

The Impact of Social Interdependence Theory in Supply Chain Management

Author: Mathijs Jongman
University of Twente
P.O. Box 217, 7500AE Enschede
The Netherlands

Social Interdependence Theory is an interesting theory that might be very useful for relationship management in Supply Chain Management (SCM). A lot of research still has to be done to make Social Interdependence Theory applicable to SCM and this paper tries to pinpoint in what areas that research has to be done.

This literature review will start with the origin of Social Interdependence Theory, talk about the main variables, assumptions and statements. Review the soundness of the theory with the paper developed by Vos and Schiele (2014). With the information gained about Social Interdependence theory in these parts of the paper the potential applicability and areas of further research regarding to the four major decision points of supply chain management will be reviewed. The four major decision points are: make or buy decision, sourcing strategies, supplier selection and contracting.

**Supervisors: Prof. Dr. habil. Holger Schiele
Professor of Technology Management – Innovation of Operations**

**Frederik Vos
PhD Candidate, Department of Business Administration**

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1. Introduction

The problem with research is that there are a multitude of theories. The multitude of theories also make it difficult to determine which one is a suitable theory and even more difficult to evaluate its quality (Vos, 2014, p. 2). This is especially true for supply chain management. There is no homogenous use of the term supply management. Definitions used in supply chain management research are widely different and many researchers haven't even bothered to use a definition in their research. Even the scope of supply chain management has disintegrated from ten core constructs to twenty-two areas of research however only two of these twelve new constructs can be considered to be part of the core of supply chain management. (Wolf, 2008, pp. 99, 155 - 156)

The definition of SCM this paper will use is "SCM is the integration of key business processes from end user through original suppliers that provides products, services and information that add value for customers and other stakeholders."

Even though lately the research into SCM has been fragmented and no clear definition has yet to be resolved on the field of SCM has come far since the time that it was seen as only a supportive administrative function (Cousins, Lamming, Lawson, & Squire, 2008, p. 11). SCM is no longer a reactive activity but has become a proactive activity. Interacting with a wide network of partners, upstream and downstream. Trying to cooperatively enhance competitive advantage (Zsidisin & Ritchie, 2008, p. 3). The main issues are now according to (Zsidisin & Ritchie, 2008, p. 16) "multiple sourcing, sharing the consequences of risks across the supply network, sharing information, building relationships and establishing trust".

Supply chain management (SCM) is growing in importance because of fierce competition and continued globalization. The environment in which organizations operate is continuously changing demands (Chandra & Grabis, 2016, p. 3). This change is driven by forces either economic, political, social or technological developments. Companies need to adapt quickly to changes in the environment or consumer demands (Chandra & Grabis, 2016, p. 3). In today's world SCM needs a more proactive strategy. Engaging with other organizations in the supply chain trying to achieve a sustainable competitive advantage and profitability through leaner, more agile, efficient, resilient, comprehensive and customer-focused strategies (Zsidisin & Ritchie, 2008, p. 2).

This paper will try to establish whether Social Interdependence Theory is indeed sound theory and whether it can contribute to SCM. Especially in tackling the main issues facing SCM today. Subdivided in four headings namely the major decision points of SCM: make or buy decision, sourcing strategies, supplier selection and contracting.

Therefore the following research question was designed and is the guiding idea behind this paper:

In how far can the social interdependence theory be practically applied to supply chain management?

To answer this question clearly the review is structured into six main sections. First section is the origin of Social Interdependence Theory. The second section is the assumptions underlying Social Interdependence Theory. The third section is the main variables, hypotheses and presentation of the core model of Social Interdependence

Theory. The fourth section is the Theory Review. The fifth section is the main statements of social Interdependence theory. With this information the paper will then apply Social Interdependence Theory to the four major decision points of SCM. Followed by a discussion.

2.1 Historical Roots of Social Interdependence Theory

The social interdependence theory was first developed by Morton Deutsch in 1949 as an attempt to create a theory of the effect of co-operation and competition upon small group functioning (M. Deutsch, 1949b, p. 129). At that time the theory did not yet bear its current name Social Interdependence Theory but was rather named "The theory of Co-operation and Competition" (M. Deutsch, 1949b).

When Morton Deutsch wrote his initial papers (M. Deutsch, 1949a, 1949b) social Darwinism dominated the scientific rationale about cooperation and competition. Social Darwinism proscribes that the laws governing natural selection also govern that of individuals, *groups*, and peoples (Brinkworth & Weinert, 2012, p. 72). This theory said that competition was necessary to achieve high degrees of productivity and achievement (David W. Johnson & Johnson, 2005, p. 294). Social Interdependence theory provided a new theory that opposed the theory of Social Darwinism.

The social interdependence theory also counters the idea from that time that people are unable to work together effectively because they are only motivated by self-interest. If this were true no society would be possible. People need to be able to work and be a part of a group. Being able to count on others and being of significance to others is fundamental to human life (Asch, 1952).

When Morton Deutsch wrote "The theory of co-operation and competition" there were already previous theories about the effect of cooperation and competition but none of them were concrete. Hardly any experimental or empirical studies had been done at all. Therefore Deutsch created the theory of Co-operation and Competition and because he believed that all theory should be tested empirically immediately followed it with an experimental study (M. Deutsch, 1949a).

First he had to make assumptions, define the variables and develop the hypothesis in (M. Deutsch, 1949b). An important variable is the relationship between members of a group. Morton Deutsch based his view of the relationship between members of a group on one of the founders of gestalt psychology theory Kurt Koffka (Koffka, 1935, p. 25; 1999, p. 22).

The Gestalt theory is an important influence on Social Interdependence Theory because it researches the whole of perception and behavior. This school of thought thinks that people are primarily busy with organizing their worldviews and finding meaning in events by seeing them as integrated wholes than a summation of their parts (M. Deutsch, 2011, p. 44). Similar to Kurt Koffka's famous phrase "the whole is other than the summation of its parts." (Heider, 1977, p. 123). However up to the moment of writing this paper the definitions underwriting this school of psychology are still ill defined (Wagemans et al., 2012, p. 1218).

Morton Deutsch used from this school of thoughts (Koffka, 1935) Koffka proposition that the interdependence of group members could differ between members of the group.

Koffka again based this on Lewin's Field theory (Lewin, 1935). Lewin shifted the focus in physics from mechanistic to the field influencing gestalt psychologists to do the same and study the whole (gestalt). Kurt Lewin proposed that when one group member state is changed it would also change the state

of any other group member. This he called the dynamic whole. (M. Deutsch, 2011, p. 44). This makes members interdependent through common goals.

Morton Deutsch his theory of cooperation and competition was furthermore based on the previous research of (Barnard, 1938; Lewis, 1944; Maller, 1929; May, 1937; Mead, 1937) organizing and subsuming all previous works and bringing a new conceptual clarity and insight to the field.

