Task Interdependence and Shared Leadership:

A Structural Perspective on the Distribution of Leadership in Teams

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Abstract

Shared leadership has consistently been shown to predict team effectiveness. However, research also indicates that different teams may require different configurations of shared leadership, and achieving maximum sharedness in leadership does not always guarantee superior team outcomes. This reality underscores the need for a normative theory of shared leadership that can extend our understanding of the construct and facilitate its adoption in organizations. Despite the significance of such a theory, little attention has been given to its development and our understanding of how shared leadership should be distributed across different teams remains quite limited. In this article, we adopt a structural perspective to propose that the task interdependence network can serve as a robust foundation for devising effective shared leadership strategies. Our conceptual framework outlines the nuanced implications of the task interdependence network—from determining the optimal level of shared leadership necessary for performance to identifying potential members for shared leadership responsibilities. In doing so, we emphasize that the specific implications of the task interdependence network may vary, rather than remain uniform, across different dimensions of shared leadership.

Keywords: conceptual; shared leadership; teams; social networks; task interdependence

Introduction

As the organization of work has become increasingly team-oriented, the concept of shared leadership—a collective approach to leadership—has demonstrated remarkable utility in enhancing team performance across diverse settings, ranging from traditional face-to-face interactions to virtual collaborations (e.g., Carson et al., 2007; Day, Gronn, & Salas, 2004; Hoch & Kozlowski, 2014). Research has cautioned, however, that achieving maximum shared leadership, where every team member assumes leadership responsibilities, does not always guarantee superior outcomes (Mehra et al., 2006). Like any other leadership approach, shared leadership needs to be carefully aligned with team characteristics (D'Innocenzo, Mathieu, & Kukenberger, 2016). To date, little attention has been directed toward developing normative frameworks that can help inform the optimal distribution of leadership responsibilities under different team conditions. Most existing studies have thus far concentrated on examining the characteristics of shared leadership, such as its emergence process (e.g., DeRue, 2011; Derue & Ashford, 2010; Xu, Ghahremani, Lemoine, & Tesluk, 2022), its dynamics with formal leadership (e.g., Friedrich, Peterson, & Van Doorn, 2024; Schummer, Woelk, Trupp, & Otto, 2024; van Knippenberg, Pearce, & van Ginkel, 2024), and its impact on team outcomes (e.g., Carson et al., 2007; D'Innocenzo et al., 2016; Wang, Waldman, & Zhang, 2014). As we gain a deeper understanding of the development and functioning of shared leadership, it is an opportune moment to investigate how it should be distributed among various teams. Developing a normative model of shared leadership is crucial, as it not only enhances our understanding of the concept but also facilitates its implementation in organizations.

In this article, we draw on a structural perspective to highlight the significant implications of a team's workflow pattern—or the configuration of the team's task interdependence network

(Griffin, Somaraju, Dishop, & Deshon, 2023; Park, Mathieu, & Grosser, 2020)—for shared leadership design. Similar to previous studies (e.g., Bachrach, Powell, Bendoly, & Richey, 2006; Wageman & Baker, 1996; Wageman, 1995), our theorizing assumes that teams have clearly defined workflows and that members possess an accurate understanding of their team's overall workflow. We focus on the task interdependence network for several important reasons. First, the structure of task dependencies is often established early as part of team design (Kiggundu, 1983), so even newly formed teams can leverage the task interdependence network to develop viable shared leadership strategies. Other team networks (e.g., advice and friendship networks) that have often been associated with the study of leadership typically require time to develop and tend to evolve alongside, rather than before, the emergence of shared leadership (Porath, Gerbasi, & Schorch, 2015). The task interdependence network can further set the stage for shared leadership to emerge. Established by the organization (Kiggundu, 1983; Wageman, 2001), task interdependence represents an institutional structure that impacts how team members are likely to perceive each other's influence and that motivates them to act accordingly (DeRue & Ashford, 2010).

Second, the task interdependence network illustrates how resources are strategically allocated to help team members work together and achieve their desired outcomes (McGrath, 1984; Wageman, 1995). Designing shared leadership so it is aligned with the task interdependence network should maximize a team's resource utilization and positively impact its overall performance. In addition, the primary goal of shared leadership is to regulate the coordination processes among team members (Burke, Fiore, & Salas, 2003), and the task interdependence network offers unique insights into task dependencies that shape coordination expectations. Examples of such insights include the proportion and compactness of task

dependencies within the team, as well as the extent to which each member must rely on others to fulfill their role. Accordingly, the task interdependence network can help to inform the distribution of shared leadership that will best support a team's coordination processes and overall effectiveness.

Although prior research has examined task interdependence in the context of shared leadership (see Zhu, Liao, Yam, & Johnson, 2018 for a review), the focus has been on how it moderates the effects of shared leadership, rather than on how it can serve as a foundation for configuring effective shared leadership. Another limitation of prior research is its tendency to treat task interdependence as a team's uniform, shared property. This approach oversimplifies the distribution and structure of task interdependence, potentially underestimating the intricacies and variety of real-world workflow patterns (Griffin et al., 2023; Park et al., 2020). Furthermore, by adopting this approach, researchers inadvertently imply that every team member shares identical responsibilities and exchanges task-related information with the same individuals. Such an assumption overlooks the differentiated nature of task and resource assignments (Ellis, Bell, Ployhart, Hollenbeck, & Ilgen, 2005; Humphrey, Morgeson, & Mannor, 2009) and its role in shaping how leadership should be distributed among team members.

In the following sections, we outline the wide-ranging implications of the task interdependence network for shared leadership design. Our framework describes how the task interdependence network can serve as a robust foundation for identifying individuals well-positioned for leadership roles (DeRue, 2011; DeRue & Ashford, 2010) and for determining the optimal level of shared leadership for team performance (D'Innocenzo et al., 2016; Xu, Ghahremani, Lemoine, & Tesluk, 2022). We further propose that shared leadership strategies may need to differ depending on the type of leadership—task-oriented versus relationship-

oriented—and elaborate on the distinct implications that the task interdependence network can have for these leadership types. Our intention is not to cover all leadership types identified in the literature or to imply that task and relationship are the only dimensions of shared leadership. Rather, we use a behavioral leadership lens (Bales, 1950; Bales & Slater, 1955; Kellett, Humphrey, & Sleeth, 2006) as an exemplar to demonstrate that the implications of task interdependence for leadership design may vary depending on the type of leadership being considered. Finally, we conclude the article by discussing the theoretical implications of our framework, as well as potential directions for future research.

