Running Head: TRANSACTIVE GOAL DYNAMICS

Transactive Goal Dynamics

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Abstract

Transactive Goal Dynamics (TGD) Theory conceptualizes two or more interdependent people as one single self-regulating system. Six tenets describe the nature of goal interdependence, predict its emergence, predict when it will lead to positive goal outcomes during and after the relationship, and predict the consequences for the relationship. Both partners in a TGD system possess and pursue self-oriented, partner-oriented, and system-oriented goals, and all of these goals and pursuits are interdependent. TGD Theory states that relationship partners' goals, pursuit, and outcomes affect each other in a dense network of goal interdependence, ultimately becoming so tightly linked that the two partners are most accurately conceptualized as components within a single self-regulating system.

Keywords: transactive goal dynamics, self-regulation, self-control, motivation, relationships, goals, goal pursuit, teams, interpersonal relations

Transactive Goal Dynamics

In this article we will consider the everyday goal pursuits of average people: Alice, a busy lawyer; Maria, Alice's coworker; and John, Alice's husband. *Transactive Goal Dynamics (TGD) Theory* situates Alice's goals and goal pursuits within her relationships with Maria and with John, exploring the interpersonal dynamics of goal pursuit. It examines how Alice and Maria, and Alice and John, coordinate their action in everyday life to accomplish both their individual and joint aims. The theory characterizes goal pursuers as interdependent relationship partners, embedded in relational ties with others, engaged in action not only oriented toward and driven by themselves, but also oriented toward and driven by others in profound ways.

From a TGD perspective, relationship partners do not make cameo appearances in each other's goal pursuits, but instead, play starring roles. Indeed, the theory depicts relationship partners as exerting such a great deal of mutual influence in each other's goals, pursuits, and outcomes that the partners' self-regulatory systems become inextricably linked, part of a complex and messy web of interdependence. Ultimately, we suggest that relationship partners are best conceptualized not as mostly independent goal-pursuers who occasionally influence each other, but instead, as interdependent sub-parts of one self-regulating system. This article seeks to explain and predict the dynamics of goal pursuit within these systems—that is, within relationships with family members, romantic partners, coworkers, and friends.

Self-Regulation's Social Side

Self-regulation, the study of psychological and behavioral processes that move people toward desired end-states and away from undesired end-states, encompasses a broad range of phenomena, including those relevant to goal setting, pursuit, and monitoring (Carver & Scheier, 1998; Lewin, 1935). Research on self-regulation has identified a diverse set of factors that

promote successful goal pursuit. For example, people are especially likely to succeed when they: (a) set clear goals or plans for action (Carver & Scheier, 1998; Gollwitzer, 1999; Gollwitzer, Fujita, & Oettingen, 2004), (b) pursue a goal with a means that fits their preferred self-regulatory orientation (Higgins, 2000), (c) feel confident in their ability to achieve the goal (Bandura, 1977), (d) believe that ability is malleable rather than fixed (Dweck & Leggett, 1988), (e) pursue a goal in the same psychological state present at the time they set the goal (Loewenstein, 1996), (f) distract themselves from temptations (Mischel, Shoda, & Rodriguez, 1989), (g) automatically, upon encountering a temptation, bring to mind the goal that would be violated by succumbing to that temptation (Fishbach, Friedman, & Kruglanski, 2003), (h) encounter environmental cues that point toward the goal (Bargh et al., 2001; Chartrand & Bargh, 1996), (i) set specific and challenging goals (Locke & Latham, 1990), and (j) possess adequate resources (Baumeister, Bratslavsky, Muraven, & Tice, 1998; Bull, Espy, & Wiebe, 2008).

This selective list of influential findings demonstrates the broad and varied nature of the phenomena elucidated by self-regulation research. It also illustrates the understandable emphasis of self-regulation research on the individual goal pursuer. Historically, the great majority of empirical papers on goal pursuit focused on intrapersonal processes. However, a growing number of findings suggest the utility of a complementary approach to understanding self-regulation—one that emphasizes social processes (Aarts, Gollwitzer, & Hassin, 2004; Ackerman, Goldstein, Shapiro, & Bargh, 2009; Andersen, Reznik, & Manzella, 1996; Baumeister, DeWall, Ciarocco, & Twenge, 2005; Carr & Walton, 2014; Cavallo, Fitzsimons, & Holmes, 2009; 2010; Cavallo et al., 2012; Coan & Sbarra, 2015; Dewall, Baumeister, & Vohs, 2008; Feeney, 2004, 2007; Finkel et al., 2006; Fitzsimons & Bargh, 2003; Fitzsimons & Finkel, 2010, 2011; Gollwitzer, Sheeran, Michalski, & Seifert, 2009; Gunia, Sivanathan, & Galinsky, 2009; Impett et

