - Cross level effects

Model of Confluent and Countervailing Forces in Multiteam Systems



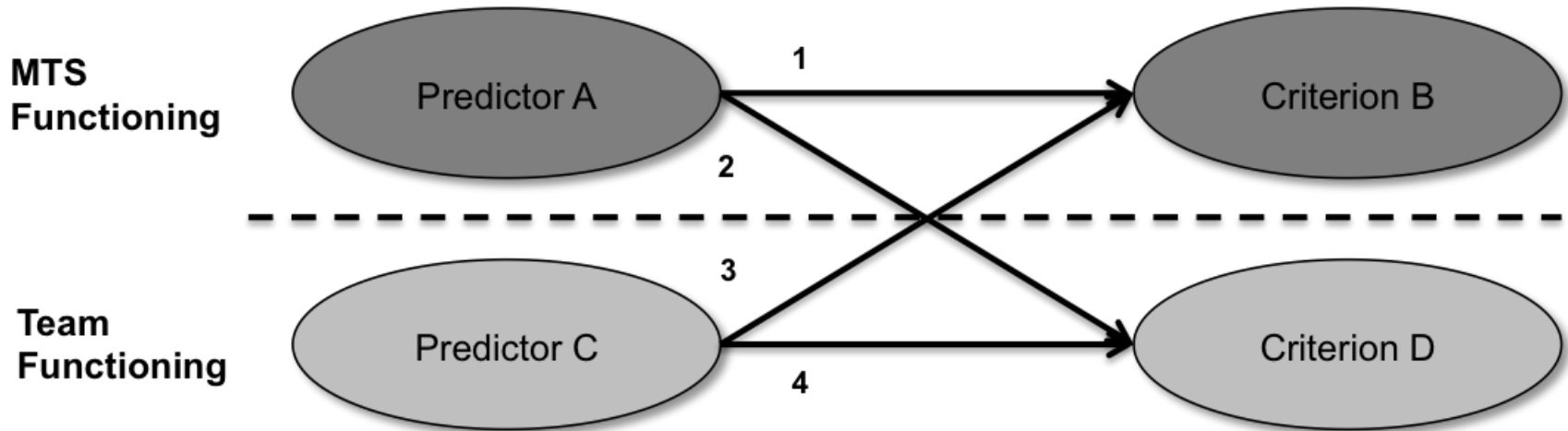
Countervailing Forces

“Countervailing forces are combinations of teamwork processes and properties that operate differently at different levels of analysis (e.g., team cohesion benefits team performance but compromises information sharing between teams).

A countervailing force occurs when a process or emergent state has both positive and negative consequences. (DeChurch & Zaccaro, 2013)”

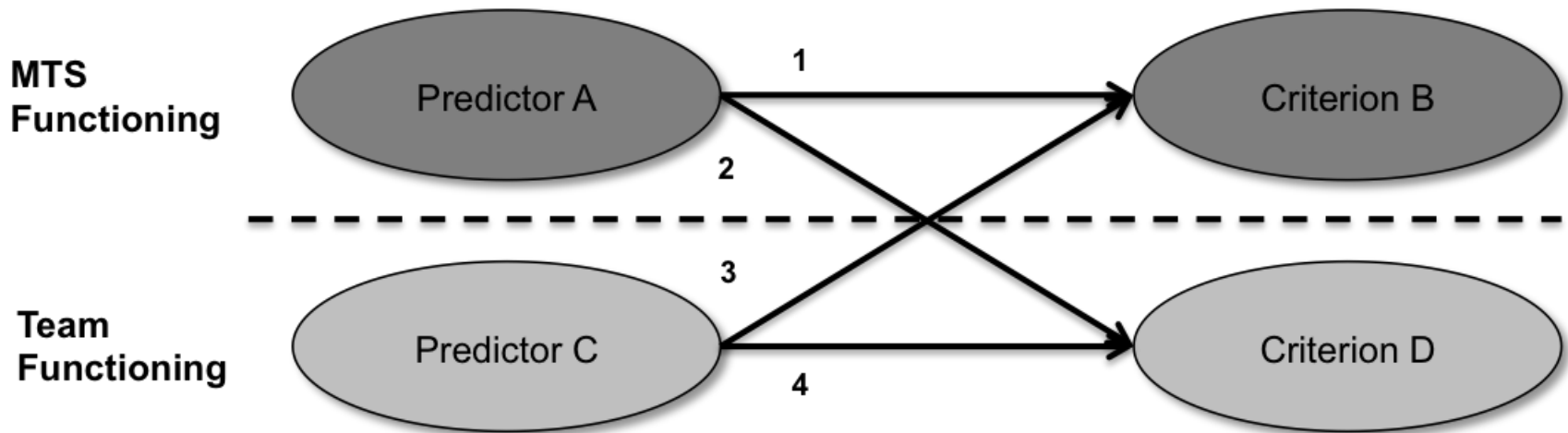
	Local (Team) Optimization	Global (MTS) Optimization
Level of Origin of the Process or State	Consequences are beneficial locally beneficial but harmful globally	Consequences are harmful locally but beneficial globally
Manifests at the team level	Type I	Type II
Manifests at the MTS level	Type III	Type IV