Extant Literature on Shared Leadership

Shared leadership (Carson et al., 2007; Day et al., 2004; Pearce & Conger, 2003) is a team phenomenon whereby leadership responsibilities are shared with team members. Shared leadership emerges from a series of complex dyadic negotiations among members on leadership responsibilities (Carson et al., 2007; DeRue & Ashford, 2010; D'Innocenzo et al., 2016; Mehra et al., 2006). DeRue and Ashford (2010) described the formation of shared leadership as an influence process in which some or all members claim the leader identity and their peers are willing to grant the claim by turning themselves into followers. To capture the subtleties and complexities of shared leadership manifestations, scholars have conceptualized and operationalized shared leadership as a social network that involves a set of actors (i.e., members in a team) and ties (i.e., leadership ties) that link them (Carson et al., 2007; Chiu, Owens, & Tesluk, 2016; Mehra et al., 2006). The social network approach reflects the multilateral, interactive nature of shared leadership, such that the overall shared leadership in a team is a network of the leadership connections in all dyadic subgroups combined (Carter, DeChurch,

Braun, Contractor, 2015; DeRue, 2011; DeRue & Ashford, 2010; Friedrich, Peterson, & Van Doorn, 2024).

To date, the literature has predominantly taken a descriptive approach to understanding shared leadership. Common topics in this area tend to revolve around how shared leadership influences team outcomes (see Zhu et al., 2018, for a review), how it co-exists with vertical leadership (e.g., Friedrich et al., 2024; Schummer et al., 2024; van Knippenberg et al., 2024), and how it emerges over time (e.g., DeRue, 2011; DeRue & Ashford, 2010; Xu et al., 2022). With the increasing evidence of the importance of shared leadership and a clearer understanding of its emergence, we can begin to develop a normative model that addresses a remaining puzzle: how to configure the distribution and level of shared leadership to enhance team performance. Previously, the relationship between shared leadership and team performance was thought to be linear, with the assumption that more shared leadership would lead to better performance. More recent research, however, suggests that maximizing shared leadership does not always result in superior outcomes (Mehra et al., 2006), highlighting the need for theories that provide guidance on strategies for effective shared leadership design.

Task Interdependence Network as a Foundation for Configuring Shared Leadership

Task interdependence is an important structural property of teams. It reflects the extent to which coordination and interaction about information, materials, and support are required to complete tasks (Guzzo & Shea, 1992; Wageman, 1995). In essence, task interdependence governs the decisions and actions of multiple individuals who are connected to one another, in that their behaviors might differ from those that any one of them would have displayed if they were completely independent. Task interdependence has been conceptualized and measured through two primary approaches: the aggregate approach and the social network approach. The

aggregate approach, which has dominated past research, implicitly assumes that a team's task interdependence emerges from an undifferentiated whole of members. This may not always be the case, as interactions among team members are more likely to follow nonuniform, complex, and dynamic patterns (Crawford & LePine, 2013; Ellis et al., 2005; Humphrey et al., 2009; Park et al., 2020). Such phenomena arise from the division of labor, which creates different jobs and roles within a team. When members are assigned different responsibilities, their degree of interdependence and the specific individuals to whom they are connected vary (Brass, 1981; Van de Vegt, Emans, & Van De Vliert, 2001). To address this limitation, recent research has suggested using the social network approach to conceptualize task interdependence. This approach is proposed to more accurately capture the distributed nature of dependencies among team members (Griffin et al., 2023; Park et al., 2020), allowing for a more nuanced understanding of the reliance and influence each member has on others in acquiring work resources. It can also elucidate differences in task interdependence across teams that might be deemed to have the same level of task interdependence under the aggregate approach.

Extant Literature on the Implications of Task Interdependence for Shared Leadership

Prior studies have incorporated task interdependence into the examination of shared leadership. Regardless of their theoretical models, these investigations tend to exhibit several common characteristics. First, they consider task interdependence to be one of the many boundary conditions that impact the relationship between shared leadership and team performance (Bligh, Pearce, & Kohles, 2006; D'Innocenzo et al., 2016; Nicolaides et al., 2014; Pearce, 2004). Although prior research has emphasized the critical role of task interdependence, it has been examined as a moderator of the effects of shared leadership rather than as a

foundational team characteristic that can inform the optimal configuration of shared leadership in a team.

Another notable characteristic of prior research is its predominant reliance on the aggregate approach to conceptualizing task interdependence, which has resulted in relatively vague conclusions regarding the role of task interdependence in moderating the effect of shared leadership on team performance. For example, while it is established that higher task interdependence necessitates more shared leadership to enhance team performance (Bligh et al., 2006; D'Innocenzo et al., 2016; Nicolaides et al., 2014; Pearce, 2004), the definitions of 'higher' or 'lower' task interdependence remain unclear. Teams with the same level of task interdependence under the aggregate approach may exhibit markedly different workflow patterns (Griffin et al., 2023; Park et al., 2020).

Finally, prior research has primarily examined the implications of task interdependence for shared leadership at the team level of analysis, overlooking the distinct resources each team member possesses based on their positions within the workflow and how such resources may influence their potential for leadership. Consider a fictitious team of four members: Andy, Bella, Calvin, and Demi (see Figure 1). According to the task interdependence network, other members depend on both Andy and Bella. Bella, Calvin, and Demi depend on Andy, while Andy, Calvin, and Demi depend on Bella. On the other hand, only Bella depends on Calvin, and none of the team members depend on Demi. This network highlights the significant control and influence Bella and Andy have over the team's activities. It also shows Demi's minimal influence compared to other team members. Demi might not be well-positioned to become a leader due to her limited influence, while Bella, Andy, and even Calvin are better candidates for leadership roles.

Insert Figure 1 about here

A New Perspective on the Implications of Task Interdependence for Shared Leadership

In this article, we propose that the task interdependence network can be used to determine the distribution and level of shared leadership best suited for maximizing team performance. The task interdependence network overcomes limitations of the aggregate approach by effectively distinguishing between teams with the same aggregate level of task interdependence, while also offering the opportunity to identify individuals who are well positioned for different shared leadership activities. More importantly, compared to other team characteristics examined as boundary conditions in the shared leadership literature (e.g., team mental models, team tenure, job variety) (see Zhu et al., 2018 for a review), the task interdependence network is a uniquely valuable resource for designing shared leadership for two key reasons.

