Asymmetry in task dependence among team members
Jong, Simon Barend

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2008

Link to publication in University of Groningen/UMCG research database

Citation for published version (APA):

Copyright
Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

Take-down policy
If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): http://www.rug.nl/research/portal. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Download date: 10-04-2020
SUMMARY

Many of us spend a large part of our lives working in work teams, and our experiences in these teams can significantly influence our well-being, health and happiness (e.g., Sonnentag, 1996). As a result, gaining a deeper understanding of the organization and functioning of work teams is not just interesting, but could also lead to such desirable results as increased well-being or improved team performance (e.g., Ostroff, 1992).

One of the more important theories that both practitioners and scholars use for understanding the functioning of work teams is interdependence theory (e.g., Thibaut & Kelley, 1959). This thesis aims to further the understanding of interdependence in work teams by investigating the role of differences or asymmetries in dependence between team members. These asymmetries in dependence occur when a team member (A) is more dependent on another team member (B) to complete his or her task, than B is dependent on A (e.g., Kelley & Thibaut, 1978). This vital element of interdependence has been largely overlooked in research so far, and in this thesis I aim to fill this gap in the interdependence literature.

In Chapter 1 an overview of interdependence research and theory is provided, which indicates that there are two basic forms of interdependence, namely task and outcome interdependence. Task interdependence is the extent to which team members must share materials, information, or expertise in order to achieve the desired output or performance (e.g., Cummings, 1978), while outcome interdependence is the extent to which significant consequences of work are contingent on the collective performance of tasks (e.g., Van der Vegt et al., 2005). The amount of outcome interdependence can vary independently from the amount of task interdependence (and vice versa). For example, the task interdependence between call-center employees is normally very low because each individual can perform his or her duties without any assistance from the other employees. However, the level of outcome interdependence could be high if the management decided to provide bonuses to the team as a whole, but could also be low if the team members were only rewarded for the number of successful calls they made themselves. Consequently, task and outcome interdependence must be seen as independent constructs. The currently available evidence indicates that positive outcomes are most likely when the degrees of task and outcome interdependence are congruent with each other, such that low task interdependence is coupled with low outcome interdependence and high task interdependence with high outcome interdependence.

In contrast to the abundance of research regarding task and outcome interdependence, only very few studies to date have considered the possibility
that two individuals might differ in their task dependence on each other and the aim of this thesis is to shed some light on this dark corner of interdependence research. Asymmetries in dependence can be expected to exist in most work teams due to differences in the formal or informal resources controlled by group members as a function of different roles, tenures, or natural endowments (e.g., intelligence or charisma). Because asymmetries in dependence are thus often based on differences in resources needed to complete tasks, this thesis focuses on asymmetries in task dependence.

Asymmetries in task dependence have been associated with differences in power. For instance, Emerson (1962) mentioned that "the power of A over B is equal to, and based upon, the dependence of B upon A" (p. 33). Given that the powerful might use their power to their own advantage, our general expectation was that asymmetries in task dependence were detrimental for team processes and outcomes. Although some indirect evidence from recent studies regarding interpersonal and inter-organizational relationships supports this expectation, to date no study has actually investigated the effects of asymmetry in task dependence in work teams. To systematically investigate this matter we conducted field studies at the dyadic, individual, and team level of analysis. Since "power is a property of the social relation [and] not an attribute of the actor" (Emerson, 1962: p. 32) and because dyadic level phenomena have often been overlooked in studies regarding work teams, despite the fact that they have been argued to be important (e.g., Rusbult & Van Lange, 2003), the basic mechanisms operating at the dyadic level are examined first.

The first study is reported in Chapter 2. The main goals of this study were to see if asymmetries in task dependence could actually be measured in real life teams and to test if the proposed power perspective would be a suitable framework for understanding the influence of asymmetry in task dependence on interpersonal processes, such as interpersonal helping and trust. Extending the knowledge about trust is important because building and maintaining interpersonal trust is crucial for the effective functioning of work teams and team performance. The review of the literature indicated that, even though task dependence has been mentioned as a core requirement for the development of trust (Rousseau et al., 1998), only few studies have actually investigated this relationship empirically. A shortcoming of these studies was that they only considered team members to be equally task dependent on each other and thereby overlooked asymmetries in task dependence. As a consequence, very little is currently known about how team members working within various configurations of task dependence develop a conviction that fellow team members can (or cannot) be trusted.
To address this issue, we conducted a study involving 132 working relationships among 60 individuals from 29 teams. Social relations analyses revealed that an increase in a team member's task dependence on another team member was associated with higher levels of perceived help from, and interpersonal trust in, that specific team member, provided the other member is highly task dependent on the focal member. The results also indicated that the more powerful person in the asymmetrical relationship does not always (ab)use his or her power. The degree to which an actor perceived a relationship with a partner to be helpful partially mediated the relationship between task dependence and trust. These findings highlight the importance of attending to asymmetries in task dependence, and provide valuable insights into mechanisms that can explain the development of trust in organizational work teams. Taken together the results from the first study contribute to the advancement of interdependency theory by demonstrating that asymmetries in task dependence can indeed be measured in work teams and by showing that a power perspective is suitable for explaining the observed patterns.