al., 2010; Karremans, Verwijmerin, Pronk, & Reitsma, 2009; Lockwood, Jordan, & Kunda, 2002; Loersch, Aarts, Payne, & Jefferis, 2008; McCulloch, Fitzsimons, Chua, & Albarracin, 2011; Moretti & Higgins, 1999; Peetz & Kammrath, 2011; Richeson & Shelton, 2003; Righetti, Finkenauer, & Rusbult, 2011; Rusbult, Finkel, & Kumashiro, 2009; Ruys & Aarts, 2010; Shea, Davisson, & Fitzsimons, 2013; Tomasello et al., 2005; Uchino, 2004; vanDellen & Baker, 2011; vanDellen & Hoyle, 2010; Usborne, Lydon, & Taylor, 2009; Vohs, Baumeister, & Ciarocco, 2005; Vohs, Finkenauer, & Baumeister, 2011; Walton & Cohen, 2011).

This new wave of empirical findings demonstrates that social factors, in addition to individual ones, can have a profound influence on the attainment of important goals in everyday life. For example, a study of 5,000 overweight participants in a team-based health program found that participants lost more weight when their teammates shared their weight loss goal, and also when their teammates reported greater social influence (Leahey, Kumar, Weinberg, & Wing, 2012). In the academic achievement domain, a randomized controlled trial demonstrated that underrepresented minority students earned a higher GPA over a 3-year period if they completed an intervention targeting their relational belonging within the college community (Walton & Cohen, 2011). In close relationships, spousal reports of confidence better predicted patients' recovery from heart surgery than did patients' own self-efficacy ratings (Rohrbaugh et al., 2004; also see Gere et al., 2014).

The real-life goal outcomes of participants in these studies were undoubtedly affected by intrapersonal processes like self-efficacy and goal setting. However, it is also clear that social and interpersonal processes played a meaningful role in their outcomes. Indeed, a recent meta-analysis of 72,000 individuals found that marital quality produced effects on physical health that had similar effect sizes to established behavioral predictors, like diet and exercise (Robles,

Slatcher, Trombello, & McGinn, 2014). These findings hint at the possibility that social

processes may be just as influential as individual processes when predicting goal outcomes.

Indeed, developmental psychologists have suggested that human goal pursuit is naturally a social

process, demonstrating that even toddlers engage in social forms of goal pursuit such as intuiting

others' goals, stepping in to facilitate pursuit, and using others' action to advance their own goals

(Liszkowski, Carpenter, & Tomasello, 2008; Warneken & Tomasello, 2007).

Theoretical Foundation

TGD Theory relies on conceptualizations of the self as interdependent with social

context, social groups, and interpersonal relationships (e.g., Andersen & Chen, 2002; Aron,

Aron, Tudor, & Nelson, 1991; Baldwin, 1992; Berscheid & Ammazzalorso, 2001; Brewer &

Gardner, 1996; Chen, Boucher, & Tabias, 2006; Cross, Bacon, & Morris, 2000; Gardner,

Gabriel, & Hochschild, 2002; Leary, Tambor, Terdel, & Downs, 1995; Lewin, 1935; Markus &

Kitayama, 1991; Nisbett, Peng, Choi, & Norenzayan, 2001). These models of the *relational*,

interdependent, and *collective self* posit that representations of self and other are linked via a web

of complex mental associations—associations so fundamental that, in many respects, self and

other cannot be meaningfully broken apart into separate components. For example, Agnew and

colleagues stated that committed partners see themselves "less as individuals, and more as part of

a pluralistic self-and-partner-collective" (Agnew, Van Lange, Rusbult, & Langston, 1998, p.

939). Among these theories, Self-Expansion Theory's (Aron & Aron, 1986) emphasis on

motivation has particular relevance to the current theorizing. According to Self-Expansion

Theory, people seek to expand their self-concept to include others' qualities as a route to

acquiring new skills, characteristics, and resources. Thus, interdependence arises from a desire to

grow the self. Berscheid's emotions-in-relationships model is also highly relevant; it argues that

relationships often affect routines, plans, and goals, and that those effects generate emotional reactions (Berscheid, 1983; 1986; Berscheid & Ammazzalorso, 2001).