First, the task interdependence network can set the stage for the emergence of shared leadership. Research suggests that the emergence of shared leadership occurs through an influence process in which some or all team members claim the leader identity, while their peers acknowledge these claims and adopt the role of followers (DeRue, 2011; DeRue & Ashford, 2010). One of the predictors that determine whether people will claim and grant leader/follower identities is institutional structures (DeRue & Ashford, 2010). These are formal social systems that all team members recognize and operate within. Individuals who occupy an influential position in an institutional structure are more likely to be granted a leadership position in the shared leadership network, as it signifies an institutional endorsement of a leader identity. For the same reason, individuals in powerful positions may feel an increased sense of responsibility and perceive lower risk in claiming a leader identity, making them more willing to do so than those

who are not in powerful positions. The task interdependence network is an example of such an institutional structure. It is established by the organization to guide the work process and the distribution of resources among group members (Wageman, 2001). Therefore, leaders and followers identified based on the extent to which they hold influential positions in the task interdependence network are likely to engage in actual leading and following activities.

Second, as task interdependence is a fundamental aspect of team design, information about the task interdependence network is typically available early in a team's lifecycle, enabling even newly formed teams to leverage it when formulating strategies for shared leadership. Other team networks (e.g., advice and friendship networks) that have been considered in the leadership literature typically require time to develop and tend to evolve alongside, or even after, shared leadership (Porath et al., 2015). Peng, Schaubroeck, Kim, and Zeng (2023), for example, found that informal leadership shapes how members decide whom to seek advice from, not the other way around.

Proposition 1: The task interdependence network can serve as a foundation for designing shared leadership.

We further propose that for shared leadership to positively impact team performance, it needs to align with the task interdependence network. The task interdependence network represents the most efficient way for team members to collaborate and achieve high performance (McGrath, 1984; Wageman, 1995). Decisions regarding task interdependence can be even more critical to team performance than leadership itself (Wageman, 2001). Thus, aligning shared leadership with the task interdependence network is likely to have a significant impact on team performance. In addition, the primary goal of shared leadership is to regulate the coordination process among team members (Burke et al., 2003), and the task interdependence network offers

unique insights into task dependencies that shape coordination expectations. For example, when team members are expected to work independently with minimal coordination, the task interdependence network reflects fewer connections among them. When extensive coordination is required across all aspects of the task, the network becomes more compact with a denser web of ties among members. Research employing the aggregate approach to task interdependence offers early support for this argument. It shows that shared leadership is most effective in teams where members are highly interconnected and integrated and becomes minimally useful—or even counterproductive—when team members operate entirely independently (e.g., Bligh et al., 2006; D'Innocenzo et al., 2016; Nicolaides et al., 2014; Pearce, 2004).

Proposition 2: When shared leadership is aligned with the task interdependence network, it is likely to have a positive impact on team performance.

An Alignment Framework for Task Interdependence Networks and Shared Leadership

Below we outline the implications of aligning shared leadership with the task interdependence network at both the team and individual levels. At the team level, we examine how the network can be used to determine the optimal level of shared leadership. At the individual level, we explore how the it can help to identify potential leaders for shared leadership.

To provide a nuanced understanding of this multilevel alignment, we distinguish between different types of shared leadership in our theorizing rather than studying shared leadership as a whole. Drawing on the behavioral leadership literature (Bales, 1950; Bales & Slater, 1955; Hollander, 1961; Kellett, Humphrey, & Sleeth, 2002), we focus on two types of shared leadership: task and relationship. Task leadership is demonstrated through cognitive behaviors relevant to orchestrating the team's work and includes functions such as structuring and planning,

providing feedback, and solving problems (Hiller, Day, & Vance, 2006; Morgeson, DeRue, & Karam, 2010). Relationship leadership, on the other hand, improves team members' well-being and facilitates positive interpersonal interactions. This leadership type includes functions such as managing team conflicts, providing emotional support and encouragement, and fostering a cohesive team atmosphere (Morgeson et al., 2010).

Identifying Optimal Shared Leadership Level Based on the Task Interdependence Network

We examine the implications of task interdependence for determining the optimal level of shared leadership through 'centralization' and 'density'. Centralization represents the overall compactness or cohesion of a network, indicating the extent to which ties are spread equally (low centralization) or organized around certain focal points (high centralization; Wasserman & Faust, 1994). Density, on the other hand, refers to the proportion of possible connections that are present (Wasserman & Faust, 1994). A network is considered completely dense (or constrained) if all connections are present. In the case of task interdependence, network centralization can be understood as a measure of a team's interdependence inequality, while network density can be understood as the total amount of interdependence among team members. Similarly, a dense (vs. sparse) shared leadership network reflects a significant (vs. minimal) amount of leadership sharing among members. When the network is centralized (vs. decentralized), leadership responsibilities are assumed by one or a few members (vs. by many or solely by an external source). Centralization and density are distinct dimensions of a network, thus representing the network better when considered jointly than separately (Lemoine, Koseoglu, Ghahremani, & Blum, 2020; Xu et al., 2022).

Identifying Optimal Task Leadership Level

At the team level, effective task leadership design should take into consideration the configurations of the task interdependence network, which reveal the complex nature of the team task and the extent of dependencies that characterize the coordination expectations among team members. Consider a scenario where the task interdependence network is decentralized and dense. Work constraints in this scenario are evenly distributed across team members (see Figure 2a). Each member has to rely on almost every other peer to complete their tasks and few individuals are significantly more influential than the rest. The configurations of the task interdependence network represent the significant complexity of the team task and of the decision-making process. Indeed, highly complex tasks demand tightly coupled intra-team linkages, close collaboration, and frequent information sharing among members (Kozlowski & Bell, 2003; Kozlowski, Gully, Nason, & Smith, 1999). Any decision made will impact all members' individual performance and the team's overall outcomes. Accordingly, we expect that the task leadership network should be dense and decentralized. All (or nearly all) members will need to work together to establish team structures and processes, and collectively engage in task leadership activities that help the team accomplish shared goals.