The important parts of the beforementioned papers are:

(Maller, 1929) First defined cooperation as a goal that is shared equally among all participants and competition as an attempt to best others in order to be the only one to have reached their goal (M. Deutsch, 1949b, p. 130). This is the basis for the construct goal interdependence in Morton Deutsch his theory of Social Interdependence.

(Mead, 1937) adds the distinction between cooperation and helpfulness and, rivalry and competition.. Supposing that cooperation is enlightened self-interest and achieving the goal is what holds the group together. Whereas helpfulness is done only because of the shared relationship. For rivalry the willingness to compete does not exist because of a shared goal but because of the relationship with the other person. Whereas in competition participants compete to reach one goal (M. Deutsch, 1949b, p. 130). These distinctions form the basis of the distinctions between certain forms of behavior that are conducive to cooperation, competition or are unrelated.

(Barnard, 1938) Is the first to discuss factors arising from cooperation like effectiveness and efficiency (M. Deutsch, 1949b, p. 130). Proving that cooperation could lead to effectiveness and efficiency is important for its real world application. In (David W. Johnson & Johnson, 2009) the main driver behind the general acceptance of its theory of cooperative learning is the fact that it is more efficient and effective than competitive forms of learning.

(Lewis, 1944) poses that for cooperation to exist there has to be a decrease in ego-demands in order for the shared goal and the need of other team members to be fulfilled. Contrary to competition where ego demands are heightened (M. Deutsch, 1949b, p. 130). This forms the basis for the assumption that in order for a group to cooperate effectively one must value the team goals more than their own personal goal's (M. Deutsch, 1949b, p. 131).

Ineffective cooperation can have big consequences in group based efforts. Most common causes for ineffective cooperation in group efforts is social loafing, a lack of help and assistance, negative interactions, lack of social skills and no reflection (David W. Johnson & Johnson, 1989, p. 29).

Following the publication of Morton Deutsch initial papers (M. Deutsch, 1949a, 1949b) thousands of articles were written using his Social Interdependence theory and first combined into a comprehensive literature study by (David W. Johnson & Johnson, 1989). Johnson and Johnson did this again in 2005 and in 2011.

The theory of social interdependence has been successfully applied in education (cooperative learning) (Cohen, 1994a; D.W. Johnson, 1970; D. W. Johnson, & Johnson R., 1999a; David W. Johnson & Johnson, 2009; Sharan, 1976; Slavin, 1989), conflict management (M. Deutsch, 1973; 2011, p. 95; 2015, p. 71) and Business (Tjosvold, 1986, 1989b).

The Social Interdependence theory has since it's conception seen most activity and research towards finding out all the variables connected to it and their effects. The most research has been done regarding cooperation instead of competition or individualistic effort (David W. Johnson & Johnson, 2005, p. 340).

2.2 Underlying Assumptions of Social Interdependence Theory

Social Interdependence Theory is built around a number of assumptions. Mainly the group structure assumption, the rationality assumption, pure form assumption, group size assumption, the internal motivation assumption, ahistoric relations assumption and the equal power assumption.

First, *the group structure assumption*. Social interdependence theory is built on the assumption that the structure of the group determines the interactions within a group and by doing so affects the outcome (M. Deutsch, 2011, p. 48; David W. Johnson & Johnson, 1989, p. 167; 2005, p. 287).

Second, *the rationality assumption*: The task had to be simple enough and the participants intelligent enough that there were no perception differences between the participants (M. Deutsch, 1949a, p. 209; 1949b, p. 136). (David W. Johnson & Johnson, 1989).

Third, *the pure form assumption*. Cooperation and competition are only described in it's pure form. The original theory therefore only works with complete competitive or complete cooperative situations (M. Deutsch, 1949b, p. 132).

Fourth, *the group size assumption*. The group size was assumed to be small. In real life group sizes are different from group to group. The theory can have implications for greater group sizes as well as small groups however most research was conducted in small groups (M. Deutsch, 1949b, p. 150; David W. Johnson & Johnson, 2005, p. 295).

Fifth, *the internal motivation assumption*. The assumption is made that all participants act on self-interest (David W. Johnson & Johnson, 2005, p. 296). (Asch, 1952) posits that there is a difference between self-interest and selfishness. Self-interest can include one own's goals and that of others while selfishness solely focuses on self-benefit.

Sixth, *the ahistoric relations assumption*. The theory is developed ahistoric (David W. Johnson & Johnson, 2005, p. 296). All participants have no prior history together. In (Wong, Tjosvold, & Zhang, 2005) research is done into existing Supply chain relationships and evidence suggesting that the theory can be applied to these relationships even though the relationships are not ahistoric is found.

Seventh, *the equal power assumption*. The theory assumes that all participants have equal power or at least the perception of equal power. The fact that all participants will almost never have perfectly equal power in real life does not matter for social interdependence. There only has to be the perception of interdependence. As stated by Morton Deutsch his crude law of social relations: "the characteristic processes and effects elicited by a given type of social interdependence also tend to elicit that type of social relationship, and a typical effect tends to induce the other typical effects" (M. Deutsch, 1973, p. 20). Cooperation therefore induces and is induced by an orientation towards enhancing mutual power rather than a focus on power differences (M. Deutsch, 2011, p. 55).

In short the group structure assumption supposes that group structure affects outcomes. The rationality assumption assumes intelligent participants and simple tasks so there won't be any perception differences. The pure form assumption assumes that there is only pure cooperative, competitive or individual form. The group size assumption assumes small group sizes. The internal motivation assumption supposed self-interest as a motivation of participants. The ahistoric relations assumption assumes participants have no prior relations. The equal power assumption assumes equal power among participants.

2.3 Social Interdependence Theory

2.3.1 Core Model

Morton Deutsch developed two types of social interdependence and a type that characterizes itself by the absence of social interdependence: Positive interdependence (co-operative) and Negative interdependence (competitive). Both these types of social interdependence are characterized by either positive or negative goal interdependence. When there is an absence of goal interdependence there is also an absence of social interdependence. This form is called: no-interdependence (individualistic efforts) (M. Deutsch, 1949b, p. 132; David W. Johnson & Johnson, 1989, p. 6; 2005, p. 289).

The dependent variables that have been researched after the development of Social Interdependence Theory by Morton Deutsch are numerous. According to (David W. Johnson & Johnson, 2005, p. 302) "individual achievement and retention, group and organizational productivity, higher-level reasoning, moral reasoning, achievement motivation, intrinsic motivation, transfer of training and learning, time on task, job satisfaction, interpersonal attraction, social support, interpersonal affection and love, attitudes toward diversity, prejudice, self-esteem, personal causation and locus of control, attributions concerning success and failure, psychological health, and social competencies). These dependent variables can be divided into three broad categories. Effort to achieve, positive interpersonal relationships and psychological health (David W. Johnson & Johnson, 2005, p. 304).

