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Morton Deutsch: Celebrating His Theorizing and Research

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Abstract

This tribute to Morton Deutsch celebrates his unique contributions to social psychological theory, research, cross-cultural applications to business and organizational settings, and cross-species applications. Mort's theorizing progressed from cooperation and competition to trust to conflict resolution to distributive justice, and finally to oppression. As a researcher, Mort was remarkably creative and innovative. His ability to think of ways to study experimentally complex social phenomena created a revolution in social psychology research. Mort's theories and research is being used to understand the nature of effective leadership and organization functioning in business and industry in Asia and other parts of the world. The strong cross-cultural validation of Mort's theorizing and research is unusual in the social sciences. Finally, Mort's cooperation and competition theory operationalizes the dynamics between cooperative and competitive processes in a variety of species and accounts for the mechanisms (e.g., goal structures) that underlie different evolutionary processes.

In this tribute to Morton Deutsch, the 1993 and inaugural Lifetime Achievement Award of IACM, we celebrate four areas of his work and their contributions to psychology. Each of us highlights unique contributions of Mort's work: (a) David focused on Mort's development of theory, (b) Roger focused on Mort's innovations in research, (c) Dean focused on Mort's cross-cultural contributions to business and organizational settings, and (d) Cary focused on the application of Mort's theories across species. David was a student of Mort's, Dean and Cary were grand-students of Mort, and Roger was a friend of Mort.

Morton Deutsch as a Theorist—David W. Johnson

Every Thursday noon, Mort ate lunch with his advisees. The lunch was a chance to interact informally with Mort and with the other advisees. There was no agenda for these lunches. We did not discuss the projects we were working on. Rather we engaged in an informal discussion of whatever came up, which often was current or historical events. What those discussions revealed was Mort's extraordinary theoretical expertise. Mort was a scholar, who understood the philosophy of science and what differentiated a good from a poor theory. In the early 1960s, he wrote a classic book on theories in social psychology (Deutsch & Krauss, 1965) see Figure 1.

Figure 1. David Johnson, Morton Deutsch, Roger Johnson, 2002 Theory Conference, Silverwind Farm, Shakopee, Minnesota.

Mort's theorizing was based on his experiences as a navigator on a bomber during World War II. Deeply committed to world peace, in the late 1940s, he formulated his theory of cooperation (positive goal interdependence) and competition (negative goal interdependence) (Deutsch, 1949a, 1962). His careful definitions of cooperation and competition based on goal interdependence resolved the considerable conceptual confusion that existed in previous discussions of these concepts. He also placed the concepts into a theoretical framework that explained their relationship with mediating processes (promotive interaction and contrient interaction) and outcomes (dependent variables such as achievement and interpersonal attraction). In the 1950s, he added the concept of individualistic efforts, where no goal interdependence exists, to the theory.

In the 1950s and 1960s, Mort extended his theory of cooperation and competition by positing that trust and constructive conflict resolution mediated the effectiveness of cooperative efforts. He conceptualized trust as consisting of the following elements (Deutsch, 1958, 1962): a person (a) realizes that a choice to trust another person can lead to either beneficial or harmful consequences, (b) realizes that whether beneficial consequences or harmful consequences result depends on the actions of the other person, (c) expects to suffer more if the harmful consequences result than gain if the beneficial consequences result, and (d) is relatively confident that the other person will behave in such a way that the beneficial consequences will result. Mort noted that three of the important aspects of trust is that it exists between (not in) parties, it is dynamic (constantly changing), and it is easy to destroy and difficult to build.

Before Mort's theorizing about conflict of interests, there were multiple definitions of conflict. Definitions of conflict included terms like "struggle," "opposition," "argument," "clash," "disagreement," "collision," "fight," and other similar terms. Few theorists or dictionaries used the same definition. Many of the definitions of conflict, furthermore, confused conflict with competition. Deutsch (1973) provided conceptual clarity by defining *conflict* as existing whenever incompatible activities occur (i.e., activities are incompatible when they prevent, block, or interfere with the occurrence or effectiveness of each other). This definition separates conflict from cooperation and competition, making it clear that conflicts can occur in both competitive and cooperative situations. He noted that while every competition is a conflict of interests, not every conflict of interests is a competition. There are also conflicts of interests in cooperative situations, such conflicts over which strategy to use to solve a problem or what role each

participant should play in a group. His research indicated that conflicts of interests are easier to resolve when they are small and defined as a problem (not as a win–lose situation) and harder to resolve when weapons are available to one or both parties.

In the 1970s, he further extended his theorizing by focusing on the way in which benefits are distributed in cooperative and competitive situations (Deutsch, 1985). Originally, distributive justice theorists focused on equity, where whoever performs the highest gets the most benefits. Drawing on the work of Johns Rawls (1971) and others, Mort added two additional types of distributive justice: equality (where everyone received an equal share of the benefits) and need (where the person who needed the benefits the most was awarded the benefits). Mort noted that equity is a competitive system of distributing benefits and equality and need are cooperative systems. His writings changed the whole view of distributive justice (Deutsch, 1985).