Insert Figure 2 about here

Proposition 3a: When the task interdependence network is decentralized and dense, team performance will be enhanced when the task leadership network is decentralized and dense.

On the other hand, when the task interdependence network is centralized and sparse, the task interdependence network represents a hierarchical work structure, with one or few members being very central, and the rest being only connected to the central members. The central

members are responsible for providing resources and task support and making the majority of the team's collaborative decisions. Previous studies have suggested that when minimal collaboration is required, team members are likely to work on static, unambiguous tasks with rigid procedures in place (Bell & Kozlowski, 2002; McGrath, 1991). Under such circumstances, a high degree of shared leadership contributes insignificantly to overall team effectiveness (e.g., Kerr & Jermier, 1978; Pearce, 2004). The centralized and sparse nature of the task interdependence network in this scenario also indicates that there is a very limited number of members well-positioned for the role of task leader, given the substantial influence gap between these individuals and the rest of the team. In the example illustrated in Figure 2b, A emerges as the sole potential task leader, wielding significant influence over others. Therefore, the task leadership network should be centralized and sparse, with task leadership primarily assumed by A rather than shared with other team members.

Proposition 3b: When the task interdependence network is centralized and sparse, team performance will be enhanced when the task leadership network is centralized and sparse.

Identifying Optimal Relationship Leadership Level

Even though task interdependence may appear to have little relevance to relationship leadership, we maintain that the positive effect of relationship leadership on team performance is largely contingent upon the extent to which relationship leadership helps facilitate the flow of information and other critical task resources. When dislike or antagonism among certain task-interdependent members is not promptly addressed, for example, these members may decline to provide each other with the necessary work inputs or choose to provide them in a suboptimal manner. As a result, the coordination process among team members might be disrupted, and teams might be unable to deliver their expected outcomes. Conversely, focusing on interpersonal

issues between non-task-interdependent members is unlikely to enhance team performance because negative feelings among these members should not hinder the flow of task inputs or the completion of assignments by the rest of the team (Park et al., 2020). Therefore, relationship leadership has the greatest impact on teams when it is aligned with the task interdependence network. In the absence of alignment, relationship leadership is unlikely to affect how a team performs its tasks and its overall outcomes.

The sharing of relationship leadership likely operates under different mechanisms than task leadership. The main reason for this is that emotions and affect can be contagious (Barsade, 2002; George, 1995; Sy, Côté, & Saavedra, 2005), while task knowledge tends not to be. Indeed, research has suggested that relationship leaders rely on emotional contagion to exercise their influence (Cherulnik, Donley, Wiewel, & Miller, 2001; Sy, Choi, & Johnson, 2013) and foster affective convergence among their followers (Barsade, 2002; Barsade & Knight, 2015; Ilies, Wagner, & Morgeson, 2007; Totterdell, Kellett, Teuchmann, & Briner, 1998). When socio-emotional guidance and support effectively ripple down from just a few leaders, a team can conserve or direct its resources to other activities that might further enhance performance. Therefore, relationship leadership should be assumed by a minimal number of members rather than being widely shared across the team. In the same team, an effective task leadership network can look very different from an effective relationship leadership network.

In the decentralized and dense task interdependence network scenario, for example, the task interdependence network configuration suggests that a high-quality team social climate is crucial to facilitate frequent collaboration and coordination among the members. This, along with the principle that the number of relationship leaders should be minimized, implies that only one or a few team members should act as relationship leaders, while the rest of the team assumes the

role of followers. The relationship leadership network should thus be centralized and sparse, even though task leadership is decentralized and dense.

> *Proposition 4a:* When the task interdependence network is decentralized and dense, team performance will be enhanced when the relationship leadership network is centralized and sparse.

On the other hand, when the task interdependence network is centralized and sparse, relationship leadership should be concentrated among central members and task interdependent dyads rather than shared among all team members. Consider the example in Figure 2b, with A being the only receiver of the task interdependence ties. Due to the lack of task flow ties among the other members, it does not matter much for team effectiveness whether these members get along or not (Park et al., 2020). It is, however, unlikely to be the case when there is hostility between A and other members. In a situation where any team members perceive interpersonal incompatibility with A, even though A does not necessarily feel the same and still delivers inputs as intended, the members might negatively evaluate the quality of A's inputs, which can be detrimental to team effectiveness. If A is the subject of relationship conflicts, team effectiveness will likely be even more impacted since the whole task flow system is susceptible to complete disruption. Relationship leadership, therefore, should focus specifically on A as well as the interactive dyads involving A and other members.

Such prioritized attention to central members (e.g., A), however, poses the question as to whether or not relationship leadership responsibilities should be shared within such a team. In our example, every member is exclusively connected to A, which indicates that the remainder of the team may not be as aware of relationship problems occurring between each member and A. Second, the non-central members might not be suitable to assume the leadership role since they

are dependent on the central members to perform their tasks and, therefore, have less influence than the central members. Conversely, the central members are also unlikely to be a good fit for the position since they are primarily the recipients of the outputs of relationship leadership activities. Taken together, we suggest that relationship leadership should be assumed by external sources (e.g., sponsors, coaches, advisors) (Morgeson et al., 2010) rather than the team itself.

> *Proposition 4b:* When the task interdependence network is centralized and sparse, team performance will be enhanced when relationship leadership is assumed by external management rather than the team itself.

Identifying Potential Leaders Based on the Task Interdependence Network

Identifying Well-Positioned Task Leaders

The task interdependence network further provides a solid basis for identifying potential team members for task leadership. As task leaders are responsible for orchestrating work activities and resolving task-related issues in a timely and sufficient manner (Hiller et al., 2006; Morgeson et al., 2010), potential candidates for task leadership positions should have access to unique and important information about the workflow and coordination of interdependent tasks. In addition, these individuals should occupy an influential position in the task interdependence network, which increases their willingness to claim a leader identity and the likelihood that their peers will grant them that identity (DeRue & Ashford, 2010). Below we propose three key positions in the task interdependence network that fulfill these requirements for task leaders. We label these positions as *sought-afters*, *coordinators*, and *representatives*.