2.3.2 Cooperation and Competition

Positive interdependence is when the perception is that the desired outcome can only be achieved if all members (of the supply chain) achieve their goals. (M. Deutsch, 1949b, p. 131; David W. Johnson & Johnson, 1989, pp. 2, 5, 6; 2005, p. 288).

Negative interdependence is when the perception is that if one of the members (of the supply chain) reaches its goal the others can no longer, fully, attain their goal. (M. Deutsch, 1949b, p. 131; David W. Johnson & Johnson, 1989, pp. 5,6; 2005, p. 288).

Positive interdependence results in promotion of each other's success which leads to higher productivity and achievement, more positive relationships among individuals and greater psychological health and wellbeing (David W. Johnson & Johnson, 1989, pp. 5-6).

According to (David W. Johnson & Johnson, 1989, p. 6) "Competition exists when negative interdependence is structured, which results in individuals obstructing each other's success which, in turn, generally leads to lower productivity and achievement, more negative relationships among individuals, and lower psychological health and well-being."

No-Interdependence leads to little interaction between individuals and to lower productivity and achievement, more negative relationships among individuals, and lower psychological health and well-being (David W. Johnson & Johnson, 1989, p. 6). Only Positive and Negative social interdependence are relevant to the theory of Social Interdependence because no-interdependence does not lead to cooperative or competitive interactions.

2.3.3 Actions

The results of positive interdependence or negative interdependence are achieved by Actions and these actions are determined by the interaction patterns and psychological processes.

These actions can be either effective or bungling. Effective actions increase the person's chance of reaching his/her goal. While bungling actions lessen the chance of the person reaching his/her goal. (M. Deutsch, 1949b, p. 134; David W. Johnson & Johnson, 2005, p. 289).

When there is negative interdependence participants will be helped by their own effective actions, hindered by other participants effective actions, helped by other participants bungling actions and hindered by their own bungling actions. This is because only one person can fully achieve their goal and any successful action of one person trying to reach this goal will decrease the chances of the others trying to reach this goal' (M. Deutsch, 1949b, p. 133).

When there is positive interdependence participants will be helped by their own effective actions and their team members effective actions, and hindered by their own and their members bungling actions. The team will only reach the goal when all work has been done therefore any action that delays this (bungling) will delay the whole team and any effective action from any of the team members will move them all closer to the goal (M. Deutsch, 1949b, p. 133).

These two actions will therefore affect how people will interact with each other and the psychological processes involved in these interactions (David W. Johnson & Johnson, 2005, p. 292).

The three important psychological processes are substitutability, cathexis and inducibility and how individuals interact and the interaction patterns (David W. Johnson & Johnson, 2005, p. 292).

2.3.4 Psychological processes

Substitutability is when one person's actions can substitute for another person's actions. (M. Deutsch, 1949a, p. 230; 1949b, p. 138; David W. Johnson & Johnson, 2005, p. 290). Effective actions can substitute for one own's actions in a cooperative situation and bungling actions will take extra effort to make up for.

In a competitive setting effective actions increases the amount of effort and skill needed to win while bungling actions do substitute for one own's effective actions.

Cathexis is when a person invests energy in objects outside of himself. Objects like work, friends or family. (M. Deutsch, 1949a, p. 230; 1949b, p. 138; David W. Johnson & Johnson, 2005, p. 290).

Assuming that the response to events that effect a person's well-being positively is going to be positive and that the response to events that effect a person negatively is going to be negative. Deutsch, suggests that because of this effective actions in cooperation are cathected positively and bungling actions are cathected negatively (M. Deutsch, 1949a, p. 230; 1949b, p. 138; David W. Johnson & Johnson, 2005, p. 291).

Inducibility is being open to influences of others and being able to influence others. People are easily induced in cooperative settings by collaborators either to prevent them from taking actions that would hinder goal attainment or induce them to take actions that would promote goal attainment. People resist inducement when in a competitive setting. They are willing to induce others to take bungling actions, resist inducement for their help and take actions to prevent or obstruct other people's effective actions (M. Deutsch, 1949a, p. 230; 1949b, p. 138; David W. Johnson & Johnson, 2005, p. 292).

2.3.5 Interaction Patterns

The basic premise of the social interdependence theory is that the type of interdependence among *goals* determines the

kind of actions people in a group will take and in turn affect the outcome (David W. Johnson & Johnson, 2005, p. 292).

A goal is a desired future result. How the goal is structured (competitively, cooperatively or individualistically) determines the type of interdependence among individuals. The type of interdependence among individuals determines how people must interact to achieve their goals (David W. Johnson & Johnson, 2005, p. 292).

Interaction is defined in social interdependence as “individuals whose simultaneous or sequential actions that affect the immediate and future outcomes of the other individuals involved in the situation.” (David W. Johnson & Johnson, 2005, p. 292). Interaction can be direct or indirect, promotive or oppositional. (M. Deutsch, 1949a, p. 213; 1949b, p. 133) suggested that positive goal interdependence results in promotive interaction and negative goal interdependence results in oppositional interaction.

Promotive interaction is when individuals take action that increase the likelihood of each other’s success. The relevant variables that constitute promotive interaction are: Mutual help and assistance, exchange of needed resources, effective communication, mutual influence, trust, and constructive management of conflict (M. Deutsch, 1949b, p. 131; David W. Johnson & Johnson, 2005, p. 294).

Oppositional interaction is when individuals take action that decreases the likelihood of others successfully achieving the shared goal. In a competitive situation only one person can win and therefore people focus on their own productivity without helping others because doing so would be harmful to oneself. In a competitive situation people also take actions that would hinder others from producing more than oneself. The relevant variables are obstruction of each other’s goal achievement efforts, tactics of threat and coercion, ineffective and misleading communication, distrust, and striving to win in conflicts (M. Deutsch, 1949b, p. 131; David W. Johnson & Johnson, 2005, p. 294).