In the 1980s and beyond, Mort focused his theorizing on oppression, an outcome of destructive competition (Deutsch, 2006). He defined oppression as existing when people experience repeated, widespread, systemic injustice. This definition includes legal oppression (such as slavery or the lack of the right to vote), violent oppression (as is found in tyrannical societies), and civilized oppression (the everyday processes of oppression in normal life). He identified five types of injustice resulting from oppression: distributive injustice, procedural injustice, retributive injustice, moral exclusion, and cultural imperialism.

It should be noted that an unusual strength of Mort's theorizing is that it is multilevel. Mort's theories may be applied at the intrapersonal level (cooperation or competition between two or more aspects of oneself), at the interpersonal level (cooperation or competition between two or more individuals), intergroup (cooperation or competition between two or more groups), interorganizational (cooperation or competition between two or more organizations), intercultural (cooperation or competition between two or more cultures), and international (cooperation or competition between two or more nations). Mort's theories even extend beyond humans to other species as well (cooperation or competition between two or more species). The fact that Mort could formulate theories that are valid on so many different levels of interaction is remarkable.

Mort was certainly one of the premier psychological theorists of the 20th century. That someone of Mort's age stayed productive and conceptualized so well is unusual. Mort's theories are somewhat unique in that they have remained firmly in the Lewinian tradition of studying relationship variables that exist among two or more parties. Most psychological theorists focused on individual variables, attempting to understand the laws that govern the behavior of a single individual. The causes of an individual's behavior were assumed to be inside the individual, consisting of personality traits, attitudes, values, skills, aptitudes, brain chemistry, and genes. In contrast, Mort's theories focus on relationship variables that reside between and among parties. The causes of an individual's behavior are assumed to be in the interaction among individuals, changing constantly according to the way one's actions affect the actions of others. Following Lewin's notion of a quasi-stationary equilibrium (Lewin, 1935), Mort also conceptualized cooperation and competition as being dynamic, where each action by a person increased or decreased the level cooperation or competition in the situation. The same is true for trust, conflict, and his other theories.

When one looks at the progression of Mort's work from cooperation and competition to trust and conflict, to distributive justice, and then to oppression, it is clear that during his career Mort built a body of work that is coherent and progressive, providing a foundation for future theorizing and research. Mort's theorizing began with his theory of cooperation and competition. Once it was completed he began work on variables that mediated the effectiveness of cooperation, that is, trust and constructive conflict resolution. It seemed apparent that cooperation could not take place without trust. Destroy the trust and the cooperation among parties is destroyed. Increase the trust, and the effectiveness of the cooperation is increased. In addition, cooperation often involves conflicts of interests. The interests of the parties involved are almost never the same and, therefore, the conflicts among their interests have to be resolved in constructively. In addition, when individuals care about the mutual goal, then conflicts may occur over how best to achieve the goal. Within cooperative and competitive situations, furthermore, benefits are distributed differently. In competitive situations, an equity system is used to distribute

benefits and rewards, while in a cooperative situation, benefits may be distributed equally or in consideration of need. This led Mort to theorize about distributive justice. Finally, long-term competitive relationships may result in the oppression of the "losers." Oppression is one of the worse case outcomes of competitive interaction. Mort once remarked that he had been studying the same thing (i.e., cooperation and competition) all his life. When you see the progression of his work, you have to agree. There are very few scientists who have conducted such a coherent progression of theory and research. This coherent, long-term body of integrated theorizing and research reflects Mort's genius.

Mort's commitment to world peace is reflected in his 1962 book, *Preventing World War III* (Wright, Evan, & Deutsch, 1962), in which he discussed one of his favorite themes, changing an adversary into a cooperator. His commitment to peace extended to his later years, in which he founded in 1986 the International Center for Cooperation and Conflict Resolution (ICCCR) at Columbia University in New York. The goal of the Center was to integrate the theory of conflict resolution with its actual practice. In the early 2000s, Mort also founded an international network of scientists committed to world peace. He wanted to connect all scholars and researchers dedicated to world peace in a network that could exchange ideas and help each other succeed in their local and international efforts.

Morton Deutsch as Researcher—Roger Johnson

During the Thursday lunches, and again in research seminars, Mort stated that it took a once in a lifetime genius (such as Freud, 1953–1974) to conduct a meaningful and significant case study; it took a regular genius to conduct a meaningful field study, but any normally intelligent person could conduct a meaningful experiment. He would then laugh and note that mostly he conducted experiments. None of us were fooled into thinking his IQ was 100. But it gave us hope that we could conduct meaningful studies. He recommended making cautious conclusions close to the data, but to think of grandiose, not picayune, implications (Deutsch, 1973, 1985). Thus, while Mort was very careful about stating what could be concluded from the data in a study, he had no hesitation in stating what the implications were for relationships among individuals, groups, or nations (see Figure 2).

Figure 2. Participants in Social Interdependence Theory Conference, 2006, Silverwind Farm, Shakopee, Minnesota.