The Sought-After. The first strategic position in the task interdependence network for task leadership is *the sought-after* (see Figure 3). Sought-afters are individuals who have a higher number of task interdependence network ties directed to them (i.e., have high in-degree

centrality) (Burkhardt & Brass, 1990; Freeman, 1978; Kilduff & Krackhardt, 1994). They serve as the central source of resources and are relied upon by many of their peers. The unique location of sought-afters in the workflow is likely to elevate their relative standing within the team by indicating the amount of work responsibility they are tasked with and the relevance of their expertise to that of the connected members. As such, sought-afters are usually found to be among the most influential and popular individuals (Wasserman & Faust, 1994). In addition to their expertise and influence, sought-afters are known for their capability to accumulate work-related information that might not be widely available or will be available to others but at a later time, all thanks to their expansive connection (Baldwin et al., 1997; Brass & Burkhardt, 1993).

Insert Figure 3 about here

The Coordinator. In addition to sought-afters, individuals who occupy brokerage positions connecting different task subgroups in a team are also well-positioned to become task leaders. These members can be referred to as *coordinators* (see Figure 3) since they facilitate the flow of work resources and information between pairs or clusters of members who are otherwise not connected (Burt, 1992; Gould & Fernandez, 1989). Coordinators can be seen in cross-functional teams where individuals of the same functional areas are grouped together, or in action teams where subgroups are formed around action-oriented goals. The coordinator's role is critical because people in the same subgroups might be highly interdependent on one another such that it is challenging for many of them to maintain task ties with the outside team members. In addition, subgroups of little overlapping focus might be designed to have a number of members with external ties limited as a means of resource conservation.

Coordinators wield the power of sought-afters without necessarily possessing the same number of ties. Coordinators' advantages include the breadth of nonredundant information from indirect contacts and the timely receipt of task information that passes between subgroups (Burt, Kilduff, & Tasselli, 2013). Thus, coordinators are likely among the first to recognize task-related misunderstandings, intra-team workflow misalignments, or the asymmetrical distribution of information about shared goals, procedures, or strategies across the team. They are also among the few people able to promptly move unknown information to areas where it has value and whose voices are heard by the subgroups and individuals they bring together (Brass, 1984; McEvily & Zaheer, 1999). Carried to the extreme, coordinators can impair cooperation, trust, and goodwill (McEvily & Zaheer, 1999). Such control of resources provides a theoretical explanation for coordinators' significant influence over other members (Brass, 1984).

The Representative. While research has traditionally viewed a team's task interdependence network as confined to the focal team, it is important to recognize that in today's organizational landscape, most teams extend their efforts beyond their immediate boundaries to maintain relationships with external actors (e.g., key clients, managers, and senior executives) (Ancona, 1990; Ancona & Caldwell, 1992; Marrone, Tesluk, & Carson, 2007). Therefore, we consider team members' immediate task connections with external actors as part of the team's task interdependence network. In this extended network, those who occupy brokerage positions responsible for establishing linkages with external constituents and units within (e.g., managers, senior executives) or outside the team's host organization (e.g., key clients, business partners) have a high potential for task leadership roles. We refer to them as *representatives* (Ancona, 1990; Gould & Fernandez, 1989) (see Figure 3).

Representatives are well-positioned to become task leaders for at least two main reasons. First, they are influential individuals in a team since they are already tasked with acting on the team's behalf (Gould & Fernandez, 1989). Representatives serve as a conduit of information, enabling the team to retain links with the rest of the organization or beyond the organization while ensuring minimal disturbances to other members. Such boundary-spanning activities can determine the success of the team (de Vries, Walter, Van Der Vegt, & Essens, 2014), and their critical role is increasingly recognized in the literature (Mathieu, Gallagher, Domingo, & Klock, 2019). Second, representatives can predict and elaborate on external demands and expectations, which helps teams develop timely action plans and strategies that balance both internal and external interests (Morgeson et al., 2010).

> *Proposition 5:* Team performance will be enhanced when task leadership activities are performed by those who are (a) more central in the workflow (i.e., sought-afters), (b) more connected across subgroups or coalitions within the team (i.e., coordinators), or (c) more connected with external stakeholders (i.e., representatives).

Identifying Well-Positioned Relationship Leaders

Important characteristics of an effective relationship leader include the ability to quickly recognize interpersonal issues (e.g., relationship conflicts) among interconnected members and to occupy an influential position in the task interdependence network. Similar to task leadership, occupying an influential position in the task interdependence network is likely to lead to being granted a relationship leadership position as it signifies institutional endorsement of a leader identity. Individuals occupying influential positions in the task interdependence network may also feel an increased sense of responsibility for team performance and perceive lower risk in claiming a relationship leader identity. Due to this reason and because interpersonal issues

arising among team members may hinder the coordination process and negatively impact team performance (Park et al., 2020), individuals occupying influential positions in the task interdependence network are expected to be more willing to emerge as relationship leaders compared to their peers.

Representatives may not be well suited to perform the relationship leader role due to their boundary-spanning responsibilities. Charged with managing an array of internal and external contingencies simultaneously (Katz & Kahn, 1978), representatives need to expend considerable time and effort on enhancing the breadth of their expertise, building a wealth of contacts, and honing communication skills necessary to be accepted by groups beyond their own (Aldrich & Herker, 1976; Katz & Kahn, 1978; Marrone et al., 2007). As a result, they often face resource constraints and excessive role demands (Marrone et al., 2007) which are likely to impede their ability to observe relationship dynamics among their team members and offer timely interventions when necessary. Unlike representatives, sought-afters and coordinators are better positioned to engage in relationship leadership, yet they may not be the only ones. Below we explain why sought afters and coordinators can be considered for the relationship leader role and propose another candidate, labeled *nearby colleagues*, for this role.

The Sought-After. The ability of *sought-afters* to accurately perceive their social surroundings has been frequently documented in the social network literature. For example, early studies suggested that individuals occupying a central position in their team's network are more likely to have an accurate understanding of the team's sentiments towards each member (e.g., Greer, Galanter, & Nordlie, 1954). More recent scholarship has further found that sought-afters can discern social connections not only between the team and individual members but also between specific pairs of individual members—such as who seeks advice from whom, who is

friends with whom (Bondonio, 1998; Casciaro, 1998), or who has conflicts with whom (Avgar & Neuman, 2015).

In addition to their accurate insights into interpersonal interactions within the team, another reason why sought-afters are considered well-positioned to fulfill relationship leadership duties is their likelihood of being acknowledged as leaders. Given their position in the task interdependence network, sought-afters are highly influential individuals, upon whom a significant number of other team members must rely to complete their tasks.