Research guided by Thibaut and Kelley's (1959) *Interdependence Theory* (Holmes, 2002; Kelley, 1979; Kelley & Thibaut, 1978; Rusbult & Van Lange, 1996, 2003), and related models of interpersonal interdependence (Berscheid, Snyder, & Omoto, 1989; Murray & Holmes, 2009, 2011; Rusbult, 1980), have also emphasized that individual behavior is best understood within the context of interpersonal relationships. Although not explicitly a model of goal pursuit, Interdependence Theory outlines factors that affect the structure of interdependent situations, and the likelihood that individuals will transform their interests to accommodate their partners. The TGD approach is directly inspired by Interdependence Theory's fundamental assumptions about the complex web of links among actors in a social system.

In line with relational self and interdependence theorizing, a large body of empirical research on groups and teams has demonstrated the value of studying interdependence in cognitive processes and performance (Moreland, Argote, & Krishnan, 1996). Constructs such as social loafing, group potency, and collective efficacy all reflect the idea that individual performance is interdependent with broader social contexts (Bandura, 2000; Durham, Knight, & Locke, 1997; Gully, Incalcaterra, Joshi, & Beaubien, 2002; Guzzo & Dickson, 1996; Karau & Williams, 1993; Weldon & Weingart, 1993). For example, research on *transactive memory* (Austin, 2003; Hollingshead, 1998; Liang, Moreland, & Argote, 1995; Wegner, 1987) has demonstrated that close partners pool memories, forming one cross-partner memory system, rather than two interacting memory systems (Wegner, Erber, & Raymond, 1991). The current paper explores the notion that just as two spouses or coworkers can share memory resources, processes, and outcomes, they can also share self-regulatory resources, processes, and outcomes.

In the goal domain, Carver and Scheier (1998) explored the idea of *interdependent feedback loops*, which describes how the outputs of two actors' goal pursuits influence each other. Carver and Scheier (1998) describe the interlocking temperature-regulation processes of a refrigerator, which achieves a low temperature by expelling warmer air into the house, and a furnace, which must then alter its temperature regulation to adapt. Similarly, two people aiming to impress each other must treat each other's output (smiles and frowns) as input—thus, the outputs of one person's goal pursuit are inputs into another person's goal pursuit. A TGD perspective builds on this notion of interdependence among goal pursuing agents.

Introducing TGD Theory

TGD Theory presents a relational perspective on "self-regulation." Rather than conceptualizing a given pair of people as two independent self-regulating agents, the theory identifies the relationship as the regulating unit, with the partners as sub-units in a single system of goal dynamics, in which resources are pooled. (Transactive goal dynamics occur within many relationship types, including groups, but for the sake of simplicity, we emphasize the dyad here.) Following Interdependence Theory (Thibaut & Kelley, 1959), we assume that even in minimally interdependent dyads, a limited set of TGD processes is still relevant; however, most TGD processes are primarily relevant to "close relationships"—those among coworkers, friends, family members, and romantic relationship partners.

Figure 1 provides an overview of the six tenets of the theory, which predict goal and relationship outcomes from the extent and nature of transactive dynamics in the relationship. According to the theory, relationship partners tend to form one unit of self-regulation, a shared constellation of goals, pursuits, and outcomes that we call a *transactive goal system*. Tenet 1 describes the nature of goal interdependence or *transactive density,* a variable that captures the

extent to which dyads have numerous and strong links among members' goals, pursuits, and outcomes. Tenet 2 discusses the antecedents of transactive density. According to Tenet 2, transactive density emerges from partners' opportunity and motivation for goal interdependence.

The remaining four tenets predict the consequences of transactive density for goal and relationship outcomes. According to Tenet 3, transactive density leads to good goal outcomes when goal coordination is strong—that is, when partners make efficient use of their pooled goal-relevant resources by engaging in goal facilitating and efficient action, specializing goal pursuit, and experiencing few goal conflicts. In systems with high density and strong coordination, relationship partners experience *transactive gain*, earning better goal outcomes (on average across goals) as a unit than they would as independent agents, because coordination allows the two to draw efficiently from their shared pool of goal-relevant skills and resources. In systems with high density and weak coordination, in contrast, relationship partners experience *transactive loss*, producing less success as a unit than they would as independent agents.

According to Tenet 4, the tendency to engage in efficient goal coordination is predicted by shared goal representations and partners' relationship orientation. When partners agree on what goals each should pursue, about what means are preferable, and about how much interdependence they desire, they will more successfully integrate their goal pursuits. When partners are dedicated to the relationship, they will also more successfully integrate their pursuits.