As a researcher, Mort was remarkably creative and innovative. His ability to think of ways to study experimentally complex social phenomena created a revolution in social psychology research. He emphasized experimental work with high internal validity, while he mostly left for others the conducting of related field research emphasizing external validity. His theory and research then provided the foundation for extensive research reviews (Johnson & Johnson, 1989).

Mort's dissertation brought cooperation and competition into an experimental format. Mort himself conducted only a few studies on cooperative, competitive, and individualistic efforts. Subsequent to Deutsch (1949b) dissertation, however, over hundreds of studies have been conducted by other researchers. These studies have been based on a wide variety of theoretical orientations, such as cognitive and moral development, behavioral theory, information processing, cognition theories, and many more. Even though the studies were based on a wide variety of theories, David and Roger Johnson (1989, 2005, 2015) used Mort's cooperation and competition theory along with meta-analysis procedures to organize and summarize the overall results. The meta-analyses focused on achievement, interpersonal attraction, motivation, self-esteem, social support, controversy, training in teams, problem-solving, performance in postsecondary settings, motor performance, adult problem-solving teams, the relationship between interpersonal attraction and achievement, and the relationship between motivation and achievement (see Johnson, 2003; Johnson & Johnson, 1989, 2005; Johnson & Johnson, 2009). While most of the studies were based on other theoretical frameworks and scattered throughout diverse literatures, Mort's cooperation and competition theory was the most useful theory in organizing and summarizing their results.

Mort became the first social psychologist to use the prisoner's dilemma (PD) game in devising a way to study trust in an experimental format. The frequency of the use of the PD Game in subsequent research indicates that Mort created a revolution in social science research by pioneering the use of the PD game and showing how games could be used to study complex social phenomena such as trust and conflict. Thousands of studies, for example, have utilized the Prisoner's Dilemma Game. Mort designed experimental situations, such as the Acme-Bolt Trucking Game, to study conflict and distributive justice experimentally. Mort changed research in social psychology by demonstrating that complex social phenomena may be studied experimentally and by utilizing games in experiments. He has been a pathfinder and a scout laying out the path for others to follow with their research using similar experimental situations and games. His creative innovations in research methodology changed the field of social psychology.

As students, we admired Mort for his leisure activities as much as for his professional work. He bought a summer house in the Hamptons, on the seashore, and would spend several months a year enjoying the quiet (compared to New York City) and the sea. Once or twice a year he and Lydia would go to France, identify top gourmet restaurants and wineries outside of Paris, and tour the French countryside eating incredible food and drinking incredible wine at an affordable price. Their vacations seemed like a description of heaven to struggling graduate students. In addition, Mort's wife Lydia was an artist and an art collector (as was his brother-in-law), so Mort was surrounded with pieces of fine art in his home. Mort modeled a good way to live, reminding his students that in addition to a productive professional life, one should live a full and enjoyable personal life.

Cross-Cultural Validation and Application—Dean Tjosvold

Dean Tjosvold and his colleagues have used Mort's theories of cooperation and competition, conflict resolution, trust, and distributive justice to understand the nature of effective leadership and organization functioning in business and industry in Asia. For the past 25 years, they have also confirmed that Mort's theories apply in cross-cultural settings (see Figure 3).

China has undertaken one of the most significant and largest social experiments in history as it moves from communism to a market-oriented economy and an open society. Mort's theories of cooperation and competition, conflict resolution, trust, and distributive justice help Chinese managers and employees

Figure 3. Dean Tjosvold, Morton Mort, David Johnson in Mort's Office in 2015, Teachers College, Columbia University, New York City.

develop the open-minded, effective leadership and teamwork needed to meet these challenges. Mort's theories also help guide productive interaction in Chinese organizations and cross-cultural interaction between Chinese and Western individuals, groups, and organizations.

Mort tended to be both polite and direct in his interactions with colleagues. At the 2002 Social Interdependence Theory Conference in Minnesota, Dean and David awarded Mort the "Non-substitutability Award" to indicate his value to the field of psychology. We also wanted a memorable gift from Minnesota to complement the award. Neither David nor Dean drinks wine, but they believed Mort would appreciate an expensive red wine from well-known winery in Minnesota. When asked the next year about his gift, Mort expressed how much he enjoyed receiving the award. He thanked us for the wine but stated it was not necessary to give him another bottle. We learned afterward that Mort's brother-in-law kept him stocked with the best French wines. We also learned more about the relative quality of Minnesota wines.

The first question investigated is whether Mort's theories are valid in eastern as well as Western cultures. Despite the stereotypes of Chinese leadership being autocratic and Chinese followers being quick to follow the directives of leaders, the evidence supports Mort's theorizing that managers in Chinese organizations benefit from developing a cooperative, open relationship with employees. Chinese employees tend to want a mutual cooperative relationship with their managers and expect their managers to consider their needs and views. Authority is earned by managers demonstrating commitment to employees and openness to their thinking. Thus, Mort's theories seem to be as valid in eastern cultures as they are in Western cultures.