The Coordinator. *Coordinators* are also a potential fit for the relationship leader position as they occupy an influential position, and they are sensitive to interpersonal issues within the team. If there are relationship conflicts between the subgroups they broker, coordinators—caught in the middle—might feel pressured to display loyalty to one side or the other, even if they want to support both (Krackhardt, 1999). Their behaviors are closely monitored by members of both sides (Marineau, Labianca, & Kane, 2016). In response to these cross-pressures, coordinators may engage in diplomatic tactics that allow them to maintain a helpful yet neutral image (e.g., Tasselli & Kilduff, 2018). This impression management is likely to increase others' perception of their ability to perform relationship leadership (Humphrey, 2002). Not only are coordinators able to detect negative ties between subgroups, but they are also likely to have the motivation to improve the social climate within the individual subgroups. Reasons for this include the fact that their performance is largely shaped by the performance of the subgroups to which they are connected. Any interpersonal issues that affect how well each of the subgroups functions might also affect how well coordinators do their jobs.

The Nearby Colleague. Another suitable candidate for the relationship leadership position is *the nearby colleague*. The term *nearby colleague* refers to team members who are the

closest ones to all other individuals in the team's interdependence network (i.e., having high closeness centrality scores) (Borgatti, 2005; Freeman, 1978) (see Figure 3). Unlike coordinators who are responsible for brokering subgroups within the team, nearby colleagues do not necessarily engage in brokering activities. Thanks to their unique positions, nearby colleagues have exposure to various task subgroups or pockets of sought-afters (i.e., highly connected individuals), obtain knowledge and other resources early when they have the most value (Borgatti, 2005), transmit information efficiently, and possess an awareness of within-team conflicts (Perry-Smith & Shalley, 2003). Compared to their peers, these individuals are also less reliant on others as intermediaries of information (Wasserman & Faust, 1994). Such unique capabilities often enable nearby colleagues to be seen as one of the influential members of their teams (Wasserman & Faust, 1994).

Due to their proximity to others in the task interdependence network, nearby colleagues might be among the first to recognize potential conflicts that could disrupt interaction dynamics among team members. Additionally, they are well-positioned to observe the emotional well-being of most members and its impact on the exchange of work resources and collaboration. This is because establishing close connections with the majority of the team can be relatively straightforward for nearby colleagues, as task relationships often serve as precursors to workplace intimacy (Schinoff, Ashforth, & Corley, 2020). Another significant yet distinctive advantage of nearby colleagues is their freedom from the control of task intermediaries (Wasserman & Faust, 1994), which allows them to strive for impartiality as relationship leaders.

> *Proposition 6:* Team performance will be enhanced when relationship leadership activities are performed by those who are (a) more central in the workflow (i.e., sought-afters), (b) more connected across subgroups or coalitions within the team (i.e.,

coordinators), or (c) closer to every other member in the workflow (i.e., nearby colleagues).

Discussion

In this article, we adopt a structural perspective to explore the implications of the task interdependence network for determining the optimal distribution and level of shared leadership in teams. We argue that achieving alignment between the task interdependence network and shared leadership is crucial for enhancing team performance. Our framework also suggests that the implications of the task interdependence network for shared leadership can vary across different leadership types. A level of shared leadership considered optimal for one type (e.g., task-oriented) may not be ideal for another (e.g., relationship-oriented), and individuals well-positioned for one leadership type may not be suitable for another. Table 1 provides a summary of our alignment framework in which we highlight the distinct implications of the task interdependence network for task versus relationship leadership.

Insert Table 1 about here

Our normative framework of shared leadership is novel in that it focuses on the unique value of the task interdependence network in guiding teams to develop effective shared leadership strategies. Prior work, on the other hand, has primarily viewed task interdependence in its narrow role of either enhancing or diminishing the effects of shared leadership. It is also important to note that in our framework task interdependence is examined through a social network lens, which allows us to explore an uncharted area in the shared leadership literature: the individuals who participate in shared leadership. In an effort to distinguish itself from individual-level leadership domains, the shared leadership literature has tended to focus exclusively on the

team level of analysis (see Zhu et al., 2018 for a review). While shared leadership is a team-level construct (Carson et al., 2007; D'Innocenzo et al., 2016; Pearce & Sims, 2002), the distribution of leadership is likely to involve multiple levels of analysis. It concerns not only the overall level of leadership shared at the team level but also the individual members who assume leadership responsibilities. Especially in cases where distributing leadership among all team members is deemed inappropriate, it becomes critical to identify which team members should be designated as leaders and for which specific leadership responsibilities they should be held accountable.

Beyond the shared leadership literature, there have been efforts to investigate the propensity of individual team members to emerge as leaders using informal team networks such as advice (e.g., Parker & Welch, 2013) and friendship (e.g., Emery, Daniloski, & Hamby, 2011) networks. However, this line of research can be distinguished from our investigation in several ways. First, examining who is better positioned to become leaders—a central theme of our study—is distinct from examining who is more likely to emerge as leaders. The former not only focuses on an individual's potential success in obtaining the leader title but also on the specific resources they possess that directly contribute to team performance. The latter, which has received more attention in the leadership literature, focuses solely on others' perceptions of an individual's status that may or may not be relevant to performance. Second, as informal networks (e.g., advice and friendship networks) are not directly linked to the flow of task-related resources, their implications for team processes and functioning may not be as significant as those of the task interdependence network. Avgar and Neuman (2015), for example, discovered that occupying central positions in the task interdependence network (e.g., sought-afters) enabled individuals to accurately detect intra-team conflicts, whereas centrality in informal networks did not correlate with conflict detection accuracy. Third, informal team networks often evolve

alongside the leadership network (Porath et al., 2015), whereas task interdependence is a fundamental part of team design, which makes it a reliable foundation for strategizing the effective distribution of leadership.

Another notable theoretical implication of our normative model is that it recognizes that the implications of the task interdependence network may vary across different types of shared leadership. Even though previous research has conceptualized shared leadership as a multidimensional construct (e.g., Drescher, Korsgaard, Welpe, Picot, & Wigand, 2014; Hiller et al., 2006; Pearce & Sims, 2002), it has been studied in the aggregate. This approach inadvertently assumes that the different types of shared leadership function in the same manner and always converge. As we illustrated through our example on task and relationship leadership, it is crucial to acknowledge that the various types of shared leadership may operate differently in order to devise appropriate strategies for distributing these responsibilities.