According to Tenet 5, these dynamics come together to predict relationship outcomes. Namely, to the extent that partners experience better goal outcomes in this TGD system than they would alone, relationships will persist over time. Finally, according to Tenet 6, transactive density and goal coordination interact to predict goal outcomes after relationships end:

Individuals will suffer poorer goal outcomes after a relationship ends to the extent that their relationship was high in transactive density and goal coordination. Systems that work well provide the most benefit for effective goal pursuit and, thus, partners will be less successful when the relationship ends. Systems that work poorly interfere with effective goal pursuit, and thus, partners will be more successful when the relationship ends.

Tenet 1: Relationship Partners Tend to Form a Shared System of Goal Pursuit

According to Tenet 1, relationship partners' goals and pursuits are so strongly interdependent that they are most accurately characterized as one system. Although both individuals can behave independently of their relationship partners, TGD Theory, following from theories of relational selves (Aron et al., 1991; Baldwin, 1992; Cross et al., 2000), states that the extent and complexity of overlap and interaction among the partners' goal dynamics can be great enough that, in effect, the relationship forms its own system of goal pursuit.

In this section, we outline the nature of the interdependence among goals and how these dynamics play out in everyday goal pursuit. This first tenet is descriptive: It defines and characterizes goal interdependence in relationships and provides a foundation for Tenets 2-6, which predict the emergence, moderators, and consequences of these systems. In short, it aims to answer the question: What is the nature of goal pursuit in TGD systems?

Structure of transactive goal dynamics. As shown in Figure 2, for any TGD system, a given goal or pursuit is defined by three orthogonal variables: (1) who possesses the goal (self, partner, or both), (2) whose outcomes are the target of the goal (self, partner, or both), and (3) who pursues the goal (self, partner, or both). Alice or John (or both) can possess a goal for Alice or John (or both), and either Alice or John (or both) can pursue that goal. All goals and pursuits in a TGD system are captured by these three variables.

Who possesses the goal? The first variable describes who possesses the goal (left vs. right side of Figure 2). In a TGD system, a goal is part of an individual's goal system not only when the individual possesses it, but also when the partner possesses it. If John sets a goal to lose weight, this goal is relevant to Alice because of the extent to which their goal pursuits are intertwined in everyday life. For example, John's weight loss goal may hinder Alice's goal to celebrate her birthday with a decadent meal, and, because it leads the couple to eat at home more often, it may facilitate Alice's goal to improve her cooking skills. (See Tenet 3.) Thus, because of the mutual influence among partners' goals in everyday life, TGD Theory considers the goals of both partners to be relevant to both partners' goal pursuit.

Who is the target of the goal? The second variable describes who is the target of the goal, or to whose end-states the goal applies (left vs. right column in each side of Figure 2). In TGD systems, people not only possess goals for themselves, but also for their partner and for both partners. For example, Alice wants to work longer hours and she wants John to make new friends, and John wants the couple to start a family, he wants Alice to work fewer hours, and he wants himself to lose weight. Given that goals compete and conflict, the goals that people hold for their partners affect the goals they hold for themselves. For example, if Alice's goal for John to make new friends requires her to spend more time socializing, it might interfere with her goal to work longer hours; in contrast, her goal for John to make new friends might facilitate his goal for her to work fewer hours. (See Tenet 3.) As even these simple examples suggest, TGD systems are complex webs of interdependence.

Who pursues the goal? The third variable describes who pursues the goal (top vs. bottom row in Figure 2). In TGD Theory, all goals—regardless of who possesses them and whose outcomes are targeted by them—can be pursued by all partners in the system. Alice can pursue

her goal for John to make new friends (e.g., she can host parties) just as she can pursue her goal

for herself to work longer hours. In addition, Alice can pursue John's goal for her to work fewer

hours (e.g., she can come home early for dinner one night) just as she can pursue John's goal for

himself to lose weight (e.g., she can buy low-calorie foods at the grocery store), even if she does

not hold these goals herself.

The notion that Alice can pursue John's goals without sharing or adopting them herself is

a unique aspect of a TGD approach. In line with most models of goal pursuit, we assume that

Alice's behavior reflects her own goal representations in memory, not John's, so why do we

suggest that Alice can pursue "John's goal"? We do not mean to imply that Alice is goal-free in

her behavior. Alice, like other partners in interdependent relationships, often possesses general,

abstract, interpersonal goals, like "be a good wife" or "be a helpful team member." In day to day

life, when Alice wants to turn those abstract interpersonal goals into behavior, we suggest that

she must possess a mental representation of what it is that John wants—that is, of the content of

John's goals. In other words, we suggest that relationship partners (when they want to be helpful)

have goals to advance *their partner's goals* via their own action.

