

INTERDEPENDENCE THEORY

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One of the classic theories in the social and behavioral sciences is interdependence theory, originally developed by John Thibaut and Harold Kelley (1959). Over the past decades, this theory has been extended, first by Kelley and Thibaut (1978) and then by others (e.g., Kelley et al., 2003), into a comprehensive theory of social interaction. In this chapter, we provide a history and overview of interdependence theory and discuss the primary features of the theory, including (a) the principle of structure (the situation); (b) the principle of transformation, or what people make of the situation; (c) the principle of interaction, being determined by the interacting people and (objective features) of the situation; and (d) the principle of adaptation, suggesting that repeated social interaction experiences yield adaptations that are reflected in relatively stable orientations to adopt particular transformations in similar situations. These principles are illustrated by research on topics such as power and dependence, cooperation and conflict, trust and distrust, attribution and self-presentation, and stereotyping and information seeking. We conclude by outlining broader implications of interdependence theory as well as issues for future research, such as understanding the intricate relation between material and personal outcomes or articulating how interdependence theory helps us to understand the social mind.

Human life is inherently social. Much of it unfolds in the context of dyadic or group interactions; numerous human traits have their origins in interpersonal experiences, and the source of many

powerful norms can be identified in the interdependent situations for which those norms are adaptations. One essential feature of social experience is the interdependence of interacting people. As Lewin (1948) noted,

The essence of a group is not the similarity or dissimilarity of its members, but their interdependence. . . . A change in the state of any subpart changes the state of any other subpart. . . . Every move of one member will, relatively speaking, deeply affect the other members, and the state of the group. (pp. 84–88)

Therefore, to fully comprehend human behavior it is essential that one understand the nature and meaning of interpersonal interdependence, defined as the process by which interacting people influence one another's experiences (i.e., the effects individuals have on other people's thoughts, emotions, motives, behavior, and outcomes).

Kurt Lewin is a natural starting point for a variety of themes within social psychology, and interdependence is no exception. In fact, one could claim that he is the founder of an interdependence perspective on social psychology in that he was the first to define groups in terms of interdependence. As we show, his influence on interdependence theory, as originally developed by Thibaut and Kelley (1959), was quite pronounced and enduring. However, other frameworks were also inspired by Lewin's emphasis on group productivity, cooperation, conflict, membership,

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leadership, and the like. A case in point is Deutsch's (1949, 1973) theory of cooperation and competition, in which he conceptualized promotive and contrient interdependence, referring to situations in which there are corresponding interests and conflicting interests, respectively. Also inspired by Lewin's emphasis on the relation between interpersonal and intrapersonal processes, Deutsch (1982) outlined the cognitive, motivational, moral, and action orientations that may be energized by promotive versus contrient interdependence.

The concept of interdependence is very broad, and in principle it could include nearly all classic themes in social psychology, especially those that emphasize social interaction. To illustrate, many domains in the *Handbook of Social Psychology* (S. T. Fiske, Gilbert, & Lindzey, 2010) have a direct and pronounced link with interdependence; examples include the chapters on person perception, emotion, personality in social psychology, evolutionary social psychology, morality, aggression, affiliation, close relationships, justice, status and power, social conflict, intergroup bias, social justice, influence and leadership, group behavior and performance, and cultural psychology. The domains of intrapersonal processes are especially relevant to interdependence, such as person perception, attribution, self-presentation, emotion, and personality processes related to social situations.

Given the breadth of the concept of interdependence, a question arises: Where does one begin? What should be covered, what less so, and what not at all? Clearly, we need a comprehensive review of the concept's history, but we also need a theoretical orientation and we need a focus that gets to the heart of interdependence. In our view, interdependence theory, as developed by Thibaut and Kelley (1959; Kelley & Thibaut, 1978), is the most comprehensive theoretical framework for understanding interdependence and social interaction. This is one reason why we use the constructs and principles of this theory to delineate the primary features of interdependence phenomena, as well as why we use this theory to describe the historical development of the interdependence research domain over the past several decades.

At the outset, we should acknowledge that several theoretical frameworks were developed around the same time, and these frameworks influenced interdependence theory in many ways, just as interdependence theory influenced them. We already alluded to the work of Deutsch, but we should also note that in the domain of social dilemmas alone, goal-expectation theory (Pruitt & Kimmel, 1977), structural goal-expectation theory (Yamagishi, 1986), the individual-group discontinuity model (Insko & Schopler, 1998), various formulations of game theory (e.g., Schelling, 1960/1980), and theories of direct reciprocity (Axelrod, 1984) and indirect reciprocity (Nowak & Sigmund, 2005) are important complementary frameworks.

In other social science domains, there are various complementary frameworks, such as the need-to-belong model (Baumeister & Leary, 1995), the investment model of commitment processes (Rusbult & Agnew, 2010), the model of communal (and exchange) orientations (in close relationships; Clark & Mills, 2012), the empathy-altruism model (explaining altruism and prosocial behavior; Batson, 1998), realistic conflict theory (applied to intergroup processes by Sherif, Harvey, White, Hood, & Sherif, 1961), and the dual-concern model (applied in the domains of negotiation and bargaining; Pruitt & Rubin, 1986). If we go a small step further by bringing to models of the mind and theories of justice the notions of aggression, prosocial behavior, and intergroup relations, it is clear that the concept of interdependence is used beyond the traditional boundaries of social psychology (e.g., markets as studied by economists, social preferences, international relations; for a review, see Gintis, Bowles, Boyd, & Fehr, 2005). The list of such topics and research domains is immense.

For three reasons, we have decided to discuss the domains of interdependence touched on in the tradition of Kelley and Thibaut's (1978) interdependence theory. First, as noted earlier, interdependence theory is one of the most comprehensive theories, with implications for a wide variety of topics. This is so because the theory advances a comprehensive taxonomy of situations from which one can understand a variety of psychological processes, behaviors, and social interactions. Second, interdependence theory

relates comfortably to the many complementary theories and models developed around the same time that it was being developed. Third, interdependence theory is an excellent example of cumulative science; the theory has been continuously refined and extended while retaining the solid foundation provided by Kelley and Thibaut.

INTERDEPENDENCE THEORY

Interdependence theory was originally proposed by Thibaut and Kelley in their 1959 book titled *The Social Psychology of Groups*. Although Kelley and Thibaut referred to their theory as a theory of interdependence in 1978 in their book *Interpersonal Relations: A Theory of Interdependence*, the 1959 Thibaut and Kelley book should be regarded as the birthplace of the theory. The theoretical foundation—especially the notion of interdependence and several other key concepts—was advanced in 1959, and the 1978 book built on it in several important ways without changing the fundamental principles advanced earlier. Interdependence theory grew out of two previous classic theories—exchange theory and game theory—both of which were innovative and important frameworks for understanding interpersonal relations and group dynamics.

In the 1998 edition of the *Handbook of Social Psychology*, in his chapter on the historic development of social psychology, Ned Jones made the following prediction about interdependence theory: “Given the elegance and profundity of this analysis . . . there is good reason that its impact will be durable” (p. 30). Now, more than a decade later, it is clear that interdependence theory has influenced successive generations of scientists for more than 50 years. It is especially interesting to see that it has stimulated research in various domains of social psychology, including research focusing on within-person processes such as affect and cognition, as well as between-person processes such as behavior and interactions in dyads and groups. Since the time of Thibaut and Kelley (1959) and Kelley and Thibaut (1978), interdependence theory and its key concepts and principles have been used to analyze group dynamics, power and dependence, social comparison, conflict and cooperation, attribution

and self-presentation, trust and distrust, emotions, love and commitment, coordination and communication, risk and self-regulation, performance and motivation, social development, and neuroscientific models of social interaction (for reviews, see Kelley et al., 2003; Rusbult & Van Lange, 2003; Van Lange, De Cremer, Van Dijk, & Van Vugt, 2007).

To understand and appreciate the historical development of interdependence theory, it is important to discuss its core concepts and principles. Here, we discuss (a) interdependence structure, its importance, and the key dimensions of interdependence structure; (b) interdependence processes, with a strong emphasis on the concept of transformation; (c) social interaction (which results from the structure of the social situation and the people involved); and (d) adaptation. The principles relevant to structure, processes, interaction, and adaptation are briefly summarized in Exhibit 3.1. After reviewing the core concepts and principles, we provide a brief history of interdependence theory. We then outline several implications of interdependence theory for understanding various social psychological phenomena, such as self-regulation, trust, and intergroup processes. (Some of our sections are based on earlier writings, especially Rusbult & Van Lange, 2003; Van Lange et al., 2007; Van Lange & Rusbult, 2012.)

INTERDEPENDENCE STRUCTURE

Interdependence theory uses two formal tools to represent the outcomes of interactions—matrices and transition lists (Kelley, 1984; Kelley & Thibaut, 1978). The purpose of these formal representations is to specify precisely the character of situation structure—to describe the ways in which people can affect one another’s outcomes during the course of an interaction. To predict what will transpire in an interaction between two people, one must consider (a) what situation they confront (e.g., are their interests at odds, does one hold greater power?); (b) what we call Person A’s needs, thoughts, and motives with respect to this interaction (i.e., which traits or values are activated; how does Person A feel about Person B?); and (c) Person B’s needs, thoughts, and motives with respect to this

Exhibit 3.1

Overview of Interdependence Theory's Basic Assumptions

1. The Principle Of Structure (The Situation)

Understanding the interdependence features of a situation is essential to understanding psychological processes (motives, cognition, and affect), behavior, and social interaction. The features are formalized in a taxonomy of situations, based on degree of dependence, mutuality of dependence, covariation of interests, bases of dependence, temporal structure, and information availability.