The second question is whether the findings that cooperation promotes greater productivity and achievement than do competitive or individualistic efforts will be replicated in eastern cultures. The research shows that even when they consist of culturally diverse individuals, managers and employees work together more productivity in cooperative relationships, including more effectively integrating their ideas and combining their efforts to complete projects effectively (Tjosvold, Wong, Chen, & Li, 2012). Managers and employees dominated by competitive and independent goals and relationships, however, tend to work at cross-purposes and to be closed to each other's ideas, thus reducing their effectiveness. Managers and employees tend to be more productive when they develop strong cooperative

relationships. The more cooperative the relationships among managers and employees, furthermore, the more positive the relationships tend to be. Thus, the findings supporting Mort's theories in Western cultures are corroborated by the findings in eastern cultures.

The third question is whether the advantages of intra-organizational cooperation will be found in interorganizational cooperation. While the costs of coordinating, monitoring, protecting one's organization from opportunism, and other transaction costs can make cooperation among organizations ineffective, organizations are still forming partnerships to work together (Wong, Wei, & Tjosvold, 2015). Because cooperative goals directly promoted the effectiveness of joint efforts, competitive goals among organizations tend to increase transaction costs that reduced the effectiveness of their joint efforts. Similar results were found for the coordination of government and private organizations joint efforts. Cooperative relationships are also useful for helping government workers and citizens prepare for and manage natural disasters. Based on interviews of survivors from the 2008 Sichuan earthquake, cooperative goals between government and survivors tended to facilitate the system of social networks and influential relationships that promoted the effectiveness of joint efforts. Open-minded discussion between government officials and survivors tended to promote survivors' social support, satisfaction, reduced stress, and conclusions that government officials led effectively. Thus, even at the interorganizational level, Mort's theory of cooperation and competition was validated in Chinese culture.

The fourth question is whether Mort's theory of cooperation and competition would be confirmed in interaction among individuals from different cultures. As economic activities are increasingly global, cooperative goals have been found to help diverse people work together effectively, discuss opposing views openly, and manage conflicts for mutual benefit (Wong, Tjosvold, & Chen, 2010). Competitive goals, on the other hand, were seen as promoting free riding and obstruction of joint performance. Cooperative goals tended to help employees and their foreign managers develop a quality relationship and improved leader effectiveness, employee commitment, future collaboration, and innovation.

The fifth question is whether conflicts within Chinese organizations be managed more constructively when the organizational goals are structured cooperatively rather than competitively. Deutsch (1973) stated that conflicts are managed more effectively in a cooperative context than in a competitive context. In the research in China, cooperative goals were found to increase managers and employees willingness to engage in direct, confrontational discussions that in turn promoted innovation and other productive outcomes while competitive goals tended to do the opposite (Tjosvold, Wong, & Chen, 2014). Managers and employees with competitive goals typically tended to avoid conflict, mostly because they were afraid that open discussions of problems would escalate into destructive conflict. Thus, Mort's theorizing about the nature of conflict in cooperative and competitive contexts was validated in Chinese organizations.

In summary, Mort (Deutsch, 1949b) validated his theory of cooperation and competition with a study of university students taking a psychology class. Many of the subsequent studies were conducted using North American university students as participants. That limits the generalizability of the results. This leaves open the question, as to whether the theory will be valid in different cultures and in applied settings as well as the research laboratory. What Dean Tjosvold and his students and colleagues have done is to use Mort's theories on cooperation, trust, and conflict to study the effectiveness of business organizations in China and other Asian cultures using as participants business personnel working on their jobs. Their results corroborate the findings of North American studies, thus demonstrating the generalizability of Mort's work.

Mort also provided a model for us on dedicated professional work. He would arrive at the office around 8:00 am, say hello, go into his office and close the door. He was not to be interrupted unless it was for something vitally important. Around noon he would come out for lunch, check on the research projects, answer anyone's questions, then go back into his office and was not to be disturbed all afternoon. He was never unfriendly, he was just a serious working person. He would, of course, come out of

his office and give his classes, leading to some discussion time after each course session. He also arranged to have a variety of social psychologists come and give talks on their work. Each Thursday, we would all have lunch with him for a more general discussion of world events and interesting happenings in the field of social psychology. Mort made it clear to all of us that we were expected to work as hard or harder than he did, both while we were in graduate school and after we were graduated.

Cross-Species Comparative Validation and Application—Cary Roseth

I first met Mort in 2006 during the Annual Social Interdependence Theory Conference. Until then, as a doctoral student of David Johnson, my knowledge of Mort was limited to his writing and David's numerous anecdotes about what it meant for me to be Mort's academic "grandchild." To say I was nervous about meeting Mort is a huge understatement. My role during the conference was to remain quiet and learn, so it came as a bit of a shock to find myself sitting next to Mort at dinner. He sat down, turned to me and said, "I'm glad you're here. . ." which triggered my awkward account of how much his work meant to me and how lucky I felt to finally meet him. Mort smiled patiently through it all and when I finally finished said, "Well, now I'm *really* glad you're here. Not only do you flatter me, but I also suspect you can reach the butter" (see Figure 4).

Figure 4. Cary Roseth and Morton Deutsch at dinner during the 2006 Social Interdependence Theory Conference, Silverwind Farm, Shakopee, Minnesota.

