TINKERTOYS® REVISITED:
EXPLORING TRUST-BASED RELATIONSHIPS

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ABSTRACT

Tinkertoy® exercises have been used to teach leadership, group processes, motivation, and even principles of management. In this variation, the basic purpose is to explore the importance of trust in negotiation processes and the development of inter- and intra-dependent trust relationships. A second, but not secondary, purpose is the identification of congruence among mission, resources, capacities, and outcomes.

Interdependency is an accepted term in negotiation literature. It is concerned with being mutually dependent. Dependence-independ-ence relationships deal excessively with control, but intradependency is aimed at reducing control issues. The concept of intradependency deals with issues of shared resources within a system, mutuality of goals and suboptimization. Further discussions after the exercise should explore the differences among competitive, cooperative and collaborative behavior as well as the type of trust relationship(s), which developed.

INSTRUCTIONS

Your instructor will provide your group with a box of Tinkertoys®. Your task is to construct a tower that is tall, stable, and can stand-alone. To complete this task, you will be given a 15-minute planning period in which to discuss, talk, draw and lay out the plans for your tower. Do not begin building your tower. At the end of the planning period, put all of the pieces back into the box and replace the lid.

Following the 15-minute planning period, you will be given a 5-minute period in which your plans must be implemented. There are no mitigating conditions or limitations during the building period. You simply must build a tall, strong tower that can stand on it's own.

The group that builds the tallest, strongest tower (as determined by an independent panel of judges) will win 50 bonus points to be divided among group members. Remember that the tower must stand-alone and neither the box nor desks can be used to increase the height of the tower.

Discussion Questions

1) What types of competitive, cooperative or collaborative behaviors did you observe?
2) Did you trust the members of your team and/or other teams? Why or why not?
3) What types of trust relationship(s) evolved in your group and/or between your group and other groups?
4) What role did competitiveness play in the types of behaviors and/or relationships that developed?
5) What role did trust play in the types of behaviors and/or relationships that developed?

FACILITATOR INSTRUCTIONS

The purpose of the simulation is to explore the role of trust in the competitive, cooperative and possibly collaborative interactions between groups.

The "trick" is to provide unequal boxes of Tinkertoys®. We suggest separating boxes of Tinkertoys® so that some teams have all or most of the stable supporting and connecting pieces, and some teams have most of the long connecting rods and very few base or connecting pieces. A "regular" size box of Tinkertoys® will contain 120-130 pieces, which provides substantial flexibility in construction possibilities.

By putting different resources in each box, the teams are forced to make decisions based on inadequacy of resources. The division of pieces as suggested above will make it very difficult for any one team to meet the defined goal or evaluative standards of tall and strong. Their resources basically allow them to pursue only one of the goals (or a limited move toward both goals). Choices for the teams might include:

1) to pursue the one goal for which they have resources (i.e. tall or strong),
2) to pursue both goals ineffectively,
3) to pursue a trading agreement and each team build stronger, taller towers than they could have with their original resources, or
4) to pursue a merger and build one tall and strong tower in conjunction with some other team.

Option 3 would necessitate the establishment of an interdependent relationship while Option 4 would require an intradependent relation-ship. Both Options 3 and 4 would require negotiation. Under Option 3 only one team will win the reward while with Option 4 the teams would have to split the reward.

Note: While you can separate the pieces in any way that you like, it has been our experience that given the possibility of building any type of tower at all, students get very creative about doing exactly what you said and negotiations seldom occur. Given that the purpose of this exercise is to force interaction between groups, we suggest that the pieces be distributed in such a manner that at least some of the groups will be unable to meet either goal unless they establish a relationship with some other group.

The discussion that you pursue will be based on the interactions that develop and the behaviors that occur. Some of the relationships that might occur and the type of trust that is necessary in each case are discussed below.

Discussion Questions

1) What types of competitive, cooperative or collaborative behaviors did you observe?

Cooperation and collaboration are in the forefront of academic literature on individual, group, and strategic decision making, and the terms are often used interchangeably. In a Special Research Forum published in the *Academy of Management Journal*, Smith, Carroll, and Ashford (1995) argued that inter- and intra-organizational cooperation are fundamental to management success and are of increasing importance in today's complex business world. They note that the success of emerging structural forms, such as the self-managed task team (Manz & Sims, 1993), the horizontal organization (Byrne, 1993), the network organization (Powell, 1990), and the virtual corporation (Davidow & Malone, 1992), rests largely on effective cooperation.

Recent literature suggests that cooperative goal interdependence facilitates the introduction and discussion of multiple viewpoints. An assumption is made that such cooperative behaviors develop team confidence and unity which directly contribute to increased group or organizational performance and constructive outcomes (Alper, 1998; Tjosvold & Deemer, 1980). According to Deutsch (1949, 1973, 1980, and 1990), people engage in cooperative, competitive, or independent behavior. This behavior affects outcomes significantly. When behavior is *cooperative*, people believe goals are positively related. People understand that their goal attainment helps others reach their goals; as one succeeds, others succeed. When behavior is *competitive*, goals are inversely related. Individuals feel that their goal attainment precludes or makes the goal attainment of others less likely. If one succeeds, others must fail. When behavior of one party is *independent* of another, people view their goals as unrelated. Their goal attainment means neither failure nor success for the other party.

The situation that Deutsch failed to discuss was when people view their goals as not only posi-

tively related, but unachievable without the efforts of others. Such linked goals facilitate collaborative behavior that ventures beyond the definition of cooperation. In this case, not only will a party's goal attainment help another achieve its goals (cooperation), they will not be able to achieve their goals at all without the efforts of the other group (collaboration). The parties develop a mutual objective based on a shared value so that goals are not only positively correlated as in cooperation, but are actually linked in a synergistic manner. Rather than a lateralization of power as in cooperation (Hall, 1993) both parties have mutual power. Recently, attempts have been made to identify such a distinction between cooperation and collaboration.