2. The Principle Of Transformation (What People Make Of The Situation)

Interaction situations may be subject to transformations by which an individual considers the consequences of his or her own (and other's) behavior in terms of outcomes for self and other and in terms of immediate and future consequences.

Transformation is a psychological process that is guided by interaction goals, which may be accompanied and supported by affective, cognitive, and motivational processes.

3. The Principle Of Interaction (Sabi: $I = F[A, B, S]$)

Interaction is a function of two persons (Persons A and B) and (objective properties) of the Situation. The Situation may activate particular motives, cognitions, and affects in Persons A and B, which ultimately, through their mutual behavioral responses, produce a particular pattern of interaction.

4. The Principle Of Adaptation

Repeated social interactions yield adaptations that are reflected in relatively stable orientations to adopt particular transformations. These adaptations are probabilistic and reflect (a) differences in orientation between people across partners and situations (dispositions), (b) orientations that people adopt to a specific interaction partner (relationship-specific orientations), and (c) rule-based inclinations that are shared by many people within a culture to respond to a particular class of situation in a specific manner (social norms).

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interaction. In the following examples, we replace *Person A* and *Person B* with *John* and *Mary*, two names that have often been used to illustrate the formal logic of interdependence theory.

The precise outcomes of an interaction—for example, the degree to which John and Mary experience it as satisfying—depend on whether the interaction gratifies (vs. frustrates) important needs, such as those for security, belongingness, and exploration (cf. Baumeister & Leary, 1995; S. T. Fiske, 2004; Reis, Collins, & Berscheid, 2000). An interaction yields not only concrete outcomes, or immediate experiences of pleasure versus displeasure, but also symbolic outcomes, or experiences that rest on the broader implications of the interaction (e.g., Rusbult & Van Lange, 2003). For example, if John and Mary disagree about where to dine, yet John suggests Mary's favorite restaurant, Mary not only enjoys the concrete benefits of good food and wine but also enjoys the symbolic pleasure of perceiving that John is responsive to her needs.

By analyzing how each person's possible behaviors would affect each person's outcomes, one can discern the structure of a situation with respect to the degree and type of interdependence, examining (a) actor control—the impact of each person's actions on his or her own outcomes; (b) partner control—the impact of each person's actions on the partner's outcomes; and (c) joint control—the impact of the partners' joint actions on each person's outcomes. By examining, in the interdependence matrix, the across-cell association between outcomes, one can discern covariation of interests, or the extent to which the partners' outcomes are correlated. These features of an interaction define four structural dimensions, and two additional dimensions have been identified more recently (all six are described later; see also Kelley et al., 2003). Most situations are defined by their properties with respect to two or more dimensions. One key advantage of interdependence theory is its ability to outline the interdependence structure of many commonly encountered social situations and to define similarities and differences between those situations. For example, the prisoner's dilemma, hero, and chicken situations (discussed by game theorists) all involve moderate and mutual dependence along with moderately conflicting interests, but they differ in the magnitude of actor control, partner control, and joint control, as well as in their implications for interaction.

All conceivable combinations of the six properties define a very large number of patterns. However, we can identify at least 20 to 25 prototypical situations (Kelley et al., 2003). Everyday situations resemble these abstract patterns, having common interpersonal problems and opportunities. For example, the twists-of-fate situation is one in which each partner, at some point, might unexpectedly find himself or herself in a position of extreme unilateral dependence; this sort of situation is characteristic of health crises and other reversals of fortune. The prisoner's dilemma, however, is a situation in which each person's outcomes are more powerfully influenced by the partner's actions than by his or her own actions. This sort of situation is characteristic of interactions involving mutual sacrifice, trading favors, and free-riding. Everyday situations that share the same abstract pattern have parallel implications for motivation, cognition, and interaction.

Importance of Interdependence Structure

Why should one care about interdependence structure? To begin with, structure in itself reliably influences behavior. For example, situations with structure resembling the threat situation reliably yield demand-withdraw patterns of interaction—demands for change on the part of the lower power partner, met by withdrawal and avoidance on the part of the higher power partner (Holmes & Murray, 1996). Situations with structure resembling the chicken situation reliably yield interactions centering on establishing dominance and sustaining one's reputation (Nisbett & Cohen, 1996). Also, research on behavior in the prisoner's dilemma situation has found that people are more likely to behave cooperatively as the structure of outcomes changes, such that there is less conflict between self's and other's interests (Komorita, Sweeney, & Kravitz, 1980). In short, the structure of situations often directly shapes behavior above and beyond the specific goals and motives of interacting individuals.

Moreover, specific structural patterns present specific sorts of problems and opportunities, and therefore they (a) logically imply the relevance of specific goals and motives and (b) permit the expression of those goals and motives. The

Gibsonian term *affordance* (Gibson, 1977) nicely describes what a situation makes possible or may activate (see Table 3.1, which provides an overview of possible affordances). For example, situations with uncertain information afford misunderstanding and invite reliance on generalized schemas regarding partners and situations; generalized schemas carry less weight when information is more complete. In short, situation structure matters because it is the interpersonal reality within which motives are activated, toward which cognition is oriented, and around which interaction unfolds.

Dimensions of Interdependence Structure

We assume that the structure of interdependence is best described in terms of dimensions representing a continuum with extremes and intermediate values (e.g., low to high levels of dependence, degree of conflicting versus corresponding interest). In theory, this taxonomic scheme allows one to locate any specific situation in this six-dimensional framework. More practically, it is possible to describe situations in terms of their standing (e.g., high vs. low) in these dimensions. So, what constitute the six dimensions of interdependence structure?

Level of dependence. This dimension refers to the degree to which an actor relies on an interaction partner, in that his or her outcomes are influenced by the partner's actions. If Mary can obtain good outcomes irrespective of John's actions (high actor control), she is independent; she is dependent to the extent that John can (a) unilaterally determine her pleasure versus displeasure (partner control) or (b), in combination with Mary's actions, determine her pleasure versus displeasure (joint control). Increasing dependence tends to cause increased attention to situations and partners, more careful and differentiated cognitive activity (e.g., deep processing rather than shallow processing, tendencies toward information seeking), and perseverance in interaction (e.g., S. T. Fiske, 1993; Rusbult, 1983). As noted in Table 3.1, dependence affords thoughts and motives centering on comfort versus discomfort with dependence and independence. For example, high-dependence situations will activate Mary's trait-based reluctance to rely on others, her discomfort

with dependence will strongly shape her behavior, and her discomfort will be particularly evident to others; in low-dependence situations, this trait will be less visible and less relevant for her behavior.

Mutuality of dependence. This dimension refers to whether two people are equally dependent on one another. Nonmutual dependence entails differential power: When Mary is more dependent, John holds greater power. The less dependent partner tends to exert greater control over decisions and resources, whereas the more dependent partner carries the greater burden of interaction costs (sacrifice, accommodation) and is more vulnerable to possible abandonment, and threats and coercion are possible (e.g., Attridge, Berscheid, & Simpson, 1995; Murray, Holmes, & Collins, 2006). Interactions with mutual dependence tend to feel safer and are more stable and affectively serene (less anxiety, guilt). Situations with nonmutual dependence afford the expression of comfort rather than discomfort with another having control over one's outcomes (e.g., feelings of vulnerability on the part of the dependent partner) along with comfort versus discomfort with one's having control over the other's outcomes (e.g., feelings of responsibility; see Table 3.1). For example, unilateral dependence will activate John's insecurity, and his insecurity will powerfully shape his behavior and be visible to others; in mutual dependence situations, his insecurity will be less visible and less relevant to predicting his behavior.

Basis of dependence. This dimension refers to the ways in which partners influence each other's outcomes—the relative importance of partner versus joint control as a source of dependence. With partner control, the actor's outcomes rest in the partner's hands, so interaction may involve promises or threats as well as reliance on moral norms (“this is how decent people behave”); common interaction patterns may include unilateral action (when partner control is nonmutual) or tit-for-tat or turn-taking (when partner control is mutual; e.g., Clark, Dubash, & Mills, 1998; A. P. Fiske, 1992). In contrast, joint control entails contingency-based coordination of action, such that ability-relevant traits become more important, including intelligence, initiative taking, and strategic skills; rules

of conventional behavior carry more weight than moral norms (“This is the normal way to behave”; e.g., Turiel, 1983). That is, joint control often calls for coordination (e.g., in traffic), but coordination is sometimes quite challenging for dyads and especially for larger groups. A case in point is the productivity loss resulting from suboptimal coordination during brainstorming sessions (e.g., Stroebe & Diehl, 1994). The basis-of-dependence dimension affords the expression of dominance (vs. submissiveness) and assertiveness (vs. passivity), as well as the use of ability and skills such as social intelligence (see Table 3.1).

Covariation of interests. This dimension concerns whether partners' outcomes correspond or conflict—whether partners' joint activities yield similarly gratifying outcomes for John and Mary. Covariation ranges from perfectly corresponding patterns (coordination) through mixed-motive patterns to perfectly conflicting patterns (zero-sum). Given corresponding interests, interaction is easy: John and Mary simply pursue their own interests, simultaneously producing good outcomes for both. In contrast, situations with conflicting interests tend to generate negative cognitions and emotions (greed, fear) and yield more active and differentiated information-seeking and self-presentation efforts (“Can Mary be trusted?”; e.g., Van Lange, Rusbult, et al., 1997). Situations that arouse conflicting interests afford the expression of cooperation versus competition and trust versus distrust (see Table 3.1). In such situations, John may demonstrate his prosocial motives as well as his trust in Mary. This dimension was noticed independently by Deutsch (1949, 1973), who used the terms *promotive* and *conrrient interdependence*.