A Future Research Agenda

Empirical Tests of the Model

First, we recommend that future research accounts for the multilevel nature of shared leadership by examining both the individuals who participate in shared leadership activities and the manifestation of shared leadership at the team level. Even if researchers are only interested in a specific component of the model, such as the individuals in the network or the configurations of the whole network, a multilevel lens remains critical. When determining the extent to which a member is well-positioned for a leadership role, for example, researchers should map the task interdependence network of the team first. Only then is it possible to evaluate the importance of that member in the workflow and the resources they can leverage to influence the team's accomplishment of interdependent activities.

Examining shared leadership from a multilevel perspective further enables us to explore situations where the alignment between shared leadership and task interdependence varies across levels. For example, we posit that when the task interdependence network is centralized and sparse, only the few members who are the objects of interdependent ties should assume the task leader role to keep the leadership network centralized and sparse. If the task leadership network meets the centralization and sparsity requirements in reality but the leaders are different from the well-positioned members, alignment exists at the team level but not at the individual level. In such situations, important questions arise about how partial alignment across levels impacts the overall effectiveness of shared leadership.

Third, as there are various types of shared leadership, it is essential to identify effective methods for measuring the networks associated with these types. For example, consider task versus relationship leadership. Rather than simply asking participants to rate their reliance on one another for leadership, researchers should clearly differentiate between task and relationship leadership in their questions. Existing team leadership frameworks, such as those developed by Morgeson et al. (2010) and Hiller et al. (2006), can serve as a helpful resource for creating these measures. Researchers may also need to investigate whether a one-item scale—a widely adopted method for measuring social networks (e.g., Carson et al., 2007, Xu et al., 2022)—is sufficient to capture how different types of leadership are shared within a team, or whether the use of multiple items should be considered.

Finally, future research can rely on social network analyses (SNA) to operationalize different configurations of the shared leadership network. Having all team members report on their leadership and/or followership relationship with every other member (e.g., Carson et al., 2007; Chiu et al., 2016; Mehra et al., 2006) is one means of assessing the directional relations we

featured. Another promising approach is utilizing cognitive social structures (CSS) (Krackhardt, 1987). While SNA examines the actual patterns of interactions, CSS studies the patterns as perceived by team members. When using CSS, researchers ask participants to report not only their leadership and/or followership relationship with every other team member but also their perceptions of the relationships among other team members. By allowing for a richer examination of shared leadership dynamics, CSS can provide insights into the accuracy of an individual's perception of the shared leadership network and enable us to examine the extent to which the perceptual approach can replace the more challenging method of collecting data from all members in the network.

Theoretical Extensions and New Directions

Several aspects of our framework lay the groundwork for interesting future research directions. First, our framework emphasizes the importance of capturing the multidimensional nature of shared leadership. Although we draw on the behavioral leadership perspective (e.g., Bales, 1950; Bales & Slater, 1955; Kellett et al., 2006) to conceptualize the task and relationship dimensions of shared leadership, we believe that other leadership theories (e.g., functional leadership theory) can also contribute to our understanding of its multidimensionality. In such cases, we recommend that researchers clearly define the dimensions comprising shared leadership in their models and consider the potential divergences of those dimensions.

Second, future research is needed to investigate how teams can achieve the ideal alignment between the task interdependence network and shared leadership in practice. For example, we theorize that, depending on the configuration of the task interdependence network, not all well-positioned members need to participate in leadership activities. In the scenario where the task interdependence network is decentralized and dense, the relationship leadership network

should be centralized and sparse, even if most team members are well-positioned for leadership roles. In such situations, it is critical to explore strategies that encourage the emergence of a select few leaders when multiple candidates are available. Future research should also consider factors that influence a team's success in achieving the ideal alignment between the task interdependence network and shared leadership, such as team and task mental models (Xu et al., 2022). It is likely that teams whose members share a correct understanding of the team's task interdependence network will find it easier to apply the alignment framework than those with divergent understandings of the same network. Another avenue for future research to expand our alignment framework is to investigate the processes through which it enhances team performance. Models of team processes, such as the one proposed by Marks et al. (2001), can be particularly useful in exploring potential mechanisms.

Third, it may be worthwhile to consider personality in the examination of potential team leaders. While our theorizing adopts a structural approach to identify well-positioned members for the leadership role, we recognize that networks do not act—people do. Access to task resources critical for the leadership role does not guarantee effective leadership. Since the leadership literature has emphasized individual personality traits (e.g., empathy) as crucial factors for determining effective leaders (Stogdill & Day, 1965; Yukl, 1998), we find it valuable to investigate the interplay between a member's position in the task interdependence network and their personality in determining their suitability for leadership roles. Particularly in situations where only a few individuals are needed for the leadership role among multiple well-positioned team members, it is possible that personality fit may serve as a key differentiator in determining those who are better suited for the leadership role than others. Future research could further discern whether the outcome of this interaction varies between task and relationship leadership.

Fourth, as there are multiple types of shared leadership (e.g., task and relationship leadership), future investigations should consider the dynamics between them. For example, if certain members are well-positioned for both task and relationship leader roles, how should leadership responsibilities be allocated among them? Should a member be responsible for both task and relationship duties, or should they focus on only one of these responsibilities? On the one hand, maintaining relatively consistent networks across multiple leadership dimensions might enhance member coordination, reduce confusion, and enable mutually reinforcing processes between these dimensions since task and relationship exchanges are often interrelated (e.g., Chung & Jackson, 2013). On the other hand, one can argue that assigning multiple leadership responsibilities to a single member or a focal group of members may result in work overload, ultimately reducing not only the performance of the individual leaders but also that of the entire team. This is because team members in critical positions within the workflow are heavily depended upon by their peers; any negative impact on their performance will also affect the performance of their peers (Ellis et al., 2005; Humphrey et al., 2009).