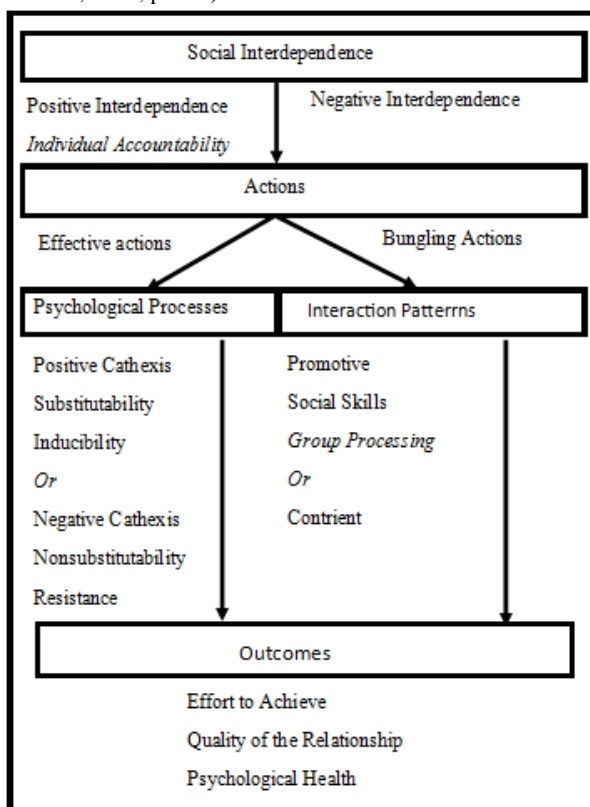


Figure 1: Overview of Social Interdependence Theory

2.3.6 Summary of Social Interdependence Theory

As Figure 1 shows the type of social interdependence or no-interdependence (individual accountability) determines which kind of actions are labeled as bungling or effective. These actions linked to their type of social interdependence or no-interdependence proscribe certain forms of interaction and psychological processes within small groups. The actions, interactions and psychological processes determine the outcomes of small group relationships. The level of effort to achieve, quality of the relationships and psychological health of the group members.

2.4 Social Interdependence Theory a Solid Theoretical Model

Vos and Schiele (2014) have proposed a theoretic framework which would enable researchers to analyze theories. Using this framework researchers can derive conclusions about the soundness of the theory they are analyzing and whether it even deserves to be called a theory (Vos, 2014, p. 4). The paper states that there are two parts to testing a theory. One is based on conceptual theory development (sound theory) and the second on empirical development (applicable in practice). The theory development part can be subdivided in five elements (Units, Laws, Boundaries, System States and Explanations) and the empirical part can be subdivided in four elements (Propositions, Hypothesis, Empirical Indicators and Empirical Research) (Vos, 2014, pp. 5, 6). Then the internal and external virtues of the theory should be considered to determine the quality and value of the theory (Vos, 2014, p. 7).

2.4.1 Conceptual Theory Development of Social Interdependence Theory

The *units* of importance in Social Interdependence theory are the groups, their group members and most importantly the interactions with each other that arise caused by a competitive or cooperative social situation (M. Deutsch, 1949a, p. 199; 1949b, p. 129). In essence Social Interdependence Theory is nothing more than a prediction of how people will interact when in groups with different goal interdependencies. Causing them to either behave cooperatively or competitively with all the corresponding behavioral patterns mentioned in part 2.3 of this paper.

The *laws* of importance are that the perception of positive goal interdependence will lead to cooperation and the perception of negative goal interdependence will lead to competition which both will lead to different levels of communication, trust, power sharing, productivity, psychological health, and self-esteem within groups (David W. Johnson & Johnson, 2005, p. 340).

The *boundaries* of the Social Interdependence Theory are that it only implies within groups. When there is a form of goal interdependency more specifically goal outcome interdependency. Only means interdependency is not enough to create a group based on cooperation (David W. Johnson & Johnson, 1989, p. 22).

There seems to be no boundaries to space and time in regards to when and where this theory is applicable because it regards all human interaction within groups when there is a form of goal (outcome) interdependency (M. Deutsch, 1949b, p. 149).

The *system states* are unclear for the Social Interdependence Theory. This is because the interactions determine the perception of the type of goal interdependence and the kind of goal interdependence can affect the kind of interactions that take place (M. Deutsch, 2011, p. 30).

The *explanations* for how the central psychological processes of the theory affect communication, trust, power sharing, productivity and achievement, psychological health and self-esteem are insufficiently clear (David W. Johnson & Johnson, 2005, p. 340). The rest of the proposed mechanisms and relationships have been made sufficiently clear and tested in at least 754 studies (David W. Johnson & Johnson, 2005, p. 298).

2.4.2 Empirical Development of Social Interdependence Theory

The most important *propositions* are already defined in part 2.3.5 in this paper. The *hypothesis* can be found in Morton Deutsch his original paper (M. Deutsch, 1949b).

However the most important hypotheses envelop the most important *empirical indicators*. The constructs of negative and positive goal interdependence. The outcome that positive goal interdependence has on the dependent variables in relation to the three most important psychological processes (substitutability, cathexis and inducibility) which leads to the conclusion that cooperation will create more open and frequent communication, facilitate relationships built on trust, more willingness to share power and, increase psychological health and self-esteem (David W. Johnson & Johnson, 1989, p. 5).

Empirical testing started from the moment of Social Interdependence theories conception. Morton Deutsch launched its initial paper (M. Deutsch, 1949b) simultaneously with an empirical research testing all its hypothesis (M. Deutsch, 1949a). Since then there have been 754 empirical studies done pertaining Social Interdependence Theory and in the comprehensive reviews that have been of Social Interdependence Theory these studies have been categorized by their most important characteristics (year, assignment, publication, testing condition, number of sessions, group conditions) (David W. Johnson & Johnson, 1989, p. 75; 2005, p. 300).

2.5 The Foundation of Interdependence Theory

2.5.1 Three Important Implications of the Basic Premise

Social Interdependence Theory's main purpose is the effects of goal interdependence on group functioning and how this affects interactions within a group (M. Deutsch, 1949b, p. 131). This makes the Social Interdependence theory a classic example of interaction theory (David W. Johnson & Johnson, 2005, p. 1). The basic premise is that how the goal is shaped determines how individuals within groups will interact. In turn these interactions shape the outcomes (David W. Johnson & Johnson, 1989, p. 6).

The first implication of the basic premise is that, cooperation and competition only exist when people try to achieve a goal. When they take promotive or oppositional actions (David W. Johnson & Johnson, 2005, p. 293).

The second implication is that, the appropriate action to take depends on the perception of what kind of goal

interdependence is taking place (David W. Johnson & Johnson, 2005, p. 293).

The third implication is that, cause and effect of positive or negative interdependence can go both ways. As stated in Deutsch's crude law of social relations (M. s. p. Deutsch, 1985, p. 293; David W. Johnson & Johnson, 2005). The perception of the situation can determine the kind of interdependence is assumed and the type interdependence can influence individuals perception (M. Deutsch, 2011, p. 30).

Therefore according to (David W. Johnson & Johnson, 2005, p. 293) "Cooperation tends to induce, and be induced by, mutual help and assistance, exchange of needed resources, influence, and trust. Competition tends to induce, and be induced by, obstruction of each other's success, tactics of coercion

and threat, enhancement of power differences, deceptive communication and striving to win conflicts. Individualistic efforts tend to induce, and be induced by, an avoidance of other people. Each process tends to be self-confirming. Any part of the social interdependence process elicits the other parts of the process. Because each component can induce the others, they are likely to be found together."