The purpose of this portion of the article is to consider what cooperation and competition theory (Deutsch, 1949a, 1962, 1973) offers evolutionary-oriented perspectives on the origins and functioning of cooperative and competitive behavior in primates and other living beings. Other theories, such as Darwin's (1859/1964) theory of natural selection (which account for changes in the frequency of an organism's genes over time), and kinship theory (Hamilton, 1964) (which accounts for why an individual will make sacrifices for one person but not another) focus on the "why" of cooperation and competition. Cooperation and competition theory (Deutsch, 1949a, 1962; Johnson & Johnson, 1989, 2005), in contrast, focuses on the dynamics of behavior resulting from the way individuals perceive the correlation

between their goals and others' goals. The perceived structure of the goals yields different interaction patterns and outcomes. Cooperation and competition theory operationalizes the dynamics between cooperative and competitive processes and accounts for the mechanisms (e.g., goal structures) that underlie different evolutionary processes.

Why Natural Selection Favored More than Competition

Cooperation and competition theory focuses on behavior in the immediate situation and the foreseeable future. While both short-term and long-term goals are perceived and acted upon, individuals clearly engage in cooperative or competitive behavior as they forage for food or seek shelter. Their day-to-day, moment-to-moment behavior is explained by the perceived structure among their goals.

On the other hand, evolutionary theory assumes that for social behavior to evolve, it (a) must have a genetic origin and (b) the ratio of costs and benefits associated with the behavior must be greater than that of alternative behaviors in the population. In other words, natural selection favors whatever social behaviors help "winners" to increase the relative frequency of their genes compared to "losers." Applying these ideas to cooperation and competition, evolutionary theorists have typically assumed that the cost-benefit ratio of competition would exceed that of cooperation. After all, resources like food, mates, and places to live are scarce, and free riders who reap the benefits of cooperation with minimal contribution will always have an advantage over those that contribute more for the same level of benefits. In Darwin's words, "He who was ready to sacrifice his life, as many a savage has been, rather than betray his comrades, would often leave no offspring to inherit his noble nature" (Darwin, 1871/1998, p. 135). As such, the question of how cooperation evolved has often been described as one of the great biological dilemmas because its ubiquity across species suggests that the benefits of cooperation outweigh the associated costs, including the risk of being exploited by others. Deutsch's (1949, 1962) theory clearly posits that cooperation is far more important than competition in immediate well being and long-term survival. This discrepancy between Mort's theory concluding that cooperation is far more important than competition for human survival and Darwin's evolutionary theory predicting just the opposite is now being resolved in favor of Mort's theory and research. The basic assumption that the benefits of cooperation outweigh the benefits of competition is currently supported by five different hypotheses about the way cooperation evolved.

Living in Groups

One of the most obvious pieces of evidence that cooperation offers a selective advantage is the ubiquity of group life across species. Be it a colony of 10,000 flamingos, a herd of antelope, pride of lions, school of fish, or human metropolis, the benefits of living in groups must have exceeded the costs and increased the likelihood of varied species to survive and reproduce. According to Lewin (1935) and Deutsch (1949a), the essence of a group is members' commitment to a common goal. In some species, for example, individuals that live in groups can capture prey that they could not capture on their own (e.g., killer whales hunting porpoises, lions hunting adult buffalo). Likewise, individual birds that live in flocks (e.g., pigeons, ostriches) can spend less time scanning for predators and more time feeding because they share the responsibility of scanning for predators with the other members of the flock. These examples illustrate common goals and validate Mort's ideas about the way one individual's actions can substitute for another's when their goals (e.g., kill prey, avoid predators) are structured cooperatively.

Inclusive Fitness

Another account of the way cooperation evolved emphasizes the idea of *inclusive fitness,* broadly defined as the increased frequency of one's genes in future generations that results from working cooperatively with others. For example, *kin selection* increases inclusive fitness because, from an evolutionary point of

view, helping close relatives to survive and reproduce also increases one's own genetic representation in future generations (Hamilton, 1964). Thus, even though sterile worker bees die when they sting a predator, by protecting the hive they also help the queen (their mother) to produce offspring that share their genes. Likewise, closely related female ground squirrels give alarm calls about predators and work together to defend each other's young even though both actions make them more likely to be killed by predators. For these and other species whose cooperative actions incur personal costs but benefit kin, what ultimately matters is that helping their relatives also increases the survival and reproduction of their genes.

Deutsch's (1973) research indicates that a strategy successful in inducing cooperation in another individual is "Tit-for-Tat," where one reciprocates the behavior of the other party. "Tit-for-Tat" is considered to be a cooperative Evolutionary Stable Strategy (i.e., it resists mutant strategies over time) as long as there is a high probability that two individuals will meet again in the future and that cooperation will be reciprocated (Axelrod, 1984).

The basic premise of inclusive fitness also applies to different species that share *mutualistic* relationships. For example, the clownfish and sea anemone protect each other, with the anemone's stinging tentacles protecting the clownfish from predators and the clownfish protecting the anemone from the fish that eat its tentacles. Likewise, flowering plants are thought to have coevolved with the animals that pollinate them, resulting in mutual dependence between the highly specialized flower and the specific pollinator. In Mort's terms, these different species' goal achievement (e.g., survival and reproduction) depends on the other species goal achievement, which results in cooperation.