Temporal structure. Temporal structure is the fifth important structural dimension, one that highlights dynamic and sequential processes. As a result of interaction, certain subsequent behaviors, outcomes, or situations may be made available, and others may be eliminated. John and Mary may be passively moved from one situation to another, or they may be active agents in seeking such movement. Extended situations involve a series of steps before reaching a goal (e.g., investments leading

TABLE 3.1

Six Dimensions of Situational Structure and Their Affordances

Situation dimension	Relevant motives
1. Level of dependence	Comfort versus discomfort with dependence Comfort versus discomfort with independence
2. Mutuality of dependence	Comfort versus discomfort with vulnerability (as dependent) Comfort versus discomfort with responsibility (as power holder)
3. Basis of dependence	Dominance (leading) versus submissiveness (following) Assertiveness versus passivity
4. Covariation of interests	Prosocial versus self-interested motives (rules for self) Trust versus distrust of partner motives (expectations about others)
5. Temporal structure	Dependability versus unreliability Loyalty versus disloyalty
6. Information availability	Openness versus need for certainty Optimism versus pessimism

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to a desirable outcome). *Situation selection* refers to movement from one situation to another, bringing partners to a new situation that differs from the prior situation in terms of behavioral options or outcomes. For example, Mary may seek situations entailing less interdependence, or John may confront the juncture between a present relationship and an alternative relationship by derogating tempting alternatives (e.g., Johnson & Rusbult, 1989; Miller, 1997). Temporally extended situations afford the expression of self-control, delay of gratification, and the inclination to stick with it, raising the issues of dependability versus unreliability and loyalty versus disloyalty (e.g., Balliet, Li, & Joireman, 2011; Mischel, 2012; Rusbult, Verette, Whitney, Slovik, & Lipkus, 1991; see Table 3.1).

Information availability. The final structural dimension concerns information availability: Do John and Mary possess certain versus uncertain information about (a) the impact of each of their actions on both partners' outcomes; (b) the goals and motives guiding each person's actions; and (c) the opportunities that will be made available (or eliminated) as a consequence of their actions? Certain information is critical in novel or risky situations and in interactions with unfamiliar partners. Accordingly, partners engage in a good deal of information exchange during the course of interaction,

engaging in attributional activity to understand one another and the situation (e.g., Collins & Miller, 1994). People may also use representations of prior interaction partners to fill in the informational gaps in interactions with new partners, or they may develop frozen expectations that reliably color their perceptions of situations and partners (e.g., Andersen & Chen, 2002; Holmes, 2000). For example, people may generally rely on the belief that most people are (rationally) self-interested, which may in turn help them to fill in the blanks when faced with incomplete information about another person's actions (Vuolevi & Van Lange, 2010). As another example, people who are avoidant with respect to attachment may perceive a wide range of situations as risky, anticipate that partners are likely to be unresponsive, and readily forecast problematic interactions. Thus, uncertain information affords, among other things, the expression of openness versus a need for certainty, as well as optimism versus pessimism (see Table 3.1).

Recall that interaction, which can be represented with the equation $I = f(S, A, B)$, is shaped not only by interdependence structure (S), but also by partners' needs, thoughts, and motives in relation to one another (A and B) in the context of the situation in which their interaction unfolds. Thus, we must add to our structural analysis a complementary analysis of how John and Mary react to the situations they

encounter. How do they construe specific situations? How do they respond on the basis of considerations other than tangible self-interest? What role do mental events and habits play in shaping this process, and how do partners seek to understand and predict one another? How do people develop relatively stable tendencies to react to specific situations in specific ways?

INTERDEPENDENCE PROCESSES: TRANSFORMATION

To describe how situation structure affects motivation, interdependence theory distinguishes between (a) the given situation—preferences based on self-interest (the “virtual structure” of a situation)—and (b) the effective situation—preferences based on broader considerations, including concern for the partner’s interests, long-term goals, or strategic considerations (Kelley & Thibaut, 1978; Van Lange & Joireman, 2008). Psychological transformation refers to the shift in motivation from given to effective preferences. People typically behave on the basis of transformed preferences—considerations other than immediate self-interest. However, they sometimes behave on the basis of given preferences; this is likely in simple situations for which no broader considerations are relevant, when people lack the motivation or ability to take broader considerations into account, or in situations involving time pressure or constrained cognitive capacity (Finkel & Rusbult, 2008).

Transformations are often conceptualized as decision rules that a person (often implicitly) adopts during interactions (Kelley et al., 2003; Murray & Holmes, 2009; Van Lange et al., 2007). People may follow rules that involve sequential or temporal considerations, such as waiting to see how the partner behaves or adopting strategies such as tit-for-tat or turn-taking. Other rules reflect differential concern for one’s own and a partner’s outcomes, including altruism, which maximizes the partner’s outcomes; cooperation, which maximizes combined outcomes; competition, which maximizes the relative difference between one’s own and one’s partner’s outcomes; and individualism, which maximizes one’s own outcomes irrespective of one’s partner’s outcomes.

Transformation is particularly likely to occur when a given situation structure dictates one kind of behavior, but personal traits or values dictate another kind. When people act on the basis of transformed preferences, it is possible to discern their personal traits and motives. For example, when Mary helps John with yard work rather than going out with her friends, she communicates concern for his welfare. The transformation process is thus the point at which the rubber meets the road, or the point at which intrapersonal processes—cognition, affect, and motivation—operate on specific situations in such a manner as to reveal a partner’s unique self.

Cognition, Affect, and Habit

Human intelligence is clearly social. Cognitively and affectively, people are well prepared to construe the world in terms of interdependence (Rusbult & Van Lange, 2003). Mental events are geared toward discerning what a situation is about, evaluating that structure in terms of one’s own needs and motives, perceiving the partner’s needs and predicting his or her motives, and forecasting implications for future interactions (e.g., Kelley, 1984). Situation structure partially shapes cognition and affect. For example, the prisoner’s dilemma situation entails a choice between benefiting the partner at low cost to oneself and benefiting oneself at substantial cost to the partner. The characteristic blend of fear and greed that is afforded by this situation is an indicator of the essential opportunities and constraints offered by this kind of situation.

The transformation process is often driven by the thoughts and feelings that a situation affords. For example, Mary is likely to exhibit a self-centered or antisocial transformation when she experiences greedy thoughts and desires (“It’d be nice to take a free ride”) or feels fearful about John’s motives (“Will he exploit me?”). Cognition and emotion are also shaped by distal causes—by the values, goals, and dispositions that are afforded by the situation. For example, Mary’s reaction to situations with conflicting interests will be colored by the value she places on fairness, loyalty, or communal norms (vs. greed), as well as by whether she trusts John (or, alternatively, fears him). Thus, the mental

events that underlie transformations are adapted to situation structure and take forms that are relevant to that structure.

At the same time, the transformation process does not necessarily rest on extensive mental activity. As a consequence of adaptation to repeatedly encountered patterns, people develop habitual tendencies to react to specific situations in specific ways, such that transformation often transpires with little or no conscious thought (e.g., Agnew, Van Lange, Rusbult, & Langston, 1998; Balliet, Li, & Joireman, 2011; Perunovic & Holmes, 2008). For example, after repeated interactions in situations with a prisoner's dilemma structure, John and Mary may automatically exhibit mutual cooperation, with little or no cognition or affect. Mediation by explicit conscious cognitive processes is more probable in novel situations with unknown implications, in risky situations with the potential for harm, and in interactions with unfamiliar partners.

Communication, Attribution, and Self-Presentation

During the course of an interaction, partners convey their goals, values, and dispositions through both direct and indirect means. Communication entails self-presentation on the part of one person and attribution on the part of the other. As noted earlier, the material for self-presentation and attribution resides in the disparity between the given and effective situations, because deviations from self-interested behavior reveal an actor's goals and motives (e.g., Balliet, Mulder, & Van Lange, 2011; Rusbult & Van Lange, 2003). Thus, the ability to communicate self-relevant information is limited by interdependence structure—that is, specific situations afford the display of specific motives. For example, it is difficult for people to convey trustworthiness (or to discern it) in situations with correspondent interests, because in these situations, trustworthy behavior aligns with self-interested behavior (see Balliet & Van Lange, 2012; Simpson, 2007a).

People engage in attributional activity to understand the implications of a partner's actions, seeking to predict future behavior and to explain prior behavior in terms of situation structure or underlying dispositions. Expectations are not particularly

accurate in interactions with new partners because they are necessarily based on probabilistic assumptions about how the average person would react in a given situation. In longer term relationships, expectations can also be based on knowledge of how a partner has behaved in a variety of situations. The term *self-presentation* refers to people's attempts to communicate their motives and dispositions to one another. Of course, self-presentation may sometimes be geared toward concealing one's true preferences and motives. Moreover, given that people do not always hold complete information about their partners' given outcomes, they may sometimes mistakenly assume that a partner's behavior reflects situation structure rather than psychological transformation. For example, Mary's loyalty or sacrifice may not be visible if John fails to recognize the costs she incurred.

INTERACTION = $f(S, A, B)$

Social interaction is at the heart of interdependence theory, but what precisely does social interaction mean in the theory? First, it means that interactions are defined in terms of people and situations (Kelley et al., 2003). Specifically, for a dyad, social interaction is defined as $\text{Interaction} = f(S, A, B)$, meaning that social interaction should be understood as a function of the situation, Person A, and Person B. This model is sometimes referred to as SABI, whereby situation, Person A, and Person B produce interaction.