2.5.2 Cooperation or Competition?

Knowing this it becomes important to understand which goal structure is suitable for which kind of situation (David W. Johnson & Johnson, 1989, p. 6).

The conclusion from Social Darwinism is that competition always has more advantages than cooperation (Brinkworth & Weinert, 2012, p. 72).

Social Interdependence theory cannot offer a clear conclusion. Although Social Interdependence Theory can point out that positive goal interdependence has in most cases more benefits than negative goal interdependence. Finding and describing situations wherein negative goal interdependence has outperformed positive goal interdependence has not been attempted. One situation was merely found by happenstance in the meta-analysis of (David W. Johnson & Johnson, 2005) this is because there has not been done enough research into this phenomena (David W. Johnson & Johnson, 1989, p. 52).

Even though cooperation outperforms competition in almost every study this does not mean that cooperation has no downsides. The first flaw in cooperation is that to go from cooperation to competition is easily achieved but to go from competition to cooperation takes substantially more effort (David W. Johnson & Johnson, 2005, p. 297). Cooperation has the intrinsic characteristic to break down into competition. Cooperation is diminished by every competitive action. It needs to active and sustained effort to prevent it from breaking down into competition. The second flaw is that the psychological processes that are necessary for cooperation to function can also be the cause for it to stop existing. The third flaw is that cooperation can be far more costly than competition (David W. Johnson & Johnson, 2005, p. 297).

2.6 Empirical Findings of Social Interdependence Theory

2.6.1 Method: Literature Review Approach

This theory framework is built on the existing body of knowledge about the theory of cooperation and competition later restyled as Social Interdependence theory. In order to find all the relevant literature I searched the University

Twente Library for online articles and books. Some of these books were ordered through the University from other Dutch Universities who did have a copy of the relevant books. Online resources like Google Scholar and FindUT were used.

“Theory of cooperation and competition” gets 60.600 hits in the databases and 2.070.000 hits on google scholar. “Social Interdependence theory” gets 20.983 hits in the databases and 403.000 hits on google scholar. In order to limit the number of results and find the specific articles and books that are useful for this study there were a number of search items added to the filter. A language filter selecting only publications written in English. A key word filter to filter out publications that link Social Interdependence Theory to supply chain management. The key words used were: social interdependence theory, goal interdependence, theory cooperation competition, supply chain management goal interdependence, supply chain management social interdependence theory.

The paper started with research into the history and current knowledge of the theory of cooperation and competition aka Social Interdependence theory. As the theory is a sociological one the filter sociology was ticked limiting the results when searching for comprehensive reviews. Peer reviewed was ticked to ensure quality and continuity. The results were then analyzed to find appropriate publications. From these results I selected first the comprehensive reviews of social interdependence theory. From these comprehensive reviews I selected the best and latest reviews based on the quality of the paper, which publisher had published these reviews, how many citations and views the reviews had. These were (David W. Johnson & Johnson, 1989, 2005) the oldest had thousands of views and citations the youngest hundreds of citations but thousands of views. For the paper (M. Deutsch, 2011) was also selected which is not a complete comprehensive review and is more focused on applying social interdependence theory to conflict resolution however it does contain the last thoughts of the author of the original theory on his own theory and puts the progression of the theory into a different perspective than the beforementioned comprehensive reviews.

After finding and reading these three comprehensive reviews of the current literature and research there were certain articles that were considered keystones for this theory (M. Deutsch, 1949a, 1949b; Koffka, 1935; Lewin, 1935). For Koffka it was the contribution to the fact that the gestalt became the unit of analysis and for Kurt Lewin it was according to (David W. Johnson & Johnson, 2005) “that the essence of a group is the interdependence among members, which results in the group being a dynamic whole so that a change in the state of any member or subgroup changes the state of any other member or subgroup. Group members are made interdependent through common goals.” Upon which M. Deutsch build his theory of cooperation and competition (M. Deutsch, 1949a, 1949b). Also two successful operationalization’s of this theory were mentioned. Cooperative learning (Johnson 2009) and Conflict management (M. Deutsch, 1973).

2.6.2 General Empirical Findings of Social Interdependence Theory

Social Interdependence theory has been empirically test extensively in more than 752 studies (David W. Johnson & Johnson, 2005). They found in their meta-analysis of all empirical studies regarding Social Interdependence Theory

some indication that competition can in some cases produce greater productivity than cooperation. An indication that some tasks are better suited for competition than cooperation (David W. Johnson & Johnson, 1989, p. 40). Only tasks that are simple, mechanical, previously mastered and unitary, and require no help from others are done better competitively than cooperatively or individualistically according to (David W. Johnson & Johnson, 2005, p. 332). However even tasks that are more complicated like creation of ideas like brainstorming seem to go better individually than cooperatively or with a mix of parts that are cooperative and individualistic (David W. Johnson & Johnson, 2005, p. 307).

The empirical findings however limit themselves mostly to discovering which variables are linked to cooperation and what the effects of these variables are.

Like the predisposition towards either competition or cooperation. Even though cooperation and competition are opposites in a single situation the internal predisposition to either can be both positive or negative (David W. Johnson & Norem-Hebeisen, 1979, p. 259).

An area that has seen significant real life application is education. (D.W. Johnson, 1970; David W. Johnson & Johnson, 2009) show that cooperative learning far outperforms competitive or individual instructional practices. Competitive learning practices were more widely used in 1940s-1970s and when Social Darwinism was criticized instructional practices switches to *rugged individualism*. This view says that if you isolate students and let them learn by themselves they become stronger individuals (David W. Johnson & Johnson, 2009, p. 365). Social Interdependence Theory used by (D.W. Johnson, 1970) pointed out “the essential role of peer interaction and relationships in socialization and learning according to” (David W. Johnson & Johnson, 2009, p. 365).

In Conflict Resolution Social Interdependence offers a more intellectual framework for insight into conflicts and how to resolve them than opposed to cooperative learning who offers actual advice on how to implement their ideas into the classroom (M. Deutsch, 2011, p. 57; David W. Johnson & Johnson, 2009, p. 373).

This framework of conflict resolution defines a constructive process as one wherein effective cooperative problem-solving process in which conflict is the conflict to be resolved cooperatively and defines a destructive process as one where a competitive conflict resolution proves takes place where one or both parties tries to win instead of resolve the conflict. The theory of Social Interdependence indicates that the typical effects of cooperation as described in this paper foster a constructive process of conflict resolution (M. Deutsch, 2011, p. 57).