Natural Conflict Resolution

While theories of group life and inclusive fitness provide different explanations of how cooperation evolved, they do so in full recognition that cooperation does not exist in isolation and, at any given moment, may be threatened by competitive strategies that reap the benefits of cooperation without sharing in the costs. As such, the most important evolutionary question is how cooperative and competitive processes both evolved in a way that balances agentic and communal interests.

Contemporary evolutionary theory and research has addressed this issue by arguing that natural selection favored conflict resolution mechanisms that limit the costs of conflict and help to restore cooperative interactions when competitive forms of conflict inevitably occur. For example, ethologists argue that dominance–subordinance relationships evolved as "sorts of peace agreements" (de Waal, 1986; p. 461). The basic premise is that subordinate individuals learn to avoid challenging more dominant individuals because the costs of doing so outweigh the benefits (i.e., they are likely to lose the contest), and more dominant individuals learn to avoid challenging subordinates because the benefits of doing so are less than the costs (e.g., social sanctions) (for a review, see de Waal, 1986). The social dominance hypothesis has been supported with preschool children and adolescents (e.g., Roseth, 2018) as well as range of animals such as nonhuman primates, wolves, zebras, horses, pigs, dairy cattle, birds, crayfish and wild dolphins.

Another example of an evolved mechanism that limits the costs of interpersonal conflict is *reconciliation.* Mort (Deutsch, 2000) notes that with humans, reconciliation begins with forgiveness. Reconciliation also is facilitated by the development of powerful superordinate cooperative goals that override the self-interests of each person or group (Sherif, Harvey, White, Hood, & Sherif, 1961). Mort discusses six issues relating to successful reconciliation: mutual security, mutual respect, humanization of the other, fair rules for managing conflict, curbing the extremists on both sides, and gradual development of mutual trust and cooperation. de Waal (2000) notes that rather than helping individuals avoid conflict, reconciliation allows social species to repair the damage caused by conflict and restore friendly, cooperative interactions. To date, researchers have documented reconciliation among 27 different species of nonhuman primates (Cords & Aureli, 2000), human children ranging in age from 3 to 11 years old from six

different countries (Japan, The Republic of Kalmyk, the Netherlands, Russia, Sweden, and the United States; for a review see Roseth, 2018), and domestic goats, feral sheep, spotted hyenas, and bottle-nosed dolphins (for a review, see Schino, 2000).

In short, social dominance and reconciliation help to integrate cooperation and competition in social species that inevitably experience both. These ideas parallel Mort's theorizing about conflict resolution, forgiveness, and reconciliation (e.g., Deutsch, 1973, 2000), and in particular the idea that whether conflict results in constructive or destructive outcomes depends on the conditions under which it occurs. When individual's goals are structured competitively, and one person's success depends on the other's failure, then competitive processes and destructive outcomes result. As with social dominance relationships, one way to avoid this is therefore for individuals to avoid competition and focus on cooperative and individualistic goals. When conflict occurs, however, and even when it results in destructive outcomes, one way to reframe the experience is by reconciling and reestablishing cooperative goals that promote more harmonious interactions.

Multilevel Selection

Finally, one of the most controversial developments in contemporary evolutionary theory is multilevel, or "group" selection, originally postulated by Darwin (1871/1998). *Multilevel selection* posits that natural selection works at multiple levels simultaneously and ultimately favors the level with the most advantageous cost-benefit ratio. For example, in species such as bees and ants where individual survival and reproduction depends entirely on the group, multilevel selection favors adaptations that advance the group's interests over individuals, which explains why individual members of these species are so willing to die to protect the hive and colony (Haidt, 2012). In humans, the selective pressure on group- and individual-level characters is quite different, of course, but the same logic holds. When intense intergroup competition occurs, highly cooperative groups will outcompete uncooperative groups, and as a result, the genetic basis for cooperation will become more common in the next generation.

While a comprehensive review of the multilevel selection debate goes beyond the purpose of this article, these examples provide yet another example of the way Deutsch's theorizing accounts for the processes underlying natural selection. That is, cooperation and competition theory allows for the full integration of selective pressure for genes favoring either individual (e.g., selfishness)- or group-level characteristics (e.g., altruism). When individuals' goals are negatively interdependent, then competitive processes favor characteristics that increase the odds of winning and decrease the odds of losing. But when individuals' goals are positively interdependent, as in the case of intergroup competition, then cooperative processes will favor characteristics that increase in-group solidarity.