A key component of interaction is the situation, which affords various orientations that may underlie and explain individual behavior in that situation. For example, a social dilemma focuses on the conflict between self-interest and collective interest, thereby affording selfishness (the direct pursuit of one's own outcomes) and cooperation (the pursuit of collective outcomes). More important, however, by examining interactions, one also sees that orientations such as equality become important. For example, equality as an instance of fairness may become important because of influences regarding the self, or Person A (e.g., I hold a prosocial orientation and thus wish to pursue equality in outcomes); because of partner influences (e.g., Partner B holds a

competitive orientation by which equality becomes very salient); or because the situation involves inequality (e.g., one partner has greater outcomes than the other when the interaction begins). Similarly, altruism can be activated by the self, the partner, and the situation; because there is interindividual variability in empathy (e.g., dispositional empathy; Davis, 1983), empathy may be more strongly activated by some partners than by others (e.g., one's child vs. a stranger), and some situations are especially likely to call for empathy (e.g., when a partner suffers from a bad event and is strongly dependent on one's help).

Second, a social interaction analysis is fairly inclusive, in that it allows one to focus on distal and proximal determinants of social interactions. Examples of distal determinants are personality variables (e.g., differences in prosocial, individualistic, and competitive orientations; Van Lange, Otten, et al., 1997), relational variables (e.g., differences in trust in the partner; differences in relational commitment; e.g., Rusbult & Van Lange, 2003), and situational variables (e.g., climates of trust vs. distrust, group size; Dovidio, 1984; Kerr & Tindale, 2004). Examples of proximal mechanisms (which are often both a determinant and a consequence of social interactions) are emotions (e.g., feelings of guilt, feelings of shame) and cognitions (e.g., how the situation is defined, especially in terms of norms and roles; Van Lange et al., 2007). For example, prosocial individuals may believe that others tend to be prosocial, individualistic, or competitive, whereas competitors tend to believe that most or all others are competitive (Kelley & Stahelski 1970). Such beliefs may be rooted in social interaction experiences, with prosocial people often developing interactions involving mutual cooperation or mutual noncooperation and competitors often developing interactions involving mutual noncooperation. The latter experiences confirm their belief that all people are competitive, even though in many cases the competition may have resulted from their own actions, a perfect example of a self-fulfilling prophecy (Kelley & Stahelski 1970). In other words, beliefs can affect interaction outcomes, which can in turn affect beliefs.

Third, a social interaction analysis is also important from the perspective of observation and

learning. Social interactions are largely observable to oneself, to the other, and to third parties who may not be involved (e.g., observers). As such, the manner in which a social interaction unfolds (e.g., two people en route to cooperation vs. two people en route to noncooperation because of one person's lack of cooperation) serves important communicative purposes—for both the interactants and the observers. The interactants may signal their boundaries of cooperation (e.g., by communicating threats and promises) and learn from their actions (e.g., “Next time, I will more carefully examine his responses to my cooperative initiatives”). Observers may learn as well, an example being children copying and learning from interactions between their parents. The point is that social experiences will often provide the basis for the development of a particular personality style. For example, people raised in larger families may be more likely to develop an orientation of equality because the situations they have typically entered were more likely to call for sharing (e.g., they may quickly learn that not sharing is a dysfunctional way to try to solve social dilemmas; Van Lange et al., 1997).

Finally, a social interaction analysis highlights interpersonal orientations, the preferences people have regarding the ways in which outcomes are allocated to themselves and others. At least six important orientations, or decision rules, can be meaningfully distinguished: altruism, cooperation, equality, individualism, competition, and aggression. We do not review them in detail here because they were discussed earlier in this chapter (for a comprehensive review, see Van Lange et al., 2007).

Interdependence theory is one of the few social psychological theories to provide a comprehensive analysis with a strong orientation toward conceptualizing interpersonal structure and processes (Kelley et al., 2003; Kelley & Thibaut, 1978; Thibaut & Kelley, 1959). Moreover, the theory has shown how intrapersonal motivational processes can be traced back to interpersonal structures and processes. Analogous to contemporary physics—in which the relations between particles are as meaningful as the particles themselves—in interdependence theory, between-person relations are as meaningful as the individuals themselves (Rusbult & Van Lange,

2003). Indeed, concepts such as coordination, trust, cooperation, communication, and commitment can be understood only in terms of social interaction, and many of the needs, motives, and processes that receive considerable attention in contemporary social psychology—such as the need to belong, uncertainty management, and self-regulation—are often oriented toward the threats and opportunities of social interaction.

ADAPTATION

When people initially encounter a specific situation, the problems and opportunities inherent in the situation will often be unclear. Hence, Mary may systematically analyze the situation and actively reach a decision about how to behave, or she may simply react on the basis of impulse. Either way, experience is acquired. If her choice yields good outcomes, she will react similarly in future situations with parallel structure; if her choice yields poor outcomes, she will modify her behavior in future situations with parallel structure. Adaptation describes the process by which repeated experiences in situations with similar structure give rise to habitual response tendencies that on average yield good outcomes. Adaptations may be embodied in (a) interpersonal dispositions, (b) relationship-specific motives, or (c) social norms (Rusbult & Van Lange, 2003).

Interpersonal dispositions are actor-specific inclinations to respond to particular classes of situations in a specific manner across diverse partners (Kelley, 1983). Dispositions emerge because over the course of development different people experience different histories with different partners, confronting different sorts of interaction opportunities and problems. As a result of adaptation, John and Mary acquire dispositional tendencies to perceive situations and partners in specific ways, and specific sorts of transformations come to guide their behavior. Thus, the self is the sum of one's adaptations to previous situations and partners (such adaptations are also affected by needs and motives that are biologically based). For example, if John's mother used her power in a benevolent manner, gratifying his childhood needs and serving as a secure base from which he could explore, John will have developed trusting and secure expectations

about dependence (for a review, see Fraley & Shaver, 2000; Mikulincer & Shaver, 2007).

Relationship-specific motives are inclinations to respond to particular classes of situation in a specific manner with a specific partner (Rusbult & Van Lange, 2003). For example, commitment emerges as a result of dependence on a partner, and it is strengthened by satisfaction (John gratifies Mary's most important needs), poor alternatives (Mary's needs could not be gratified independent of her relationship), and high investments (important resources are bound to her relationship). Commitment colors emotional reactions to interaction (feeling affection rather than anger) and gives rise to habits of thought that support sustained involvement (use of plural pronouns; e.g., Agnew et al., 1998). In turn, benevolent thoughts encourage prosocial transformations. For example, strong commitment promotes prosocial acts such as sacrifice, accommodation, and forgiveness (e.g., Finkel, Rusbult, Kumashiro, & Hannon, 2002; Rusbult et al., 1991; Van Lange et al., 1997).

Social norms are rule-based, socially transmitted inclinations to respond to particular classes of situation in a specific manner (Thibaut & Kelley, 1959). For example, most societies develop rules regarding acceptable behavior in specific types of situation; rules of civility and etiquette regulate behavior in such a manner as to yield harmonious interaction. Partners frequently follow agreed-on rules regarding resource allocation, such as equity, equality, or need (Deutsch, 1975). Such rules may govern a wide range of interactions or may be relationship specific (e.g., communal norms in close relationships; Clark et al., 1998; A. P. Fiske, 1992). Norms not only govern behavior but also shape cognition (or lack thereof). For example, in interactions guided by communal norms, partners neither monitor nor encode the extent of each person's (short-term) contributions to the other's welfare.

HISTORICAL DEVELOPMENT OF INTERDEPENDENCE THEORY

Obviously, the history of interdependence theory was strongly affected by a long-standing collaboration (and friendship) between Harold Kelley and John

Thibaut. A broad outline of the history of interdependence theory is provided in Exhibit 3.2, which reveals that the theory is an excellent example of one that made progress thanks to a firm foundation on which others can build and erect bridges to and from other fields and disciplines (Van Lange & Rusbult, 2012). The theory's key assumptions remained largely intact while new principles were added over a period of 50 years.

Kelley and Thibaut (1959)

This initial book was rooted in the theorizing and topical interests of Kurt Lewin (1935, 1936/1966, 1952), who was interested in the scientific study of

individuals in group situations, with a focus on issues such as group productivity, communication, group membership, and cooperation and conflict. Throughout their impressive careers, Kelley and Thibaut were inspired by Lewin's emphasis on the importance of theory, the value of experimentation for clarifying and testing ideas, the interrelatedness of people and environments, and the importance of understanding individuals in group contexts and cultural contexts.

Although the inspiration of Lewin is quite clear in Kelley and Thibaut's 1959 book, what made the book truly exceptional at the time was that it combined insights and principles derived from two

Exhibit 3.2 Brief Historical Overview of Interdependence Theory

1959

Thibaut, J. W., & Kelley, H. H. (1959). *The social psychology of groups*. New York, NY: Wiley.

- provides social exchange analysis of interactions and relationships between individuals in dyads and small groups;
- uses games as a conceptual tool and focuses on the analysis of dependence, power, rewards, costs, needs, and outcomes in exchange relations; and
- introduces new concepts such as comparison level and comparison level of alternatives (CL and CL-alt) to understand relationship satisfaction and stability.

1978

Kelley, H. H., & Thibaut, J. W. (1978). *Interpersonal relations: A theory of interdependence*. New York, NY: Wiley.

- provides a comprehensive analysis of interaction situations in terms of four dimensions: degree of dependence, mutuality of dependence, correspondence of outcomes, and basis of dependence;
- introduces transformation of the given to the effective matrix, thereby formalizing interaction goals broader than immediate self-interest; and
- adopts a functional analysis of transformations, thereby recognizing social learning of transformation rules and their functional value for particular domains of situations.

2003

Kelley, H. H., Holmes, J. W., Kerr, N. L., Reis, H. T., Rusbult, C. E., & Van Lange, P. A. M. (2003). *An atlas of interpersonal situations*. New York, NY: Cambridge.

- provides an overview of 21 basic interaction situations, analyzed in terms of interdependence features, the psychological processes they afford, and the interaction processes they may evoke; and
- extends the taxonomy of situations by adding two additional dimensions to yield six in all, including (a) degree of dependence, (b) mutuality of dependence, (c) basis of dependence, (d) covariation of interest (formerly referred to as correspondence of outcomes), (e) temporal structure, and (f) information availability.