(Tjosvold, 1989b, p. 474) highlights the effects of Social Interdependence Theory for team based organizations. These are organizations that consists of small teams (2-12 people in a team) that together form interdependent units. In many cases teams don’t perform optimally and Tjosvold theory has some guidelines based on Social Interdependence theory on how to improve team performance.

2.6.3 Empirical Findings Related to Supply Chain Management

There is little research that relates Social Interdependence Theory to SCM. There are some research papers that use the

construct goal interdependence (Wong et al., 2005; Yang, Wang, Wong, & Lai, 2008). (Wong et al., 2005) is an explorative study finding out if social interdependence theory holds up in supply chain relations in China. There was no conclusive evidence that it is applicable however the research showed promising signs. (Yang et al., 2008) is a study uses the construct from social interdependence theory and combines it with social exchange theory to determine why firms enter into cooperation. Goal interdependence being one of the reasons. The effect goal interdependence has on trust is particularly interesting as trust is an important part in effective and efficient supply chain relations (Brinkhoff, Özer, & Sargut, 2015; Thomas & Skinner, 2010; van Weele & van Raaij, 2014).

Asymmetric dependence is a construct that sees much more use in SCM in relation to power dependence. Asymmetric dependence is essentially the same as social dependence (Cox, 1999; Terpend & Krause, 2015). Social dependence is another construct developed in Social Interdependence Theory fully explained in section 2.2.2. However as social dependence was merely developed as an attempt to denote the borders of social interdependence theory the construct asymmetric dependence shows differences and is simpler and more clearly defined than social dependence.

The literature about asymmetric dependence sees more use in relation to business and SCM than Social Interdependence Theory. (Brinkhoff et al., 2015, p. 194) shows that even though asymmetric dependence has a negative effect on project success but that it can be overcome by trust. Trust is generated in part by open communication and both trust and open communication are part of social interdependence theories outcome variables. Adding to this knowledge Morton Deutsch his crude law of social relations we can posit that even though there is asymmetric dependence social interdependence theory can still work if only in part even though the assumption of equal power is violated.

2.6.4 Classification in the Life-Cycle Approach of Theories

(Vos, 2014, p. 9) developed the Life-Cycle model of theories. This tries to explain why theories can progress or degenerate over time. There are three possible phases a theory can go through: theoretical & empirical construction, progression (virtues) and possible degeneration.

As can be seen in section 2.3 the theory follows a clear internal logic which can be used to derive hypotheses and predictions from.

The hypothesis in the initial paper were clear enough to be falsified in the subsequent paper and in 754 research papers thereafter (David W. Johnson & Johnson, 1989, p. 75; 2005, p. 300).

The external virtues of a theory are its scope and unity, external consistency, conservatism and fruitfulness. The scope and unity are made clear by the large number of dependent variables that are affected by it. According to (David W. Johnson & Johnson, 2005, p. 302) “individual achievement and retention, group and organizational productivity, higher level reasoning, moral reasoning, achievement motivation, intrinsic motivation, transfer of training and learning, time on task, job satisfaction, interpersonal attraction, social support, interpersonal affection and love, attitudes toward diversity, prejudice, self-esteem, personal causation and locus of

control, attributions concerning success and failure, psychological health, and social competencies” are all affected by the Social Interdependence Theory. Which gives the theory a very broad generalizability.

The external consistency was not present in this theory at its conception. Morton Deutsch his first paper (M. Deutsch, 1949b) brought together a lot of research regarding cooperation and competition however it went against the then ruling theory of Social Darwinism. Nowadays it bears close resemblance to the later developed theory called Social Dependency theory. Showing that not every theory is externally consistent at its conception but may in time become so.

The lack of external consistency at the time of its conception was due to the fact that it wasn't very conservative about the virtues of competition. It was progressive about the virtues of cooperation and skeptical about the conclusions of Social Darwinism that competition always brought greater productivity and achievement.

The Social Interdependence Theory has clearly led to new insights about cooperation vs competition as shown by the subsequent 754 empirical research studies (David W. Johnson & Johnson, 1989, p. 75; 2005, p. 300). It has been most fruitful in the fields of conflict management (M. Deutsch, 1973) and cooperative learning (David W. Johnson & Johnson, 2009).

The sections above conclusively prove that the Social Interdependence Theory is a sound theory when measured with the variables from the paper of (Vos, 2014).

2.7 The Flaws of Social Interdependence Theory

2.7.1 Assumptions that are conflicting with Real Life Situations or Experimental settings

Some assumptions made when drafting this theory either don't happen in real life situations or cannot even be replicated in an experimental setting.

The assumptions that cannot be replicated in real life situations are as followed:

The single goal assumption. Social Interdependence Theory is structured on the assumption that there is only one goal. This goal is then either cooperative, competitive or individual. In reality people have multiple goals at a time and these goals can be a variety of cooperative, competitive or individual goals. The impact of these multiple goals and the interaction patterns on other goals should be further researched (M. Deutsch, 1949a, pp. 200,229; David W. Johnson & Johnson, 2005, p. 335).

The rationality assumption. Simple task and intelligent enough participants lead to no perception differences. This assumption was never proven to be true because there has never been an experimental setting where the task was simple enough for this to happen and even though the participants were mostly university students. Their intelligence should have been sufficient otherwise the theory would be a niche theory for extremely intellectual people working together in a group setting. Certainly most real life teams will be made up of people who do not have university degrees.

This kind of situation Morton Deutsch was not even able to recreate himself in the empirical research paper (M. Deutsch, 1949a) which following his initial paper (M.

Deutsch, 1949b) that explained his theory of Social Interdependence. However even though his assumption was violated most of his hypotheses could not be rejected. Most of the hypotheses of the original theory were still proven true. This is assumption is merely to have a well-rounded theoretical framework but many researchers do not even include the rationality assumption in their description of the theory.

Purely cooperative or competitive. Morton Deutsch already assumes that this is not the case in reality. Still the theory is framed with only the two pure forms for clarities sake. Morton Deutsch assumes that the theory can still be used in real life settings.

That pure situations cannot be found in real life settings can be shown with a simple example: A person might work together towards the same goal with its colleagues but simultaneously compete for a promotion. Morton Deutsch poses that without much extrapolation one can adapt his theory to the more complex situations (M. Deutsch, 1949b, p. 132). As proven in (M. Deutsch, 1949a) this does not stop the theory from working in real life. (M. Deutsch, 1949a) proves that you can indeed extrapolate from the original theory to more complex situations.

Equal power assumption. Even though as explained in section 2.2.1 an unequal balance of power does need to be detrimental for the sake of cooperation. It is clear that completely equal power relations are rare in real life settings.

There is also a lot of evidence that shows when there is an unequal the party who is dependent might be hesitant to communicate openly as not to make clear to the other party how dependent he is and the party who is more independent might abuse his situation at the cost of the dependent party (Brinkhoff et al., 2015, p. 183; Terpend & Krause, 2015, p. 39).