Countervailing Forces



	Local (Team) Optimization	Global (MTS) Optimization
Level of Origin of the Process or State	Consequences are beneficial locally beneficial but harmful globally	Consequences are harmful locally but beneficial globally
Manifests at the team level	Type I	Type II
Manifests at the MTS level	Type III	Type IV

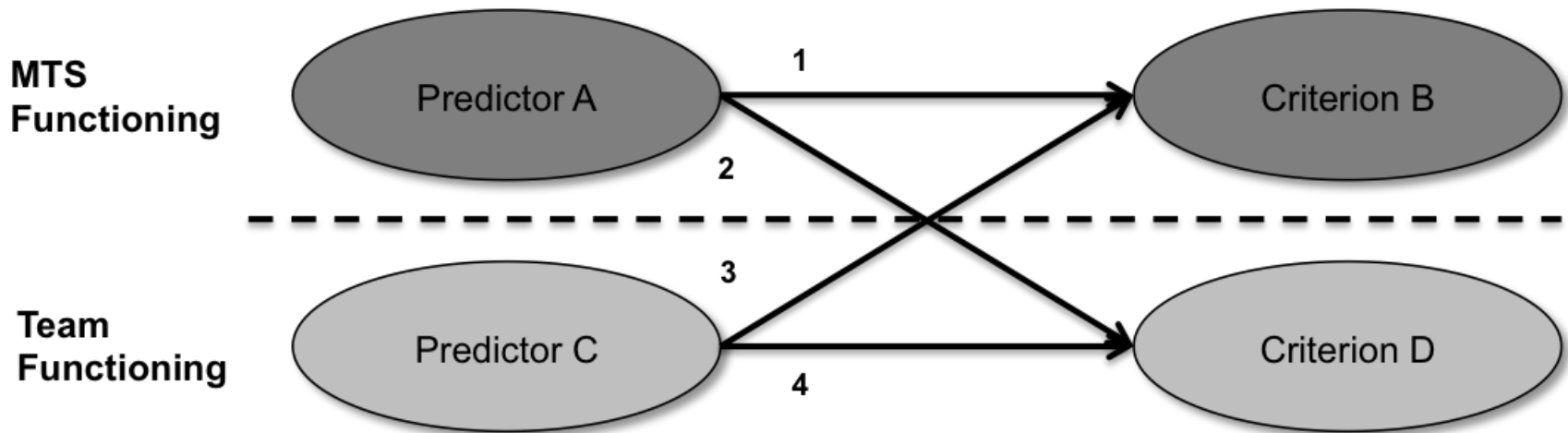
Type I Countervailing Forces



	Local (Team) Optimization	Global (MTS) Optimization
Level of Origin of the Process or State	Consequences are beneficial locally but harmful globally	Consequences are harmful locally but beneficial globally
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Cohesion