If Alice's goal to "advance John's goals" becomes translated into action via her

understanding of the lower-order goals that John holds (e.g., to lose weight), she does not need to

value John's goal in order to pursue it. For example, Alice can stop at the store to buy low-

calorie food even if she thinks John doesn't need to lose weight (and even if she thinks his diet is

vain and silly). She can buy this food because doing so advances her goal to help or support John

(who wants to lose weight).

Importantly, the form her goal takes when it is translated into pursuit depends heavily on

John's goal content. Alice's goal to be a good wife has a lower-order goal representation that

includes the information that John wants to lose weight. If John instead wanted to indulge and relax, Alice's pursuit of her goal of being a good wife would now look different: She would now try to find time to stop to buy his favorite beer. Her own goal has not changed—she wants to be a good wife in both cases—but the lower-order, more concrete, more proximal goal shifts with the content of John's goals. Because it is the partner's goal that most clearly dictates the concrete nature of the action, we refer to this type of pursuit (cells 3-6 in Figure 2) as pursuit of the partner's goals.

Research on social support suggests that people pursue goals held by their partners and that this pursuit shapes outcomes (Bolger, Zuckerman, & Kessler, 2000; Brunstein et al., 1996; Cohen & Wills, 1985; Feeney, 2004, 2007; Girme, Overall, & Simpson, 2013; Sarason, Sarason, & Pierce, 1990; Uchino, Cacioppo, & Kiecolt-Glaser, 1996). In addition to offering support via their encouragement and their own direct pursuit of the goal, partners also monitor each other's progress (Carver & Scheier, 1998). Monitoring is a common form of partner-oriented pursuit in everyday life: Managers track employees' performance, teachers evaluate students' learning, and parents monitor children's behavior. Such partner-oriented pursuit can alter goal outcomes; for example, diabetic children are healthier when their parents monitor their glucose levels (Anderson, Ho, Brackett, Finkelstein, & Laffel, 1997; La Greca et al., 1995).

It is also possible that despite someone possessing the goal, neither partner will pursue it. In addition to the repercussions that arise when an individual fails to pursue a goal (Carver & Scheier, 1990; Higgins, 1987), there are additional repercussions in an interpersonal context. For example, when an individual possesses a partner-oriented goal but the partner fails to pursue that goal, the individual may feel annoyed or disappointed and the partner may feel guilty or defensive (Overall, Fletcher, Simpson, & Sibley, 2009). When both partners possess a goal but

neither pursues it, blame and negative attributions can ensue. In this way, non-pursued goals can haunt the relationship in ways that cannot be explained from individual-centered models of goal pursuit.

Types of transactive goals and pursuits. *One partner's goals.* The simplest case of goals within a TGD system is the possession of a goal by only one partner. We begin by considering the prototypical case of a goal in the psychological literature—when one person has a goal for him or herself. For example, John has a goal to lose weight. As explained in Table 1, which reviews the common types of goals and pursuits in TGD systems, this is an example of a *self-oriented goal*, one that is possessed by an individual and that applies to that individual's own goal-relevant state (Row 1). From a TGD perspective, even such self-oriented goals are interpersonal. Certainly, as shown by a huge body of research on individual goal pursuit, John can pursue his own weight-loss goal (1A in Table 1). However, Alice can also pursue John's goal to lose weight (1B), or both of them can pursue his goal (1C). Alice can, for example, buy fruits and vegetables at the store or help John cook low-calorie meals. In short, even for the least obviously social goal possible—one partner's goal for himself—the behaviors of both partners' in the TGD system influence the outcomes.

Although less well studied, *partner-oriented goals*, those that are targeted at or applied to a partner's goal-relevant state or outcome, are also very common in everyday life. Spouses want each other to succeed with their careers and to spend more time with the children (Overall et al., 2009), parents want their children to achieve at school and develop certain skills (Zimmerman, Bandura, & Martinez-Pons, 1992), and managers want their employees to meet standards and complete projects (Locke & Latham, 1990). To be sure, partner-oriented goals, like all goals, fit into a network of multiple goals (Kruglanski et al., 2002), and may well be related to self-

oriented goals as well as other partner-oriented goals. For example, Alice's goal for John to lose weight may serve her higher-order partner-oriented goal for John to be healthy, and her higher-order self-oriented goal to be happy herself. TGD Theory does not argue that goals for self or partner are primary; instead, both are sub-parts of the dyadic unit of interest, and thus, are equally relevant. In Row 2 of Table 1, we describe several variants of partner-oriented pursuits. For example, John can pursue his own partner-oriented goal for Alice to lose weight by cooking healthy meals (2B), Alice can pursue John's goal for her to lose weight by restricting her caloric intake (2A), or both can pursue John's goal by removing tempting foods from the pantry (2C).