Summary

In summary, cooperation and competition theory illuminates the mechanisms underlying the different accounts of how cooperation evolved in social species. The nature and evolution of many species revolve around the issues of cooperation and competition, and cooperation and competition theory provides insights into the processes required. To be clear, we do not suggest that Mort's theorizing should replace Darwin's theory of natural selection, as the two theories have different foci. Darwin's theory accounts for the way differences in survival and reproduction yielded changes in the frequency of organism's characteristics over time, while Mort's theorizing accounts for the way the correlation between individual goals yields different interaction patterns and outcomes. Thus, even though both theories describe cooperation and competition, only Mort's cooperation and competition theory operationalizes the dynamics between cooperative and competitive processes. Finally, the multilevel nature of Mort's theorizing (i.e., intrapersonal, interpersonal, intergroup, interorganizational, intercultural, international) extends beyond humans existence to other species as well. Not only do other species cooperate to achieve mutual goals,

there is even reason to believe that homo sapiens gained an evolutionary advantage and survived when we formed a cooperative relationship with dogs and coevolved with them (Hair & Woods, 2013). Deutsch's (1949a) theory would predict the advantages of doing so.

Final Note

In the 1980s and 1990s, two of the authors, David Johnson and Dean Tjosvold, would get together once or twice a year, and spend hours talking about cooperation and competition and conflict theories and our next round of research studies. We would often say "wouldn't it be great if Mort were here for these discussions?" So, in the winter of 1998, David called Mort and asked if he would be interested in coming to Minnesota for two or three days and talking with Dean, David, and Roger about cooperation and competition theory. Much to our amazement, Mort said "yes." And that started what became known as the Social Interdependence Theory Conferences at Silverwind Horse Farm in Minnesota, which lasted from 1998 until 2009. At the theory conferences we followed a procedure Kurt Lewin called "quassel-strippe" (Wandering String). We would start discussing an article an attendee was working on, and then let the conversation wander into various theories, research literatures, current events, and practical implications. The heart of the discussions was Mort's comments and musings. This would go on for three or four days. It was the high point of our year (see Figure 5).

It was very generous for Mort to come to the theory conference for those ten years and to share his expertise with us. At the 2002 theory conference, largely due to the planning by Dean Tjosvold, we gave Mort the Non-substitutability Award. Then as now, we believe there will never be a substitute for Morton Deutsch.

We note with great sadness that Morton Deutsch died on March 13, 2017, at the age of 97. It was a great loss to us and to the world. Mort was a remarkable theorist, a creative and a ground-breaking researcher, and a person deeply committed to world peace. His work has implications for practice in almost every field of human endeavor, across most if not all cultures, and even in explaining the behavior

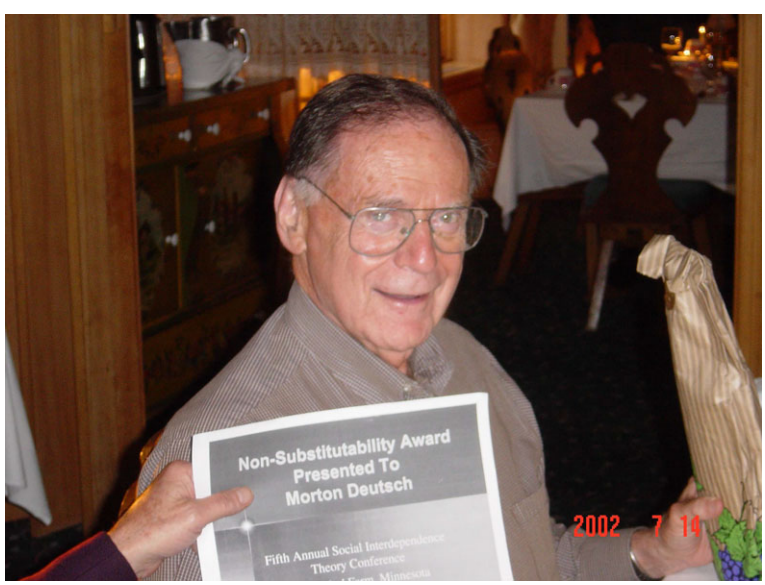

Figure 5. Morton Deutsch receiving the Non-substitutability Award, 2002 Social Interdependence Theory Conference, Silverwind Farm, Shakopee, Minnesota.

of other species. The world has greatly benefited from Mort's work and from Mort as a person. We will always miss him.

References

Axelrod, R. (1984). *The evolution of cooperation*. New York: Basic Books.

Cords, M., & Aureli, F. (2000). Reconciliation and relationship qualities. In F. Aureli & F. B. M. de Waal (Eds.), *Natural conflict resolution* (pp. 177–198). Berkeley, CA: University of California Press.

Darwin, C. (1859/1964). *On the origin of species*. Cambridge: Harvard University Press.

Darwin, C. (1871/1998). *The decent of man and selection in relation to sex*. Amherst, NY: Prometheus Books.

Deutsch, M. (1949a). A theory of cooperation and competition. *Human Relations*, *2*, 129–151. https://doi.org/10.1177/001872674900200204

Deutsch, M. (1949b). An experimental study of the effects of cooperation and competition upon group process. *Human Relations*, *2*, 199–231. https://doi.org/10.1177/001872674900200301

Deutsch, M. (1958). Trust and suspicion. *Journal of Conflict Resolution*, *2*, 265–279. https://doi.org/10.1177/002200275800200401

Deutsch, M. (1962). Cooperation and trust: Some theoretical notes. In M. R. Jones (Ed.), *Nebraska symposium on motivation* (pp. 275–319). Lincoln, NE: University of Nebraska Press.