At Present And In The Future

- integrates interdependence theory with principles of evolutionary theory to conceptualize adaptation as a function of situational structure;
- extends taxonomy by considering differences in outcomes: material versus personal;
- extends interdependence theory to include neuroscientific approaches to understanding the social mind; and
- furthers the application of interdependence theory to group processes and relationships between groups.

Note. From *Handbook of the History of Social Psychology* (p. 342), by A. W. Kruglanski and W. Stroebe (Eds.), 2012, London, England: Psychology Press. Copyright 2012 by Taylor & Francis Group. Reprinted with permission.

theories that were very innovative and influential at the time. The 1959 book was inspired by social exchange theory (in particular, Homans, 1950) and by game theory and decision theory (in particular, a highly influential book by Luce & Raiffa, 1957).

Social exchange theory grew out of economics, sociology, and behaviorist psychology and focused on the exchange of goods, both material and nonmaterial, such as approval or prestige. Homan (1950) listed eleven propositions, including one emphasizing that people who get much from others are under pressure to give much to them. This process of influence tends to work out at equilibrium to a balance in the exchanges. Later, Mills and Clark (1982) extended exchange theory by advancing the thesis that people also develop and maintain communal relationships or orientations, whereby they respond to others' needs rather than to the balance of exchange. Nevertheless, the key assumptions of social exchange theory were important and helped social psychologists understand social interactions in dyads and groups. For Thibaut and Kelley at the time, the notion of exchange formed an excellent basis for analyzing the situations in which people might affect each other's outcomes.

Game theory was primarily rooted in computer science, economics, and mathematics. It provided many of the tools—for example, outcome matrices—that Thibaut and Kelley used to analyze social situations and interactions. Outcome matrices are mathematically precise representations of the intricacies of exchanges. They can be used as conceptual tools for analyzing situations in terms of several features, such as the degree of corresponding versus conflicting preferences. Moreover, outcome matrices can be used as empirical tools for the study of human cooperation. The frequently studied prisoner's dilemma is rooted in game theory, as are games that have been more recently developed, such as the ultimate bargaining game, the dictator game, and the trust game—games that have attracted numerous scientists across different disciplines.

Kelley and Thibaut used outcome matrices as empirical tools in their work on coordination, cooperation, competition, and bargaining. An article by Kelley and Stahelski (1970) was a classic contribution that provided evidence for an important social

psychological process—the self-fulfilling prophecy—in the context of a prisoner's dilemma game. It showed that competitors tended to elicit self-centered behaviors from others because they acted on their belief that everybody is selfish; that is, their own selfish behavior provoked selfish behavior in a partner, thereby seeming to support the initial belief about other people's motives. However, Thibaut and Kelley used game theory primarily as a conceptual tool, to conceptualize patterns of exchange and coordination between interaction partners. They thought that outcome matrixes, and especially the ways in which they can be analyzed (in terms of the features of interdependence), provided a powerful representation of interdependence. Also, even though many of their contemporaries had similar interests in the social psychology of groups, there was no formal conceptualization to analyze group situations (Kelley, 1984).

Hence, Thibaut and Kelley (1959) analyzed social interactions in dyads and small groups in terms of patterns of social exchange, thereby using games as the conceptual tool to delineate the patterns of interdependence, such as rewards and costs and power and dependence. They also introduced new concepts such as comparison level, a reference point determined by quality of outcomes evaluated in light of one's global expectations, and comparison level for alternatives, a reference point based on the quality of outcomes relative to those that can be obtained with alternative partners (or without any partner). Their analyses using these two concepts allowed them to distinguish clearly between satisfaction and dependence. This book was a great success and a must-read for any social psychologist at that (or any) time (see Jones, 1998).

Kelley and Thibaut (1978)

Nearly 2 decades after their first book was published, Kelley and Thibaut (1978) modestly expressed the belief that their methods of analysis—in terms of interdependence—might now meet the standards for a genuine theory. Although its origins were captured in the 1959 book, interdependence theory was now formally born. (Kelley and Thibaut were careful scientists who reserved the label of *theory* only for those kinds of conceptual analysis

that would pass stringent tests of scientific rigor—probably defined by them in terms of clear logic and wide breadth of relevance.) In that book, they presented interdependence theory, and it immediately became clear that many years were devoted to very basic theoretical issues.

One decision they faced was whether behavior was primarily based on the given matrix (i.e., on the basis of immediate self-interest) or whether the theory should be extended to include broader considerations. Informed by research conducted during the 1960s and 1970s, they chose the second option and provided a logical framework for a number of fundamental transformations, which they labeled *MaxJoint* (enhancement of joint outcomes), *MinDiff* (minimization of absolute differences in outcomes for self and others), *MaxRel* (maximization of relative advantage over other's outcomes), and the like. These transformations were influenced by the work of Messick and McClintock (e.g., Messick & McClintock, 1968), and many others around the world, who had already provided empirical evidence for some transformations on the basis of research using experimental games as empirical tools. Kelley and Thibaut (1978) also outlined other types of transformation, which are based on people responding to both present contingencies and implications of present behavior for the future. A key difference from the earlier book was that the new one emphasized the value of various transformations. The book was an attempt to answer the question "What do people make of situations?" (see also Kelley et al., 2003).

In the 1978 book, interdependence theory was expanded to encompass (a) a formal analysis of the objective properties of a situation (resulting in a taxonomy of situations); (b) a conceptualization of psychological processes in terms of transformations, including motives, cognitions, and affect (what people make of the situation); and (c) behavior and social interaction resulting from both the objective properties of the situation and what both people made of it. Moreover, they emphasized adaptation and learning as longer term orientations that may grow out of experience. Inspired by the work of Messick and McClintock (1968) and their own research (Kelley & Stahelski, 1970), Kelley and

Thibaut (1978) also suggested that people might differ in their transformational tendencies. These adaptations were later conceptualized in terms of dispositions, relationship-specific motives, and social norms (Rusbult & Van Lange, 2003).

Over time, numerous investigators were inspired by the logic of interdependence theory—its assumptions, reasoning, and focus. Logic is one thing, but the theory also appeared to have considerable breadth. Researchers found it useful in conceptualizing phenomena as diverse as altruism, attribution, coordination, conflict, cooperation, competition, delay of gratification, exchange, investments, fairness, justice, love, power, prosocial behavior, trust, sacrifice, self-presentation, stereotyping, and hostility and aggression in the context of dyads, ongoing relationships (close or not), and groups (small and larger, ongoing or temporary). Also, researchers studying environmental issues, organizational issues, and political issues fruitfully used principles from interdependence theory (for a comprehensive review, see Rusbult & Van Lange, 2003; Van Lange & Joireman, 2008).

Kelley et al. (2003)

In the meantime, it became increasingly clear that people with various topical interests were intrigued by interdependence theory. After a Society of Experimental Social Psychology/European Association of Experimental Social Psychology conference in Washington, DC, in 1995 a group of six people, who worked individually on complementary topics, decided to work together on interdependence theory. This resulted in a 6-year collaboration that resulted in the publication of *An Atlas of Interpersonal Situations* (Kelley et al., 2003). This book extended Kelley and Thibaut (1978) in important ways, perhaps most notably by analyzing 21 situations and adding two dimensions to the four dimensions of interdependence that Kelley and Thibaut had previously identified. The added dimensions were (a) temporal structure and (b) information availability. There is little doubt about the relevance and necessity of these two dimensions, which we informally referred to as *time* and *information*. We now discuss the merits and implications of these two dimensions in turn, with reference to two research topics, persistence and generosity.

TEMPORAL STRUCTURE: THE TIME DIMENSION

Temporal structure is a key feature of interdependence situations and is essential to understanding social interaction. Although time was not strongly conceptualized by interdependence theorists until 2003, it was a key variable in several lines of research. For example, the work of Mischel and colleagues (Mischel, 2011; Mischel, Shoda, & Rodriguez, 1989) on delay of gratification focused on a situation in which people (children) needed to exercise control by resisting the temptation of direct reward to receive larger rewards in the future. In general, investment situations are often ones in which a person needs to accept present costs to build for the future. What is often observed in such situations is that people engage in temporal discounting (devaluing future outcomes) and that it takes effort to forgo short-term interests (Joireman, Balliet, Sprout, Spangenberg, & Schultz, 2008).

Temporal structure has also been considered important in the development of cooperation. For example, it has been noted that people are more likely to cooperate if they know they are going to be interdependent for many interaction situations. In his analysis of the so-called tit-for-tat strategy, the political scientist Axelrod (1984, p. 126) coined the phrase *the shadow of the future* to suggest that people often cooperate because they foresee future rewards for cooperation and future costs or punishments for noncooperation, therefore encouraging a longer term perspective on the immediate situation. Also, game theorists have outlined that although noncooperation is rational in a social dilemma involving a single trial, cooperation is rational in a repeated-interaction social dilemma situation (Rapoport, 1990). Kelley and Thibaut (1978) noted that a concern with long-term self-interest might promote cooperation at the outset of a series of interactions (e.g., sequential transformations). It is therefore not surprising that scientists have distinguished between two temporal orientations, present and future, that seem to predict many behaviors in situations in which short- and long-term interests are at odds (e.g., Joireman, Anderson, & Strathman, 2003; Joireman, Shaffer, Balliet, & Strathman, 2012;

Van Lange, Klapwijk, & Van Munster, 2011). Research on social interactions in the laboratory have often focused on longer term concerns within the scope of a single experimental session, or even multiple sessions over a semester. Yet the time dimension is especially relevant to interactions that involve longer time periods.