Another interesting direction for future research is to explore the antecedents and consequences of deviations from the ideal alignment between the task interdependence network and shared leadership. For example, deviations may arise from legitimate reasons aimed at helping the team overcome obstacles to its desired effectiveness, or from unfounded reasons that do not contribute to achieving that outcome. While unfounded deviations are likely to be dysfunctional, the study of legitimate deviations and their impacts on team performance warrants further exploration. Legitimate deviations can occur when individuals deemed well-positioned for leadership roles fail to lead as effectively as expected, or when interpersonal conflicts emerge between these leaders and other team members. It is possible that legitimate deviations have

varying implications for team performance. On the one hand, these deviations can improve team performance by, for example, replacing ineffective leaders with potentially more capable ones. They can also alleviate the stress, dissatisfaction, or frustration that team members may experience when interacting with individuals with whom they have negative feelings (Park et al., 2020). On the other hand, these deviations might place unique strains on new leaders who are less well-positioned to perform leadership roles than the initial leaders. New leaders are unlikely to have the same level of access to the team's critical task and relationship information as the original leaders. In addition, it can be challenging for new leaders to exert influence over the initial leaders who are considered the most influential due to their positions in the task interdependence network. The discrepancy in influence over the team's workflows between new and initial leaders may hinder new leaders from claiming a leadership identity and initial leaders from granting that claim. The team's shared leadership efforts could become fragmented and ineffective. Based on this line of reasoning, it is possible that legitimate deviations can be functional in limited quantity. Beyond a certain point, the benefits of goal-driven deviations are likely to be overshadowed by their drawbacks.

Finally, as noted at the outset of this paper, our framework is premised on the assumptions that teams have clearly defined workflows and that all members have an accurate understanding of their team's overall workflow. Even though these assumptions are consistent with previous research (e.g., Bachrach et al., 2006; Wageman & Baker, 1996; Wageman, 1995), we recognize that they do not hold in all situations. A team might not have a clearly defined workflow in the first place because there is low skill differentiation among the members (Hollenbeck, Beersma, & Schouten, 2012) or because the team's task is so complex or novel that the organization has to rely on the team to decide how subtasks should be allocated and

executed (Raveendran et al., 2020; Wageman et al., 2012). At the same time, empirical evidence demonstrates that individuals can make mistakes when perceiving patterns of relationships, including those between themselves and their colleagues (Freeman, Romney, & Freeman, 1987). For example, team members may perceive themselves as more central in the team task interdependence network than they really are or perceive the team's task to be less interdependent than it really is. Accordingly, scholars are encouraged to expand our study by investigating how circumstances that defy our assumptions affect the viability of our shared leadership framework.

Conclusion

Adopting a structural perspective, we propose that a team's task interdependence network should be taken into consideration when formulating strategies for shared leadership. The alignment between the task interdependence network and shared leadership concerns multiple levels of analysis, from identifying individuals well-positioned for leadership roles to determining the optimal level of leadership sharedness within a team. Our framework further highlights the distinct implications of the task interdependence network for different leadership responsibilities. We hope that this framework will be useful for future research in expanding our understanding of effective shared leadership in teams.

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Figure 1

Task Interdependence Network of a Fictitious Team of Four Members Named Andy, Bella, Calvin, and Demi

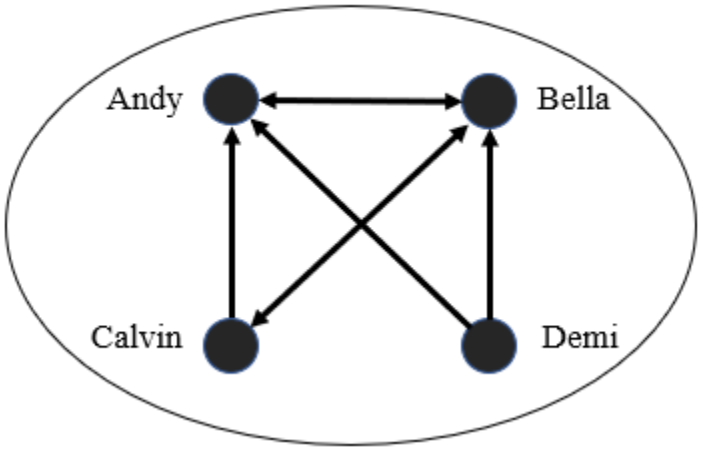


Figure 2

Examples of the Implications of the Task Interdependence Network for Different Shared Leadership Types

Low Centralization – High Density

e.g.,

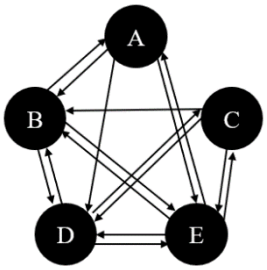


Figure 2a

- Task leadership: decentralized, dense
- Relationship leadership: centralized, sparse

High Centralization – Low Density

e.g.,

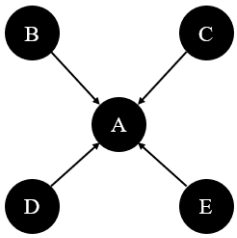
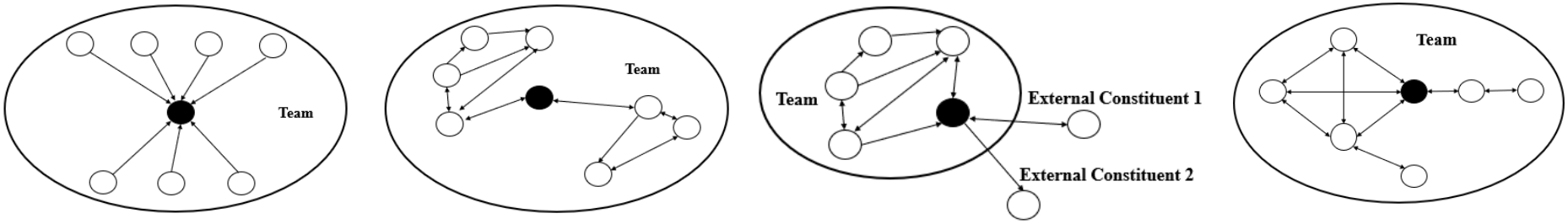


Figure 2b

- Task leadership: centralized and sparse
- Relationship leadership: not shared but assumed by external sources

Figure 3

Illustrations of Key Positions in the Task Interdependence Network



Sought-After
(In-degree Centrality)

Coordinator
(Intra-team Broker)

Representative
(Inter-team Broker)

Nearby Colleague
(Closeness Centrality)

Table 1 *Alignment Framework for Task and Relationship Leadership based on the Task Interdependence Network*