The second study, reported in Chapter 3, expanded on the first dyadic level study by investigating if asymmetries in task dependence can exert an influence at the individual level and influence the affective reactions of individuals. Investigating these relationships is important, because affective reactions have been shown to significantly influence the health and well-being of team members as well as the productivity of the team as a whole. We hypothesized that team members who are more task dependent upon colleagues then vice versa (i.e., whom are power disadvantaged) report more negative affective reactions, such as lower job satisfaction and affective commitment to the team, when they perceived low levels of task interdependence and more positive affective reactions when they perceived high levels of task interdependence. The reasoning behind these expectations was that high levels of task interdependence provide the power disadvantaged team members with resources to negotiate with (cf. Casciaro & Piskorski, 2005) and as a result the cost of actively abusing ones power increases, making it less likely that the powerful will take such actions. Hence, the power disadvantaged are in a much better position to persuade the powerful to share their resources under high levels of task interdependence compared to low levels of task interdependence.

As our first study indicated power differences due to asymmetries in task dependence can significantly influence social exchange processes. Because an individual's affective commitment to the team captures the result of such social exchange processes (cf. Van Knippenberg & Sleebos, 2006), we also hypothesized that affective commitment mediated the relationship between perceived power disadvantage and job satisfaction. Our findings
from a multilevel field study among 262 team members indicated that asymmetries in task dependence can indeed exert a negative influence on an individual's affective reactions. The analyses also showed that the power disadvantaged report more positive affective reactions than their more powerful colleagues under conditions of high perceived task interdependence. The results of the third study extent current knowledge by demonstrating that asymmetries in task dependence are not just a dyadic level phenomenon, but are also important for individual level affective reactions. Additionally, the findings contribute to contemporary knowledge by demonstrating that there are more interaction effects in interdependence theory than the often mentioned interaction between task and outcome interdependence.

In Chapter 4 the third study of this thesis is reported and in this final study we investigated if and how asymmetries in task dependence influence team performance. It seemed logical to expect that asymmetries in task dependence are negatively related to team performance due power abuse, lower interpersonal relations, and less positive affective reactions. However, based on problem solving and learning literature (e.g., King, 1998) there were also reasons to expect a positive effect of asymmetry in task dependence on team performance under certain conditions. We used one of the sub dimensions of outcome interdependence, namely the type of performance feedback group members received (i.e., individual or group) as a moderator, because previous research has shown that this variable could influence whether team members adopt a collective versus an individual mindset (e.g., Hinsz et al., 1997). We hypothesized that asymmetries in task dependence would be positively related to team learning and team performance under conditions of high group or low individual performance feedback, but negative under conditions of high individual or low group performance feedback. Additionally, we expected that team learning behavior would mediate the relationship between power asymmetry and team performance. Analysis of multi-source, multi-method data obtained from 218 individuals in 46 teams provided strong support for these arguments. These findings supported our hypotheses and extended present day knowledge by indicating that power asymmetry is not just an obstacle to team learning and performance but might sometimes be a resource for teams.

The results of the three studies are summarized and discussed in Chapter 5. Viewed together, the findings indicate that asymmetries in task dependence can negatively influence, dyadic, individual, and team processes and outcomes when the power associated with these differences can be used by the powerful or when the power of the powerful leads them to forget the needs of their powerless colleagues. The results also indicate that these negative effects of asymmetry in task dependence occur when the level of
task interdependence between team members is low or when the type of performance feedback focuses the team members on attaining a high individual performance (i.e., high individual or low group performance feedback). Asymmetries in power can be beneficial for intrateam processes when the amount of task interdependence between team members is high or when the amount and type of performance feedback focuses the team members on attaining a high group performance.

One of the strong points of this thesis is that the three studies used multiple measurement methods at multiple levels of analysis (e.g., dyadic, individual, and team level measures), multiple-sources (e.g., self-report, peers, and managers), and used different statistical techniques (e.g., Social Relations Modeling, Multi-level analysis, and OLS regression techniques). Naturally, each study also contains some weaknesses, but the use of different methods, measures, analytical techniques, and levels of analysis causes that many of these weaknesses are alleviated.

The main implications of this thesis are that asymmetries in task dependence can be largely explained by theories regarding power (e.g., Fiske, 1993) and that differences between the powerful and the power disadvantaged are important and should be acknowledged by both practitioners and scholars alike. This implies that future studies and interventions should both theoretically and methodologically allow for differences between relational partners. The measures and methods used in this thesis could be used for such purposes. Another important contribution of this thesis is that the results demonstrated that there are more interaction effects than the interaction between task and outcome interdependence than previously thought. This contributes to our understanding of interdependence theory, because it suggest that it might be beneficial to consider a more complex framework of interdependency theory which recognizes that there are more, and possibly non-linear or higher-order, interactions between the dimensions of interdependence theory.

The main practical implication is that prior to this thesis the recommended intervention was to divide the team into two teams when there were many intra-team asymmetries in task dependence. This thesis extents the options available to practitioners by indicating that increasing the level of task interdependence or increase the outcome interdependence might also be valuable interventions. This thesis also indicates that more research regarding asymmetry in task dependence is needed. The proposed intervention model developed in Chapter 5 aims to provide both practitioners and researchers with valuable guidelines for undertaking such endeavors.