An interesting case in point is persistence, for example in jobs or relationships. Traditionally, persistence has been explained by reference to positive affect: People persevere in specific endeavors because they have positive explicit or implicit attitudes about the endeavor; people persevere in specific jobs or relationships because they feel satisfied with them (e.g., Ajzen, 1991; Greenwald, McGhee, & Schwartz, 1998). The affect construct has been operationally defined in terms of satisfaction level, positive attitudes, liking, or attraction. An important challenge to this “feel-good” model of persistence (“So long as it feels good, I’ll stick with it”) is found in situations in which people persevere despite the existence of negative affect. Clearly, people sometimes persevere even though they hold negative attitudes about certain aspects of an endeavor; they sometimes stick with jobs or marriages despite feelings of dissatisfaction. Persistence in an abusive relationship is a particularly telling example: Surely people do not persist because they are delighted with such relationships. Some authors have sought to account for such inexplicable persistence in terms of traits such as low self-esteem or learned helplessness (e.g., Aguilar & Nightingale, 1994; Walker, 2000). That is, persistence is assumed to be an actor effect—people persevere because of something peculiar or unhealthy about themselves.

In contrast, an interdependence analysis explains persistence more broadly, by reference to the nature of an actor’s dependence. To the extent that people are more dependent on their jobs or relationships, they are more likely to persist in them; the greater their dependence on a distal goal, the more likely they are to persist in pursuit of that goal. In relationships, dependence is strengthened by increasing satisfaction (are important needs gratified?) but also by declining alternatives (could important needs be gratified elsewhere?) and increasing investments (are important resources linked to persisting?)

[Rusbult, Coolsen, Kirchner, & Clarke, 2006]). For example, Mary may persevere in an abusive relationship not necessarily because she has low self-esteem or has acquired a pattern of learned helplessness but rather for reasons related to structural dependence—because she is heavily invested in remaining with her partner (e.g., she is married to John or has young children with him) or has poor alternatives (e.g., she has no driver's license or faces poor employment opportunities; Rusbult & Martz, 1995).

Why should scientists favor an interdependence-based analysis of persistence? For one thing, positive affect is not particularly reliable—affect ebbs and flows even in the most satisfying jobs and relationships, making feeling good an insufficient reason to sustain long-term persistence. In addition, actor-based explanations are limited in light of evidence for dependence-based causes of persistence (e.g., Mary may have invested too much to quit). Moreover, interdependence-based explanations imply unique intervention strategies. For example, if one seeks to enhance Mary's freedom to persist versus cease her involvement with John, an actor-based explanation might favor psychotherapy geared toward raising self-esteem or eliminating learned helplessness. In contrast, an interdependence-based explanation might inspire interventions designed to reduce (unilateral) dependence—for example, improving the quality of Mary's economic alternatives through education, driving lessons, or job training. Even in therapy, the focus may be not only on fluctuations in satisfaction but also on the interpersonal causes that might account for it in combination with implications for the future of the relationship. This interdependence-based analysis differs from actor-based approaches in trying to change patterns of dependence and independence rather than trying to change only one or both individuals in the relationship.

INFORMATION AVAILABILITY: THE INFORMATION DIMENSION

Information, especially when it is lacking, is essential for understanding social interaction. Information was addressed by Kelley and Thibaut (1978),

especially in their analysis of self-presentation and attribution. People often want to present themselves favorably (i.e., provide favorable information about themselves) and often realize when they do not (e.g., when their actions harm others). People also want to know what their interaction partners are thinking, wanting, and so on (resulting in information seeking and attributions about the partner's motives and intentions). As explained earlier, these processes often involve noticing differences between the given matrix and the effective matrix (personality, motives, intentions, etc. are revealed in perceived disparities between the given matrix and the effective matrix). However, self-presentation and attribution processes had always been conceptualized (and examined) largely in the context of situations in which people had complete information about (a) one another's preferences (e.g., implicitly assuming that one knows how one's partner's outcomes are influenced when one considers attending a third professional conference within a few months) and (b) whether the outcomes one experiences are always a product of the other's intended actions (e.g., noise, fatigue, and unintended errors can affect another person's actions and outcomes).

It is far more common for people to have incomplete information about others' motives and preferences. One often does not precisely know how much another person enjoys a particular joint activity (e.g., when considering which movie or concert to attend), how much the person hates it when the partner leaves dirty dishes in the kitchen sink, or how much a colleague appreciates a compliment on his or her new scientific paper. Also, external interference and unintended errors are bound to occur in many social interaction situations. For example, when one is waiting for quite some time for a reply to one's e-mail, it may be that the other is either unable (e.g., server breakdown) or unwilling (e.g., gave low priority to the e-mail) to reply, and the differences between these causes are important for the future of the relationship. Similarly, when one arrives late for an appointment, it is often hard to tell whether there were external constraints (e.g., an unforeseen traffic jam) or not. Thus, the addition of information availability to the dimensions of interdependence structure makes interdependence

theory more comprehensive and opens new lines of research.

An interesting case in point is research on the functionality of interpersonal generosity in the prisoner's dilemma. Traditional analyses of situations with this structure have revealed that people enjoy superior outcomes over a long span of interactions if they behave on the basis of *quid pro quo*, or tit-for-tat (Axelrod, 1984): If an interaction partner cooperates, one should also cooperate; if a partner competes, one should also compete. But how effective is tit-for-tat when information is limited—for example, when people are aware of how a partner's behavior affects their own outcomes but are not aware of situational constraints that may have shaped the partner's actions? An interdependence analysis suggests that misunderstanding is often rooted in noise, or discrepancies between intended outcomes and actual outcomes resulting from a partner's unintended errors (Kollock, 1993). For example, when John fails to receive a response to an e-mail message he sent to Mary, it may be because of a network breakdown in Mary's workplace rather than Mary's disregard for his well-being. Noise is ubiquitous in everyday interaction; the external world is not error free (e.g., networks sometimes crash), and people cannot lead error-free lives (e.g., Mary may accidentally delete John's e-mail message in her daily automatic spam-purge).

Given that tit-for-tat entails reciprocating a partner's actual behavior, not his or her intended behavior, responding in kind serves to reinforce and exacerbate accidents. If the accident involves unintended good outcomes, the consequences may be positive. If the accident entails unintended negative outcomes, however, the consequences may be damaging. For example, when Mary's actions cause John to suffer poor outcomes, he may respond with tit-for-tat, enacting a behavior that will cause her to have poor outcomes. In turn—and despite the fact that she did not initially intend to harm John—Mary will react to John's negative behavior with tit-for-tat, causing him to suffer poor outcomes. John and Mary will then enter into a pattern of negative reciprocity, and they may become trapped in an extended and perhaps escalating echo process from which they cannot readily escape.

Indeed, research has confirmed that negative noise has detrimental effects when people follow a strict reciprocity rule: Partners form more negative impressions of one another, and both people suffer poorer outcomes (Van Lange, Ouwerkerk, & Tazelaar, 2002). In contrast, a more generous tit-for-tat-plus-one strategy (giving the partner a bit more than is received from the partner) yields better outcomes—noise does not negatively affect partners' impressions of one another or the outcomes each receives over the course of an extended interaction. Indeed, in the presence of negative noise, a generous strategy yields better outcomes for both people than does tit-for-tat (for more extended evidence, see Klapwijk & Van Lange, 2009). Such findings are reminiscent of the literature on interactions in close relationships, in which partners have been shown to enjoy better outcomes in conflictual interactions when one or both partners accommodate or forgive (e.g., Karremans & Van Lange, 2009; Rusbult et al., 1991).

The societal implications of this interdependence analysis are quite powerful. They suggest concrete advice for people entering new situations at school, in organizations, or wherever else people interact in dyads or small groups. Under circumstances of imperfect information (which are very common), it helps to give people the benefit of the doubt, to reserve judgment, and to be more generous than a tit-for-tat strategy would advise. The research findings on this topic may also be especially relevant to e-mail and other forms of electronic communication because these devices are quite noisy and tend to be less effective than face-to-face communication in generating cooperation (Balliet, 2010).

BROADER RELEVANCE OF INTERDEPENDENCE THEORY

To comprehend the utility of interdependence concepts, it is important to see them in action—to perceive the theoretical, empirical, and societal benefits of these concepts in advancing the understanding of specific psychological phenomena. We suggest that more recent formulations of interdependence theory are especially useful for understanding relationship persistence and stability, as well as interpersonal

generosity. However, the recent formulations of interdependence are also relevant to issues that (a) may seem less obvious from an interdependence perspective, such as understanding goal pursuit; (b) may be somewhat controversial, such as the origins of trust; or (c) may have been overlooked in past research.

Understanding Goal Pursuit

Goals are end states that give direction to behavior, either as overarching life plans or as aims of simple everyday endeavors. Traditional models of goal pursuit have used intrapersonal explanations, examining individual-level processes such as goal plan-directed behavior, self-regulation, or goal-behavior disparities (e.g., Carver & Scheier, 1998; Mischel, 2011). The success of goal pursuit has been argued to rest on actor-level variables such as goals, traits, skills, and motives. Notable approaches in this tradition are regulatory focus and regulatory fit theories (Higgins, 2012), which suggest that people are more likely to achieve goals when they approach them in a manner that fits their regulatory orientation; that is, when they approach promotion or ideal-self goals to accomplish something in an eager manner and approach prevention or ought-self goals to remain safe from a threat in a vigilant manner.