Deutsch, M. (1973). *The resolution of conflict: Constructive and destructive processes*. New Haven, CT: Yale University Press.

Deutsch, M. (1985). *Distributive justice: A social psychological perspective*. New Haven, CT: Yale University Press.

Deutsch, M. (2000). Justice and conflict. In M. Deutsch & P. T. Coleman (Eds.), *The handbook of conflict resolution: Theory and practice* (pp. 41–64). San Francisco: Jossey-Bass.

Deutsch, M. (2006). A framework for thinking about oppression and its change. *Social Justice Research*, *19*(1), 7–41. https://doi.org/10.1007/s11211-006-9998-3

Deutsch, M., & Krauss, R. M. (1965). *Theories in social psychology*. New York: Basic Books.

Freud, S. (1953–1974). *The Standard Edition of the Complete Psychological Works of Sigmund Freud*. Trans. from the German under the general editorship of James Strachey, in collaboration with Anna Freud, assisted by Alix Strachey, Alan Tyson, and Angela Richards, 24 volumes. London: Hogarth Press and the Institute of Psycho-Analysis.

Haidt, J. (2012). *The righteous mind: Why good people are divided by politics and religion*. New York: Pantheon Books.

Hair, B., & Woods, V. (2013). *The genius of dogs: How dogs are smarter than you think*. New York: Dutton.

Hamilton, W. D. (1964). The genetical evolution of social behavior, parts 1 and 2. *Journal of Theoretical Biology*, *7*, 1–52. https://doi.org/10.1016/0022-5193(64)90038-4

Johnson, D. W. (2003). Social interdependence: The interrelationships among theory, research, and practice. *American Psychologist*, *58*(11), 931–945.

Johnson, D. W., & Johnson, R. T. (1989). *Cooperation and competition: Theory and research*. Edina, MN: Interaction Book Company.

Johnson, D. W., & Johnson, R. T. (2005). New developments in social interdependence theory. *Genetic, Social, and General Psychology Monographs*, *131*(4), 285–358. https://doi.org/10.3200/MONO.131.4.285-358

Johnson, D. W., & Johnson, R. T. (2009). An Educational Psychology Success Story: Social Interdependence Theory and Cooperative Learning. *Educational Researcher*, *38*(5), 365–379. https://doi.org/10.3102/0013189X09339057

Johnson, D. W., & Johnson, R. T. (2015). Theoretical approaches to cooperative learning. In R. Gillies (Ed.), *Collaborative learning: Developments in research and practice* (pp. 17–46). New York: Nova.

Lewin, K. (1935). *A dynamic theory of personality*. New York: McGraw-Hill.

Rawls, J. (1971). *A theory of justice*. Cambridge, MA: Belknap Press of Harvard University Press.

Roseth, C. J. (2018). Children's peacekeeping and peacemaking. In P. Verbeek & B. Peters (Eds.), *Behavioral processes and systems of peace*. New York: Wiley & Sons.

Schino, G. (2000). Beyond the primates: Expanding the reconciliation horizon. In F. Aureli & F. B. M. de Waal (Eds.), *Natural conflict resolution* (pp. 225–242). Berkeley: University of California Press.

Sherif, M., Harvey, O. J., White, B. J., Hood, W. R., & Sherif, C. W. (1961). *Intergroup conflict and co-operation: The robbers cave experiment*. Norman, OK: University of Oklahoma Book Exchange.

Tjosvold, D., Wong, A. S. H., & Chen, N. Y. F. (2014). Constructively managing conflicts in organizations. *Annual Review of Organizational Psychology and Organizational Behavior*, *1*, 545–568. https://doi.org/10.1146/annurev-orgpsych-031413-091306

Tjosvold, D., Wong, A. S. H., Chen, N. Y., & Li, W. (2012). Theory of cooperation and competition in China: Accomplishments and challenges. In X. Huang & M. H. Bond (Eds.), *Handbook of Chinese organizational behavior: Integrating theory, research, and practice* (pp. 209–235). Cheltenham, UK: Edward Elgar.

de Waal, F. B. M. (1986). The integration of dominance and social bonding in primates. *Quarterly Review of Biology*, *61*, 459–479.

de Waal, F. B. M. (2000). The first kiss. In F. Aureli & F. B. M. de Waal (Eds.), *Natural conflict resolution* (pp. 13–33). Berkeley: University of California Press.

Wong, A. S. H., Tjosvold, D., & Chen, N. Y. F. (2010). Managing outsourcing to develop business: Goal interdependence for sharing effective business practices in China. *Human Relations*, *63*, 1563–1586. https://doi.org/10.1177/0018726710362124

Wong, A. S. H., Wei, L., & Tjosvold, D. (2015). Business confidence in government regulators: Cooperative goals and confirmation of face in China. *International Journal of Conflict Management*, *26*(3), 268–287. https://doi.org/10.1108/IJCMA-06-2013-0049

Wright, Q., Evan, W. M., & Deutsch, M. (1962). *Preventing world war III: Some proposals*. New York, NY: Simon and Schuster.

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