Although again less studied than self-oriented goals, *system-oriented goals* (Row 3 in Table 1)—goals targeted toward both partners' outcomes or toward the system as a whole—are also common in everyday life. For example, in romantic relationships, an individual may have a goal for the couple to both lose weight, start a family, or save money (Fincham & Beach, 1999; Hempel, 1974). In workplace relationships, a project leader may set a goal for the team to complete a project to a certain standard or to improve their turnaround time (Durham et al., 1997). System-oriented goals can take two forms: They can be goals for both partners to achieve the same end-state (e.g., Alice wants both John and herself to lose weight) or for the system/relationship to achieve a certain end-state (e.g., Alice wants them to buy a house or to start a family). In both cases, both partners' outcomes are the target, but the two differ in whether those outcomes can be individually measured. In the case of losing weight, the target is defined at the dyadic level, in that Alice and John want to lose weight as a couple, but their outcomes can be separated. Alice can lose weight while John fails to do so. In the case of buying a house or starting a family, the target and the outcome are defined at the dyadic level, in that Alice and John cannot disentangle their outcomes (at least, while staying married).

As with self- and partner-oriented goals, the individual can pursue system-oriented goals alone, as when Alice cooks healthy dinners because she wants both John and herself to lose weight (3B), or both partners can pursue the goal, as when John and Alice alternate cooking healthy dinners (3C).

Parallel goals. The goals described above were possessed by one partner in the system. Of course, both partners can also possess the same goal content. When goals match in content but not target, it is like the two goals are operating in parallel within the system. When both partners possess the same self-oriented goal (i.e., when both Alice and John want to lose weight) but they do not have this goal for the partner, this is a *parallel self-oriented goal* (Row 4 in Table 1). Such goals can be pursued by either or both partners. For example, in the context of breast self-exams for cancer prevention, researchers found that participants assigned to set a parallel goal with a friend completed more exams than participants assigned to set this goal on their own (Prestwich et al., 2005). In the case of breast self exams, each participant presumably pursued her own goal, and indeed, this is likely a common pursuit strategy for parallel self-oriented goals (4B), as when Alice and John each cut back on calories on their respective lunch breaks at work.

Like self-oriented goals, partner-oriented goals can also be held in parallel. When partners possess the same partner-oriented goal, as when Alice wants John to lose weight and John wants Alice to lose weight, but neither wants to lose weight him or herself, this is a *parallel partner-oriented goal* (Row 5 in Table 1). The two partners' goals are operating in parallel within the system, with the target of each goal being cross-partner (i.e., Alice wants something for John while John wants something for Alice). These goals are also common. Romantic partners may each want the other to do more housework and coworkers may each want the other to communicate more effectively with the client. Such goals can be pursued by either or both

partners. Ideally, perhaps, both individuals, recognizing their partners' goal, pursue the goal targeted at their outcomes, even though they do not hold this goal for themselves (5C). For example, each spouse may try to do more housework, and each coworker may work on client communication. Alternatively, each partner can attempt to elicit change in the other, dropping reminders and nudges, or providing background support to facilitate change (5B). Finally, one partner can pursue both goals alone (5A), as when John cleans the kitchen and buys a luxury brand of dishwasher soap that he knows Alice likes, to nudge her to do the dishes.

  Shared goals. In summary, parallel goals are those held by two partners, but toward distinct targets—both partners hold the same goal either for themselves *or* for their partners. Shared goals, in contrast, are those held by two partners for the same target. If that target is only one of the two partners—for example, if John and Alice both want John to lose weight—this is a *shared target-oriented goal* in TGD terminology (Row 6 in Table 1), meaning that both partners have a certain goal for one partner. Such goals are widely studied in clinical and health psychology (Horvath & Luborsky, 1993), and are common in everyday life. When one spouse develops an illness, both spouses likely share goals for the ill spouse's treatment and recovery (Coyne & Smith, 1991), and when a junior employee pursues a promotion, both he and his mentor presumably share a goal for his success (Burke, 1984). Such goals can be pursued by either, neither, or both partners. For example, when both John and Alice want John to lose weight, John can pursue it alone by watching his calorie intake (6A), Alice can pursue it alone by cooking him healthy meals (6B), or both can pursue the goal (6C).