An interdependence analysis shares some of these assumptions but extends them in interesting directions. Research has indicated that, in ongoing relationships, people enjoy greater movement toward their ideal selves not only when (a) they themselves possess a strong promotion orientation (actor control) but also when (b) their partners possess a strong promotion orientation (partner control). (Corresponding negative associations are evident for a prevention orientation; Righetti, Rusbult, & Finkenauer, 2010.) Indeed, partners with a strong promotion orientation support an actor's movement toward his or her ideal self because they more reliably elicit key components of the actor's ideal-related eagerness. Recent work has also demonstrated benefits for goal achievement deriving from a form of interpersonal regulatory fit: Above and beyond actor and partner effects, there is evidence for a joint control effect, such that actor-partner commonality in promotion orientation

favors each person's movement toward goals (Righetti, Finkenauer, & Rusbult, 2011). Thus, the fact that goal pursuit and attainment are powerfully and reliably influenced by interdependence processes suggests that there is much to recommend an interdependence analysis of goal pursuit. Interdependence matters.

Understanding Trust

Our second example illustrates an important interdependence assertion: A sophisticated understanding of human behavior frequently involves analyzing processes that are temporally extended and entail cross-partner influence. A case in point is trust. Traditional explanations of trust characterize it as a trait-based phenomenon or a frozen expectation—a generalized belief that others will behave in a benevolent rather than a malevolent manner (e.g., Fraley & Shaver, 2000; Rotter, 1980). As noted earlier, individual differences in trust may be viewed as results of different developmental histories: If John experiences others' benevolence in his early interactions, he will develop a generalized tendency to trust others; if John receives insensitive or ruthless treatment, he will develop a generalized tendency not to trust others.

An interdependence analysis shares many of these assumptions (Holmes & Rempel, 1989; Wieselquist, Rusbult, Foster, & Agnew, 1999). Indeed, as a consequence of differing interaction histories, people can develop generalized, trait-based tendencies toward trust or distrust—just as such histories may help to account for differences in prosocial, individualistic, and competitive orientations (Van Lange et al., 1997). Beyond that, however, trust may also be a relationship-specific adaptation. If Mary is reliably responsive to John's needs and is genuinely concerned with his well-being, he will come to trust her; if she is unresponsive and indifferent to his needs, he will not trust her. Thus, trust is as much a partner effect as an actor effect—John's experience of trust in Mary may be as much a reflection of Mary's contemporary behavior as a consequence of his own childhood interactions.

For example, actors become more trusting when they observe a partner engage in pro-relationship acts in diagnostic situations—for example, situations

that arouse conflicting interests (self vs. partner vs. relationship; Holmes & Rempel, 1989; Simpson, 2007b; Van Lange & Rusbult, 2012). As noted earlier, strong commitment is one important cause of costly pro-relationship acts such as accommodation, forgiveness, and sacrifice (e.g., Rusbult et al., 1991; Van Lange et al., 1997). As such, actor trust is the converse of partner commitment—John's trust in Mary is a gauge of the strength of her commitment to him. Moreover, research has revealed that as actors develop greater trust in their partners, they become increasingly dependent on and committed to their relationships, which in turn promotes further pro-relationship acts. These acts are in turn perceived by the partner, thereby strengthening the partner's trust, and so on, in a pattern of mutual cyclical growth (Rusbult & Agnew, 2010; Wieselquist et al., 1999).

We suggest that this interdependence theoretic analysis provides a deeper understanding of trust than trait-oriented approaches. For one thing, it is a powerful predictive model—in accounting for dependence, commitment, pro-relationship acts, and trust, interdependence variables account for substantially more unique variance (more than 30% than do prominent actor-based variables (e.g., attachment style accounts for less than 5% of the variance; Wieselquist et al., 1999). That is, in ongoing relationships, partners' actions are more important than are each person's trait-based, frozen expectations. Second, whereas trait-based explanations place responsibility for present behavior entirely in the hands of the actor, an interdependence-based explanation suggests that contemporary trust phenomena rest in both John's and Mary's hands. Third, the model highlights the fact that trust is not merely in the mind of the perceiver—there is a reality component to trust, in that Mary's actual trustworthiness plays a crucial role in shaping John's trust in her. Fourth, the model is dynamic and truly interpersonal, explaining how each person's motives and actions influence the partner's motives and actions in a dynamic, cyclical process. As such, the model illustrates the interdependence theoretic goal of explaining behavior via an analysis of processes that are temporally extended and entail across-partner influence.

Understanding Intergroup Relations

Most group phenomena are more complex than dyadic phenomena and often too complex for a comprehensive analysis, which is probably why Thibaut and Kelley often did not go beyond the triad. Nevertheless, the logic provided by interdependence theory has considerable potential for analyzing intergroup relations.

One important issue is the analysis of intergroup relations. Sometimes groups face high correspondence of outcomes, in that they both (or all) are pursuing the same goal and need each other in that pursuit. For example, neighboring countries help each other to control the import and use of hard drugs. Under such circumstances, the countries may develop congenial relationships, especially when they hold similar views about the policies that need to be used. In other cases, groups may have moderately corresponding outcomes when pursuing a goal that is quite costly to each group. For example, countries want to control global warming, but they differ in their interest or views as to how much to contribute to the effort. Under such circumstances, groups are faced with social dilemmas (in the intergroup context, a conflict between in-group interest and common, superordinate interests), and they often exhibit considerably less cooperation than do individuals in similar situations (Insko & Schopler, 1998). The primary reasons for this have to do with the affordances of the interdependence situation. For example, some degree of conflicting interest poses a greater challenge to trust (and enhances competitive motivation more) in interactions between groups than in ones between individuals (for meta-analytic reviews, see Balliet & Van Lange, 2012; Wildschut, Pinter, Vevea, Insko, & Schopler, 2003). A good deal of evidence has shown that an interdependence approach complements other approaches (such as social identity and self-categorization approaches) in predictions of intergroup relations.

A strong concern with receiving better outcomes—and not getting worse outcomes—than other groups often conflicts with good outcomes for the collective (de Dreu, 2010). However, competition can sometimes be a powerful means to cooperation. It takes an interdependence approach to analyze the

patterns of interdependence among (a) the individual and his or her group, (b) the individual and the collective, and (c) the group and the collective (see Bornstein, 1992; Halevy, Bornstein, & Sagiv, 2008; Wit & Kerr, 2002). For example, a soldier (i.e., an individual) who fights forcefully often serves the group (i.e., his or her country) but not necessarily the world (i.e., the entire collective). In such multi-layered social dilemmas, competition can be quite beneficial. When there are two (or more) well-defined groups making up the entire collective, competition between the groups can sometimes benefit the entire collective. The competition should deal with a broadly desired goal. For example, the Netherlands has a contest between cities for the title “Cleanest City.” As another example, two departments at a university may do better (yielding greater research output and enhanced teaching) if the university provides extra resources only for excellent departments. Indeed, organizations often use competition as a means to promote better outcomes at the organizational level.

FUTURE ISSUES IN INTERDEPENDENCE THEORY

The utility of interdependence theory goes beyond the illustrations we have discussed. Moreover, certain topics may well become important themes in the future development of interdependence theory.

Understanding Situation Selection

The typology of situations proffered by interdependence theory should be used in classic domains of personality psychology, such as situation selection and Person \times Situation interactions (cf. Mischel & Shoda, 1995; Snyder & Cantor, 1998). We can illustrate this point using the example of situation selection. Clearly, life entails more than simply responding to the discrete situations with which one is confronted. Interactions and relationships unfold through situation selection—people change the structure of existing situations and choose to enter new situations. Situation selection brings the actor, the partner, or the pair (or even an entire group) to a situation that differs from the previous situation in terms of outcomes, behavioral options, or both. For

example, deciding whether to attend a conference, to sit close or not so close to an interaction partner, to quit working on a project, or to change the conversation topic illustrates situation selection.

The concept of situation selection has received relatively little attention in psychology. Although classic writings by Lewin (1935, 1936/1966) and Festinger (1950) included concepts such as movement and locomotion, those theorists focused primarily on movement and change within the context of a specific situation rather than movement among situations. Situation selection has received somewhat greater attention over the past few decades (e.g., Buss, 1987; Mischel, 2004; Snyder & Cantor, 1998), but contemporary approaches are mute with respect to the sorts of situations that people select. Given that interdependence theory offers a well-articulated taxonomy of situations, it can help to understand and predict the types of situations that people are likely to select.

For example—and relevant to the dependence dimension of interdependence structure—people may sometimes engage in situation selection geared toward modifying dependence, either reducing dependence (e.g., maximizing one’s personal income) or enhancing dependence (e.g., making eye contact to signal interest). For example, depending on their levels of attachment security or insecurity, people may ask for support from a partner or not and spontaneously provide support or not (e.g., Simpson, Rholes, & Nelligan, 1992). Needs, thoughts, and motives centering on independence, vulnerability, and responsibility are likely to explain situation selection involving changes in dependence (see Table 3.1). Relevant to covariation of interests, it seems clear that people often seek to reduce conflict by engaging in situation selection that increases correspondence (e.g., identifying integrative solutions), and people may sometimes seek enhanced conflict of interests (e.g., picking a fight, playing games). Needs, thoughts, and motives centering on trust and prosocial motives are likely to explain situation selection involving changes in covariation of interests. Relevant to the temporal dimension, people may seek to restrict (e.g., “I’m outta here!”) versus extend the duration of their involvement in a specific situation (e.g., long-term investment in a

career), and they may likewise seek to limit (e.g., abstaining from investment in a relationship) or extend the extent of their involvement with a specific partner (e.g., committing to the relationship for better or for worse). Needs, thoughts, and motives centering on reliability, dependability, and loyalty are likely to explain situation selection involving temporal structure. With respect to the information dimension, people may sometimes seek out or provide information to enhance information certainty (e.g., making oneself clear). People may also seek out or create attributionally ambiguous situations, allowing them to hide important properties of the situation or themselves (e.g., disguising one's intentions or incompetence). Needs, thoughts, and motives centering on openness, flexibility, and optimism are likely to explain situation selection involving changes in information certainty (see Table 3.1).