2) Did you trust the members of your team and/or other teams? Why or why not?

Two views of trust can be found in the management literature: 1) a business risk view based on confidence in the predictability of one's expectations (Luhmann, 1979; Zucker, 1986) and 2) a view based on confidence in another's goodwill (Ring & Van de Ven, 1992, 1994). In the risk-based view of trust, parties utilize formal contractual means such as guarantees, laws, and organizational hierarchy in order to protect against uncertainty. In the goodwill-based view of trust, parties rely on the moral integrity or goodwill of others which evolves through interpersonal interactions that lead to social-psychological bonds of mutual norms and friendships (Homans, 1962). These norms and friendships are the mechanisms used to deal with uncertainty.

In a recent Special Topic Forum on trust in and between organizations which was published in the *Academy of Management Review,* the editors, Rousseau, Sitkin, Burt, and Camerer (1998), offer the following definition of trust:

> "Trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviors of another (p. 395)."

They proposed that this definition fit with definitions offered across levels of analysis as well as across disciplines. They also proposed four types of trust*: deterrence-based, calculus-based, relational, and institutional.*

Deterrence-based trust exists when sanctions foster or substitute for trust, particularly in inter-firm situations (Hagen & Cloe, 1998). One party believes that another will be trustworthy because the costly sanctions in place for breach of trust exceed any potential benefits from opportunistic behavior (Ring & Van de Ven, 1992, 1994).

Calculus-based trust is based on rational choice and is often based on economic exchange. In this case, parties trust because they perceive that the other intends to perform an action that is beneficial (Rousseau, Kitkin, Burt, & Camerer, 1998). They trust because they can verify the trustworthiness of the other party.

Relational trust occurs following repeated interactions over time between trustor and trustee. Reliability and dependability of previous interactions with the trustor give rise to positive expectations about the trustee's intentions (Rousseau, Kitkin, Burt, & Camerer, 1998).

Finally, ***institutional trust*** is based on standardized or institutionalized expectations for behavior, such as human resource practices within firms or legal protections from the federal government. These trust relationships are influenced by the definition of a situation that the two parties involved develop.

3) What types of trust relationship(s) evolved in your group and/or between your group and other groups?

Independence Trust Relationship. In this situation, there is little or no trust relationship between parties. In such a case their interests are unrelated so one party's goal achievement does not aid or prevent the other party from achieving their goal (Tjosvold, Andrews & Struthers, 1991). However, in many cases, operation in the competitive paradigm reflects a desire to achieve

a position of superior performance and to generate competitive advantage over the other party. This type of trust relationship presumes a zero-sum orientation toward the other party. Communication is often non-existent or at least non-disclosing. Any actions taken are motivated by a desire for personal gain.

Dependence Trust Relationships. When goals are congruent but the team mental model is one of competitive advantage, parties must vie for available resources. This causes an adversarial relationship that is based on resource dependence. While the parties will cooperate, they do so reluctantly. Although goal congruence is high and both parties are seeking to attain the same goal, there is a great deal of uncertainty concerning what the other party will do and what scarce resources the other party may attempt to control. Because goals are congruent, when it is necessary for the parties to cooperate, they do so with strong reservations. Parties in this setting are strongly focussed on self interests. Communication tends to be selective with one party sharing only the information that is necessary to gain needed resources. Interaction also exists in an effort to gain resources and reach shared goals.

Interdependence Trust Relationships. Interdependence trust relationships exist when there is very little goal congruence and the team mental model is one of collaboration. Parties view each other as equal and employ a "tit for tat" (Smith, Carroll, & Ashford, 1995) strategy in which they share to accomplish their own distinct goals. Trust is calculative and based on rational choice and economic exchange. Goals are positively related so that as one moves toward their goal, the other does as well (Alper, 1998). There is a one-to-one correspondence relationship in which parties are distinct but equal, as manifested in balanced reciprocity. Communication is selective and only information that is necessary for purposes of co-operation is disclosed.

Intradependence Trust Relationships. Intradependent relationships require not only positively linked goals, but a common goal or vision. Mutual

trust is needed and leads to discussions of shared perspectives and interests. The parties do not view themselves as equal, but rather connected. A team mental model of collaboration is integral to the creation of intradependency. Those exhibiting intradependent behaviors seek mutual benefits by pooling complimentary resources, skills, and capabilities (Lado, Boyd, & Hanlon, 1997). Instead of seeking advantages over stakeholders and/or competitors, these individuals seek to co-produce and share value by fostering and maintaining reciprocal interdependencies (Thompson, 1967). Appealing to the collective interest enables the parties to focus on long-run goals and to identify and exploit opportunities for positive-sum gains (Aram, 1989). There is a sense of unity and collective identity and communi-cation is open.

4) **What role did competitiveness play in the types of behaviors and/or relationship, which developed?**

We have found that this question allows us to discuss how competitiveness often inhibits cooperation and collaboration. It is important to distinquish between competitiveness within the group and between groups. It also leads to a discussion of trust (Question 5) and how to overcome competitiveness during mergers and joint ventures.

5) **What role did trust play in the types of behaviors and/or relationship that developed?**

In this case, the necessity of trust in cooper-ative and collaborative relationships should be stressed. With luck, the group(s) that developed mergers and/or joint ventures will be the groups with the tallest and strongest towers.

REFERENCES

Available from the authors.