  If both partners possess the same goal for both partners or for the relationship—for example, if John and Alice both want both John and Alice to lose weight, or both want to buy a house together —this is a *shared system-oriented goal* in TGD terms (Row 7 in Table 1), or what

is commonly called a *joint goal*. Shared system-oriented goals, like individually-held system-oriented goals, can have outcomes that are separately measurable, as when both partners want to lose weight together, and can have outcomes that are inseparable, as when both partners want to buy a house together. Both types of shared system-oriented goals are common and important. When spouses seek to start a family, to buy a house, or to save money, they have one shared goal for both partners (or the system). If Alice and John both catch the flu, they likely share a goal for both partners to quickly recover. There are numerous investigations of joint goals in the research on teams and groups (Knight, Durham, & Locke, 2001; Kristof-Brown & Stevens, 2001), but fewer examples in other relationship contexts. Such goals can be pursued either by one (7A) or both partners (7B). In a recent theoretical model of marital satisfaction, Fowers and Owenz (2010) suggest that shared system-oriented goals related to marriage can often be of particular importance to relationship quality.

Dynamic processes in TGD systems: Transactive density. The goals and pursuits described in the preceding section are neither static nor isolated phenomena. Instead, the two partners' goals, pursuits, and outcomes affect each other, creating a dynamic system of mutual influence that draws on shared resources. Alice's goals for herself affect John's goals for her; John's goals for Alice affect his Alice-oriented pursuit; John's outcomes at those pursuits affect Alice's goals and pursuits, etc. Instead of each partner relying only on his or her own resources (e.g., time, energy, skills), the two partners can share resources and rely on each other. These dynamics produce systems that vary in *transactive density*—the extent to which the two partners' goals, pursuits, and outcomes affect each other, or the interdependence of goal dynamics within the system. Transactive density reflects both the number of links across the two partners and the strength of those links—that is, how many distinguishable influences does John have on Alice's

goals, pursuits, and outcomes, how strong are those influences, how many influences does Alice have on John, and how strong are those influences?

Transactive density in relationships likely emerges from people's basic tendencies to attend to the goals underlying other people's action and to involve themselves in others' goal pursuits, two psychological processes that have been theorized to facilitate the development of group cooperation in society (Aarts et al., 2004; Lizkowski et al., 2008; Tomasello et al., 2005). On a more intimate level, relationships scholars have suggested that supporting and relying on close others for goal progress is a fundamental part of what people do in relationships (Finkel & Eastwick, 2015; Feeney & Collins, 2014). Thus, transactive density emerges partly as a byproduct of what relationship partners are naturally doing. When coworkers and spouses spend dozens of hours a week together, it is perhaps inevitable that their goals and pursuits will become deeply intertwined.

Despite the ubiquity of these tendencies to develop goal interdependence with others, TGD Theory assumes that relationships vary in density. As depicted in the left side of Figure 3, some dyads are relatively low in transactive density, with a limited number of weak links among their goals, pursuits, and outcomes. Imagine that Alice and John have just met and started a relationship, and their interdependence is still quite low. For each individual, there are numerous strong links among their own goals, pursuits, and outcomes. For example, if one person possesses a goal to lose weight, that increases the chances she will pursue that goal and ultimately succeed at it. There are also a small number of cross-partner links. Alice's goal to lose weight affects John's pursuit of his goal to indulge in delicious meals; John's pursuit of that goal in turn reduces Alice's likelihood of losing weight. Thus, in a relationship with low transactive density, most of the predictive power is intra-individual; Alice and John do not strongly

influence the goals that the other individual values and pursues, nor do they strongly influence outcomes for those goals. They are better thought of as independent goal pursuers, with some incidental influence on each other.

In contrast, as depicted in the right side of Figure 3, some dyads are relatively high in transactive density, with a large number of links, and stronger links, among their goals, pursuits, and outcomes. In a dense transactive system, such as Alice's and John's after many years of marriage, many or most of Alice and John's goals and pursuits are interdependent. Alice has goals for John's career and family, and her pursuits affect his fitness and recreational pursuits and outcomes, and vice versa. In such a system, there are diverse, frequent, and strong effects of partners on each other's goals, pursuits, and outcomes. In a relationship with high transactive density, intra-individual processes continue to be influential, of course, but interpersonal processes provide a great deal of the predictive power. Tenet 2 outlines the factors that predict which dyads will develop transactive density.