This is only with dyadic relationships. If the relationship becomes more complex even more forms of negative behavior due to power differences or lack of power can occur. Like social loafing, focusing on own goals and not group goals etc.

There should be more research into under which conditions of power difference this theory can still function.

2.7.2 Points for further Research

There are a number of points that could be improved by further research. First, there is substantial evidence to suggest that in most cases positive interdependence leads to promotive actions and there is evidence that it also leads to greater achievement and productivity, more positive relationships, and greater psychological health than does negative interdependence. However there has not yet been a study that investigates the correlations among interdependence, interactions patterns, psychological processes and outcomes in one study (David W. Johnson & Johnson, 2005, p. 340). Only individual links have been researched but not all the links put together as a whole like shown in Model.

Second, research to pinpoint under which circumstances these positive effects take place and how to best adapt the cooperation so that these positive effects are maximized is lacking. There has also been a lack of research into when negative interdependence or no interdependence has more positive benefits than positive interdependence. Research is primarily focused on cooperation. Negative interdependence, and individualistic efforts have not been scrutinized and given the clear conceptual analysis as positive interdependence has (David W. Johnson & Johnson, 1989, p. 30; 2009, p. 324).

Third, because in many situations goals are imposed on people and not chosen by people. The intrinsic motivation that

Social Interdependence Theory assumes is not always present. Therefore there should be more research done into how to induce commitment to goals in Social Interdependence Theory or how to apply already done about goal commitment to Social Interdependence Research.

Fourth, the amount of variables positively affected is now so big that it damages the theory rather than it helps. If cooperation has a positive effect on everything that may lead to skepticism and doubt which could lead to a loss of credibility in its effectiveness.

Fifth, Social Interdependence theory has not been integrated into any major theory in psychology and not been integrated with other theories in other fields. Researchers have also spend little effort to identify similarities and differences with regards to related theories like social exchange theory or social learning theory of group agency (David W. Johnson & Johnson, 2005, p. 342).

2.8 Differentiation to other Theories & Evolutionary Tendencies of Social Interdependence Theory

2.8.1 Different Forms of Interrelations Among Individuals

There are four forms of interrelations among individuals. Social independence, social dependence, independence and helplessness (David W. Johnson & Johnson, 2005, p. 278).

Social interdependence is when the outcome of individuals is affected by the interactions and actions of each other. Social dependence is when one individual is dependent on the actions of another individual but not the other way around. Social independence is when you control your own goal achievement and your goal achievement is unaffected by others. Helplessness is when the goal achievement cannot be changed by either person (David W. Johnson & Johnson, 2005, p. 278).

Social dependence is a construct that is used in supply chain management to denote relations of power (Terpend & Krause, 2015, p. 31). It focuses on dependent relationships and how best to take advantage of them. It is closely related to social independence theory and both together are sometimes named the dependent theory. For example in supply chain management a supplier may be heavily dependent on its main buyer but the supplier can be easily replaced by another so the buyer is not dependent on the supplier. The buyer is socially independent while the supplier is socially dependent.

It is also closely related to positioning and porter's five forces (Porter, 2008, p. 80). The best position to be in is to be independent and have others be dependent on you so you can maximize the value for yourselves at the cost of others (Cox, 1999, p. 171).

This paper focuses on social interdependence but it's important to keep in mind that these other forms do exist. If only to keep clear the boundaries of social interdependence theory. Social interdependence theory defines itself by only focuses on goal interdependence and supposes that working together can lead to synergy far greater than working alone.

2.8.2 Different Theories related to Social Interdependence Theory

Besides social interdependence theory I have already mentioned social Darwinism and social exchange theory.

Social Darwinism approaches everything from a natural selection point of view. Natural selection is based on competition between weaker and stronger competitors and it

posits that the stronger competitor with the attributes more suited to its environment will survive (Brinkworth & Weinert, 2012, p. 78). As stated earlier in this section 2.1 (Asch, 1952) states that cooperation is fundamental to human achievement. Like Durkheim's mechanical and organic solidarity principle. Organic solidarity is when people feel connected because they are all interdependently working to achieve the same goal (Durkheim, Lukes, & Halls, 2013). Most of man's great works have always been made through some form of cooperation. From the pyramids to the James Webb Space Telescope.

This difference in viewpoint is also the reason why social interdependence theory has focused more on cooperation than competition because it was called into life because of the lack of focus on cooperation.

Social exchange theory is another social theory that tries to explain human relationships. Although there are different interpretations of social exchange theory this paper will only use one. It goes beyond the purpose of this paper to describe them all. (Homans, 1961, p. 13) defined SET as "social exchange as the exchange of activity, tangible or intangible, and more or less rewarding or costly, between at least two persons."

This theory has just like social interdependence theory interdependence and self-interest as a basis for interaction. Instead of the interdependent goal being the binding glue that holds together a relationship it is the cost and benefit analysis from both parties and their perception of interdependence that holds together the relationship according to social exchange theory. This theory has focuses mainly on rewards, Homans's propositions, and their effect on a relationship and power dependence relations (Emerson, 1976, pp. 339, 358).

Social exchange theory focuses more on situations with power asymmetry and therefore is very useful to gain a more complete understanding of social relations. The social exchange theory has also made more progress into researching power relationships and following the conclusion that relationships are never truly symmetric in power social interdependence theory can learn from social exchange theory how to best research the effects of these small asymmetric power differences.

The social interdependence theory as described in section 2.1 shows that it has developed over the years a yearning to know all the variables that are connected to social interdependence and its effects however the list of variables is becoming so large that it might render the theory useless. Social interdependence theory should now look to make clear the main variables that affect cooperation and do more research testing the effects of leaving out the assumptions like equal power, one goal etc. that do not appear in a real life setting. Competition and individualistic actions should also be more clearly defined. Their effects, variables and in which situations they can be useful. Like cooperation has been clearly defined.

3. Social Interdependence Theory and the Application to Supply Chain Management

3.1 Decision point 1: Social Interdependence Theory Cannot Offer Guidance on the Make or Buy Decision.

Make or buy decisions are made for different reasons according to different theories. Every theory brings its own

perspective to the make or buy decision. However the make or buy decision itself is mostly the same in every theory. It is about deciding to make an item internally or outsource it to an external supplier to create a (long-term) competitive advantage.

The social Interdependence Theories perspective has little to add to this decision. The Social Interdependence theory focuses on cooperation vs competition in small groups. This relationship will not be present if a company decides to make something internally and will be present when it chooses a supplier to buy the product from. However without any relevant research related to the make decision Social Interdependence Theory cannot offer guidance on the choice between make or buy.