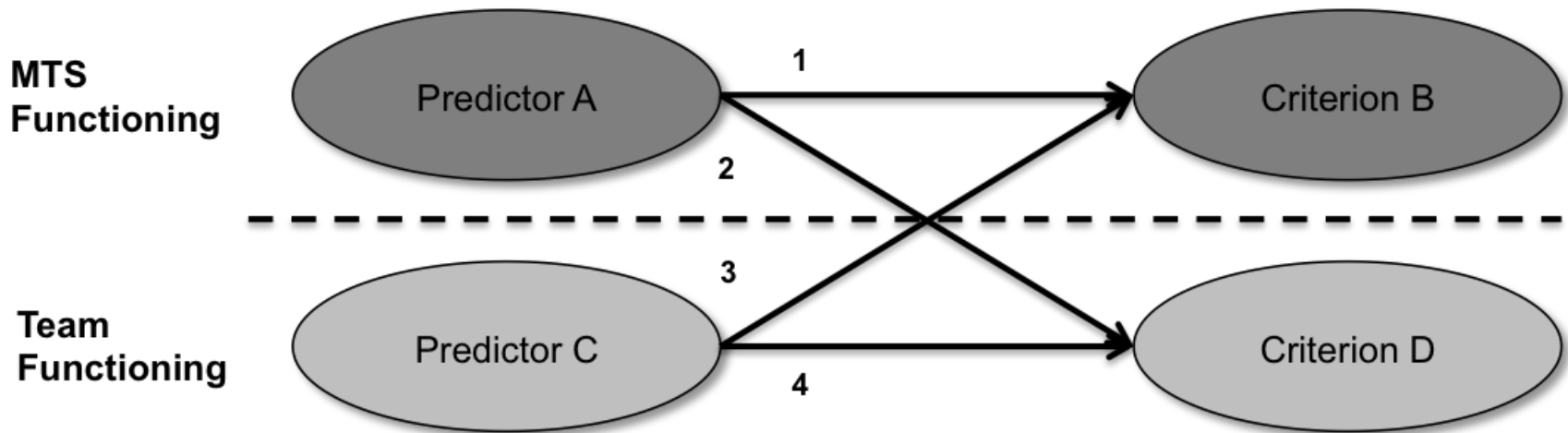
Type II Countervailing Forces



	Local (Team) Optimization	Global (MTS) Optimization
Level of Origin of the Process or State	Consequences are beneficial locally but harmful globally	Consequences are harmful locally but beneficial globally
Manifests at the team level	Type I	Type II
Manifests at the MTS level	Type III	Type IV

Conflict

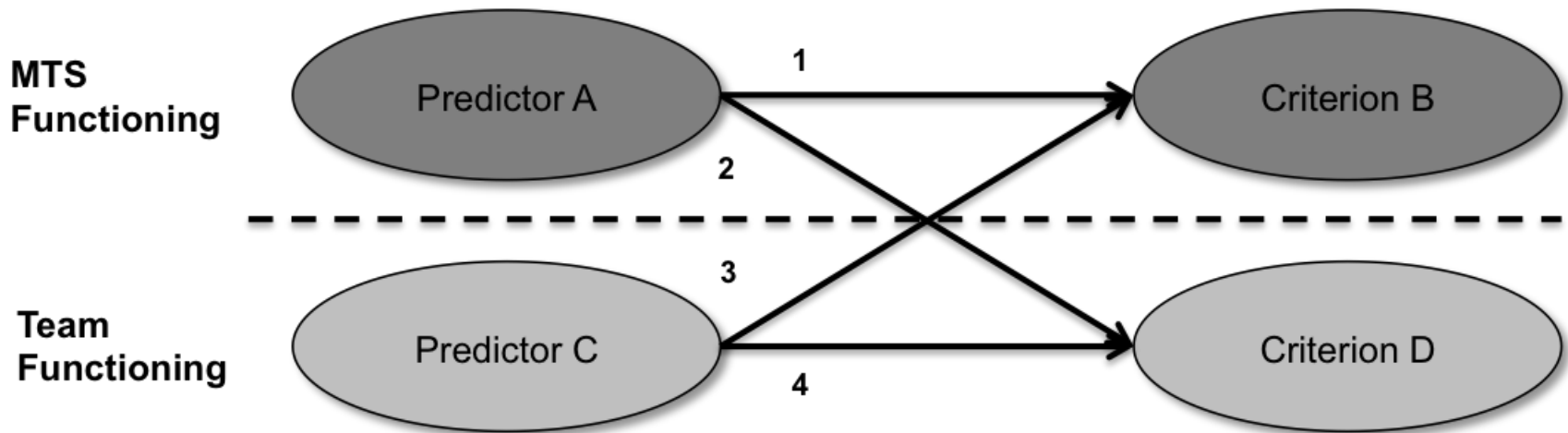
Type III Countervailing Forces



	Local (Team) Optimization	Global (MTS) Optimization
Level of Origin of the Process or State	Consequences are beneficial locally beneficial but harmful globally	Consequences are harmful locally but beneficial globally
Manifests at the team level	Type I	Type II
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Inter-team conflict

Type IV Countervailing Forces



	Local (Team) Optimization	Global (MTS) Optimization
Level of Origin of the Process or State	Consequences are beneficial locally beneficial but harmful globally	Consequences are harmful locally but beneficial globally
Manifests at the team level	Type I	Type II
Manifests at the MTS level	Type III	Type IV

Between-team coordination

Implications for Assessing Collaboration

- Collaboration involves processes and states linking individuals within teams & teams within systems
- Team processes/states exhibit countervailing effects
- Assessment needs to predict collaborative processes and states that have been “optimized” at multiple levels

Thank you!