Thus, it is one thing to recognize that people are not slaves of situational forces, that they select and modify situations in explicit or subtle ways. It is quite another thing to predict the character of situation selection. Interdependence theory provides insight in this respect, in that the dimensions underlying situations should reliably activate and afford specific sorts of goals and motives. Situation selection is often functional, in that it helps to gratify specific needs or promotes long-term outcomes (Snyder & Cantor, 1998). Of course, situation selection may also initiate or sustain self-defeating processes. For example, shy children may avoid interaction, which in turn may limit their opportunities for overcoming shyness. The interdependence theory typology of situations can be used to extend predictive specificity in classic psychological domains, including not only the problem of specificity in predicting how traits relate to situation selection but also specificity in predicting Person \times Situation interactions (cf. Mischel & Shoda, 1995; Snyder & Cantor, 1998). As such, an interdependence theoretic analysis can advance precise predictions about the inextricable link between people and situations.

Understanding Material Versus Personal Outcomes

Interdependence theory focuses on outcomes as the primary concept that shapes patterns of

interdependence. Indeed, outcomes are exceptionally useful in delineating the specific properties of interdependence—that is, the situation (the structure) to which two or more people adapt. Also, interdependence theory has used outcomes to define the ways in which people adapt to patterns of interdependence. For example, transformations such as maximization of joint outcomes, equality in outcomes, and the like are all transformation of outcomes. Although it is reasonable that much of human motivation and adaptation is influenced by outcomes in a general sense, we suggest that it is theoretically enriching to distinguish between material outcomes and personal outcomes. Material outcomes are results of actions and interactions that have a high degree of universality and often reflect the high degree of similarity between people: Most of them appreciate money, free time, or activities they consider enjoyable (a particular movie) and so on, and such material outcomes are often translated by society into monetary value (e.g., income decline for a day not working). Personal outcomes are results of actions and interactions that are more particularistic to the self and often reflect some degree of dissimilarity between people; for example, people may differ in their desires for social approval, status, and positive reputation.

The general distinction between material and personal outcomes is rooted in the classic work of Foa and Foa (1980) and is worth emphasizing for a variety of reasons. First, differences between material and personal outcomes underlie transformations. For example, people behave more cooperatively toward others if the other's outcomes are displayed in self-related emotions (e.g., facial expressions that systematically differ in terms of sadness vs. happiness) rather than monetary values (Grzelak, Poppe, Czwartosz, & Nowak, 1988). Also, interpersonal harm in the form of personal outcomes (e.g., insulting one's child in response to bad behavior) may often be considered more psychologically aversive or more morally inappropriate than interpersonal harm in the form of material outcomes (e.g., being given less allowance in response to bad behavior). In the context of groups, people pursue good outcomes for themselves but are often willing to forgo such material outcomes if they can gain in

reputation (an outcome that is particularistic to the self). For example, reputation as a cooperative member increases one's status in a group, which is essential for understanding why people often keep track of one another's behavior and translate it into reputation and why patterns of cooperation develop and persist even in fairly sizable groups (Nowak & Sigmund, 2005). Generally speaking, the distinction between material and personal outcomes is essential because it underlies transformations, seems intimately connected to cognition and affect, and resonates well with evolutionary approaches to human cooperation, which distinguish between (material) outcomes and reputation.

Understanding the Social Mind

We suggest that interdependence theory should be exceedingly helpful in understanding when and why particular neurological networks, hormonal responses, and complementary physiological responses are activated. These biological responses will often be adaptive, given the qualities of both people and the situation—that is, when viewed in terms of the SABI model discussed earlier. For example, on the observer's side, responses related to anger are probably best understood when carefully analyzing another person's violation of a norm in situations in which people are likely to have somewhat conflicting preferences (e.g., Singer et al., 2006; Yamagishi et al., 2009). It is especially striking that people with prosocial orientations tend to react very automatically to a violation of equality, revealing activation in the amygdala (Haruno & Frith, 2010). Such findings provide neuroscientific evidence in support of the integrative model approach to relationships, which states that a prosocial orientation involves not only the tendency to enhance joint outcomes but also the tendency to enhance equality of outcomes (Van Lange, 1999). These differences in turn might account for the finding that prosocial individuals are more likely to vote for liberal, left-wing political parties than individualists and competitors, who are more likely to vote for conservative, right-wing political parties (Van Lange, Bekkers, Chirumbolo, & Leone, 2012). On the actor's side, feelings of guilt might be evoked in situations in which an actor violates such norms

(e.g., Pinter et al., 2007). In a related vein, interdependence theory could be extended to capture emotional responses and affect, especially those that give direction to people's social interactions. Emotions such as empathy, gratitude, or anger are clearly of great interest to understanding the affective underpinnings of motives (such as altruism), human behavior, and social interactions (e.g., Batson, 1998; Van Lange, 2008). Finally, phenomena such as self-regulation (and affect regulation and self-control) in the interpersonal domain will involve inhibition of the temptation to be selfish and the imposition of self-restraint, which can be studied at both behavioral and physiological levels.

Benefits of a Taxonomic Approach: Future Theoretical Developments

A unique and exceptionally important contribution of interdependence theory is the advancement of a taxonomy of situations. Indeed, very few theories in social psychology advance a taxonomy of situations, even though social psychology as a field is strongly concerned with situational influence or influences from the social environment (see also Reis, 2008). We believe that the dimensions of temporal structure and information availability that have recently been added to interdependence theory (Kelley et al., 2003) will prove important to several topics in psychological science and beyond.

First, much research and theory in social psychology focuses on processes in an attempt to understand “system questions,” such as how cognition and affect influence each other and how the mind can be characterized as a dual-process system (implicit and explicit, automatic and controlled, impulsive and reflective, etc.). We suggest that interdependence theory provides a much-needed taxonomy of situations that will help us to understand when (i.e., the situations in which) particular systems are activated. For example, forms of dependence call for trust, especially when there is a conflict of interest, and limited time may set into motion a hot system whereby impulses and gut feelings, rather than systematic thought, drive behavior (Hertel, Neuhof, Theuer, & Kerr, 2000; Kruglanski & Webster, 1996). An excellent case in point is the analysis of relations between the powerful and the

powerless in organizations (S. T. Fiske, 1993). Because the latter are strongly dependent on the former, it becomes important to engage in deep, systematic processing to reach accurate conclusions about the motives and attributes of the powerful. In contrast, the powerful are less dependent on the powerless (and there are often many of the latter), so the powerful may use shallower, more heuristic processing when forming impressions of the powerless. Accordingly, the powerful are more likely to fall prey to stereotypic information (S. T. Fiske, 1993).

Second, a taxonomic approach is essential to understanding basic evolutionary issues. Because evolutionary theory focuses on the question of how common human characteristics interact with the social environment, it is essential to have the theoretical tools needed to analyze social situations in terms of their key adaptation-relevant features (e.g., Schaller, Kenrick, & Simpson, 2006; Tooby & Cosmides, 2005; Van Vugt, 2006). Interdependence theory shares some assumptions with evolutionary approaches. One shared assumption is that the social context is fundamental to understanding human behavior (Kelley & Thibaut, 1978). Interdependence theory, by providing a systematic analysis of situations, may contribute to evolutionary theorizing about possible human adaptations for common problems and challenges that arise in social contexts. Specifically, interdependence theory can specify key properties of social situations for which humans have evolved adaptations, such as dependence, conflicting interests, information availability, and so on. Interdependence theory may also provide insights into contingency rules of the if-then form, which are important in contemporary personality theories (Mischel & Shoda, 1999; see Murray & Holmes, 2009; Reis, 2008).

CONCLUSION

Historically, one primary inspiration to the emerging and rapidly growing discipline of social psychology was the realization that it takes both personality and situation to explain human behavior. The well-known formula proposed by Lewin, $B = f(P, E)$ —behavior is a function of person and situation—was

extended by interdependence theorists into a formula for dyadic social interaction (I), which is a function of the situation (S) and the two people in the situation (A, B), hence, $I = f(S, A, B)$. In both formulas, the situation is essential. Therefore, it is surprising that not much theorizing in social psychology is provided an analysis of situations. By providing a taxonomy of interpersonal situations, interdependence theory has served that role from the very beginning and extended it to provide a more comprehensive taxonomy of situations. The addition of new dimensions (temporal structure and information availability) to the well-established ones (dependence, mutuality of dependence, basis of dependence, covariation of interest) should be essential in understanding (a) the motives and skills that are relevant to time in a general sense (e.g., investment, delay of gratification, consideration of future consequences, as well as issues of self-regulation and self-control) and (b) the nature and mechanics of (implicit) theories that people bring to bear on situations when they have limited information. The current taxonomy provided by interdependence theory is quite comprehensive, but future conceptual work may extend it by identifying other features of interdependence (such as the degree to which outcomes are material vs. personal).

For more than 50 years, since Thibaut and Kelley's 1959 book, interdependence theory has been successfully elaborated, tested, and applied to an increasing number of important social phenomena, hence providing a model of cumulative social science. It really has helped theorists and researchers to define situations that interacting partners face or might face (the given interdependence situation), what they make of it (the transformation process) in terms of cognition and emotion, and how the structure and the processes shape human behavior and social interactions. This also helps to explain why interdependence theory has been well appreciated for more than 5 decades, why it has grown, why it is one key example of cumulative science, and why interdependence theory has been used to understand so many issues—group dynamics, power and dependence, social comparison, conflict and cooperation, attribution and self-presentation, trust and distrust, emotions, love and commitment,

coordination and communication, risk and self-regulation, performance and motivation, social development, and neuroscientific models of social interaction. Given its long-standing history of 50 years, many of us are looking forward to the theoretical contributions and implications of interdependence theory over the next 50 years.

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