3.2 Decision Point 2: Sourcing Strategies

The decision to not make but buy leads to the necessity of a sourcing strategy to make sure the decision to buy will lead to competitive advantage (Seshadri, 2005, p. 13).

According to (Seshadri, 2005, p. 5) "a sourcing strategy is most affected by changes in technological developments, global communication and cross-border marketing".

If Social Interdependence Theory clarified the situations wherein cooperation and competition are desirable and the effects thereof in Supply Chain management a firm developing a sourcing strategy could use this information to select the kind of relationship they want with different kind of suppliers. For example a cooperative supplier relationship has certain characteristics. More open and frequent communication, more trust etc. It depends on the kind of item is being made by a supplier and what for whether more communication, trust is a good thing. If it is a relatively simple task that is being outsourced the more time spend on this relationship the more expensive it is. A competitive relationship with less contact than a cooperative relationship will be preferred then. If the component that is being outsourced is for example highly specialized more frequent and open communication will be preferred. However the lists of variables affected by Social Interdependence Theory is quite extensive and not all these variables will be relevant for supply chain management. Also not all situations will be this straightforward and research needs to be done to see which scenarios require a cooperative or competitive approach.

3.3 Decision point 3: Supplier strategies, Competition or Cooperation?

A supplier strategy is the strategy behind selecting the right supplier that lines up with the interests and objectives of the buyer (Seshadri, 2005, p. 139).

Different supply chain theories have different ideas about how to gain competitive advantage from the supply chain relationship. From some theories it can be gleaned that they are either cooperative or competitive. For example Emerson's power independence theory is about how to use power to get the most out of a relationship. Social Independence predicts that with power differences the relationship will get competitive. Competitive relationships tend to show certain characteristics like lack of trust and less open communication. If these characteristics are not problematic for the supplier relationship a company is looking because the task is for example relatively simple than a partner who uses Emerson's theory is not problematic. Is the company looking for a supplier relationship that is marked by trust and open

communication denotes this difference in perspective and the effect on the relationship. If one party has a competitive perspective the relationship will become competitive even if the other party has a cooperative perspective. As described in section 2.2 where Morton Deutsch his crude law of social relations is explained.

An attempt can be made to classify these theories as (leaning towards) competitive or cooperative. If you know the partners supply chain strategy the firm can predict what kind of relationship will follow. With this information supply partners can be (partially) picked based on the kind of relationship the firm can expect from its partner.

For example, (Cox, 1999, p. 167) tells the story of Toyota and the lean approach, which is a core theory of outsourcing, with a different element added to the mix. (Cox, 1999) posits that Toyota wasn't only successful because of the lean approach but also because it outsourced from a position of power. Toyota retained only the design and assembly role not only because the industry was highly standardized but also because it could always maintain power asymmetry in its own favor and take advantage of this position. This view is clearly competitive and if one company in the relationship follows this view the relationship will be competitive according to Social Interdependence Theory.

However if there is not already a strategy in place that either proscribes to a competitive or cooperative perspective negative or positive goal interdependence can steer a relationship towards competition or cooperation. Also when a relationship is formed the existence of positive or negative goal interdependence can steer a relationship towards either competition or cooperation and change the underlying perspective. Keep in mind that changes towards competition are far easier than changes towards cooperation because cooperation costs are higher in time, effort and money.

3.4 Decision point 4: Negotiation and Contracting, Improved Relationship Management

What to specify in a contract and what to leave open is an important part of negotiations. The more specific a contract is the more reliable the outcome. However increased specificity also increases costs (Zsidisin & Ritchie, 2008, p. 16). How much contracting is requirement depends on what kind of relationship the firm has with its buyers or suppliers. The more trust and open communication within a relationship the less specific a contract needs to be. Except contracting there are also other areas that see decreased cost in a supply chain relationship due to increased trust.

Social Interdependence Theory shows that trust and more open communication comes from positive goal interdependence and a cooperative group relationship. In a negative goal interdependence relationship in the supply chain the relationship is going to be based on competition. Improving the firm's profitability at the expense of the supplier. This leads to less trust and less open communication than when there is positive goal interdependence. Therefore if a relationship is competitive there is more need for negotiation and contracting than there is when there is a cooperative relationship.

(Brinkhoff et al., 2015) posits that all you need is trust to make supply chain relationship work. Trust is a natural outcome of positive goal interdependence. Undertake positive actions, shape psychological processes, interactions that will shape positive outcomes. Goal interdependence and the

perception thereof fosters a multitude of positive effects (explained in section 2.3).

The main problems facing SCM today according to (Zsidisin & Ritchie, 2008, p. 16) "multiple sourcing, sharing the consequences of risks across the supply network, sharing information, building relationships and establishing trust". The factors most compatible with Social Interdependence Theory are trust, better communication, higher effort and achievement. With these things in a supply chain relation more can be outsourced with less costs. As (Zsidisin & Ritchie, 2008, p. 16) shows that one problem in supply chain management is that more open communication leads to less costs and more cost saving. sharing information, building relationships and establishing trust.

4. Discussion and Conclusion: Further Research is Needed before Social Interdependence Theory can be Applied to SCM

This literature review was written with a singular purpose. To answer the question: *In how far can the social interdependence theory be practically applied to supply chain management?*

After first placing the Social Interdependence Theory in the time of its conception. To gain a better perspective of why or for what purpose this theory was created. Through this we gained the insight that it was created to counter the singular view of Social Darwinism that competition was king.

With this in mind we looked at what exactly is Social Interdependence Theory. The answer to this was that it is a interaction theory that researches and tries to explain relationships within groups behavior. The main construct Goal Interdependence is used to explain why a group's relationship is either cooperative or competitive. Positive goal interdependence leads to cooperation and negative goal interdependence leads to competition.

After the theories conception there has been a lot of research into finding out what kind of behavior can be categorized as cooperative or competitive, the effects of cooperation and competition and which variables are affected by cooperation and competition. Apart from this another discovery was made that not only negative or positive goal interdependence can lead to cooperation or competition but that also the behavior that was displayed in either form can lead to competition or cooperation. If you display cooperative behavior you get cooperative reactions and if you behave competitively you get competitive reactions.

However the focus was far more on cooperation than on competition which can be explained by the reason behind the conception of this theory. This is a major problem in making use of this theory in Supply Chain Management. If a comparison between competition or cooperation cannot be adequately made, because competition has barely been researched, a choice between cooperation and competition cannot yet be made on the basis of this theory.

For further research I would strongly advise to first figure out if the results for small group relationships found in Social Interdependence Theory are indeed found in supply chain relationships and when. For now there has been only one research done into this and the finding were only moderately positive (Yang et al., 2008). If this cannot be proven Social

Interdependence Theory is of no use to SCM.

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