Tenet 1: Caveats and conclusions. In line with psychological research in applied contexts (e.g., Ames, 1992; Anderson et al., 1997; DiMatteo, 2004; Frymier & Houser, 2000; Hagedoorn, Sanderman, Bolks, Tuinstra, & Coyne, 2008; Knight et al., 2001; Martin, Garske, & Davis, 2000), which suggests that partner-oriented and system-oriented goals and pursuits are common and significant contributors to goal outcomes, Tenet 1 depicts goal pursuit as an interpersonal process. There are surely times that John has a self-oriented goal and pursues it alone, and his goal and pursuit have no effect on Alice. However, given that John also has goals for Alice and the couple, Alice has goals for John and the couple, and both Alice and John pursue goals for each other and for the couple, we suggest that fully independent action is only a

subset of everyday goal pursuit. For many people, the high levels of transactive density depicted on the right side of Figure 3 represent their everyday reality.

An important caveat is that not all TGD systems will have all these types of goals and pursuits. In some relationships, such as those between parents and children, and bosses and employees, an asymmetry may exist, such that only one partner is the focal target for most of the system's goals. Parents often engage in partner-oriented pursuit related to their children's goals, while the reverse is not common in some phases of childhood. Another caveat is that this list of variations of transactive goals and pursuits was not exhaustive. Because these three variables—who possesses the goal, who is the target of the goal, and who pursues the goal—combine to produce a daunting number of types of goals and pursuits within the dyad, exploring all variations of transactive goals and pursuits was beyond the scope of the current paper. Figure 2 presents a complete view of this structure, which allows interested readers to more broadly explore goal types in TGD systems by considering various combinations of the cells in the figure.

Tenet 2: Transactive Density Emerges from Partners' Opportunities and Motivation for Goal Interdependence

The second tenet of TGD Theory predicts the emergence of the above-described goal interdependence, or *transactive density*—the density of the network of cross-partner links among goal dynamics in everyday life. Tenet 2 discusses the antecedents of transactive density: As shown in Figure 1, variation in transactive density is predicted by (a) the opportunities the relationship provides for interdependence and (b) partners' motivation for interdependence. In short, Tenet 2 aims to answer the question: "Why do some dyads develop higher levels of transactive density than others?"

Opportunities for interdependence. *Opportunities* are contextual or environmental

factors that enable partners to become interdependent in their goal pursuits. Opportunity for

interdependence can be controlled by the situation, as it often is in work environments, where

supervisors determine (for better or worse) how much coworkers will be given the opportunity to

work jointly versus independently. If not controlled, one major determinant of opportunity is

time spent together—the duration of the relationship and the frequency of interaction within the

relationship (Berscheid et al., 1989; Thibaut & Kelley, 1959). Partners in long-term relationships

or those who interact frequently will tend to develop stronger links among their goals and

pursuits than partners in short-term relationships or those who interact rarely, for several reasons.

First, quantity of interaction allows partners to garner more observations of each other's goal

pursuits, and thus learn more about each other's goals, preferences, and skills. Time together also

encourages more communication about goals. Without being around each other, people will find

it hard to learn about each other's goals, and hard to develop goals for the partner. Learning

about each other's goals makes it possible for partners to develop joint goals, and to share or

divide pursuit. If Alice learns that Maria hopes to ultimately move to a technical area of their

firm, Alice has the opportunity to be helpful by suggesting Maria for a more technical role in a

team project. If Alice doesn't know Maria's long-term goals, she is less likely to be able to

facilitate Maria's pursuit of the goal.

Second, quantity of interaction also forces more adaptation to each other. If Alice and

John spend little time together, they can pursue many of their goals independently; if they are

together all the time, they must change their goals and pursuits to allow for each other's presence

(e.g., to ensure that the car is available when each needs it). This forced adaptation drives goal

interdependence: Alice and John may begin to develop joint goal pursuits simply because their

old independent pursuits conflicted. Similarly, Alice may grow to value John's goal progress because she learns that if his goal outcomes are poor, his negative mood will interfere with her own pursuits. These numerous minor adjustments form the basis for the arrows connecting self and partner in the right side of Figure 3, and as these adjustments accumulate over time, they transform the partners from independent agents into one indivisible system.

Beyond quantity of interaction, a second major determinant of opportunity is the relevance of the partners' resources to each other's goals. Imagine that John wants to lose weight, and Alice is a nutritionist rather than a lawyer. If Alice is a nutritionist, her goal-relevant expertise will likely lead her to become involved in John's goal pursuit, offering advice, responding to questions, and helping with meal planning. As a result, Alice's own goal pursuits will be more affected by her involvement in John's weight loss. For example, she may find it tiring to do another shift of work as a nutritionist at home, which may negatively affect her performance at work or leave her with less energy for another of her own goals. John will likely benefit, not only in this goal domain, but also in other goals: Because he can rely on Alice's expertise rather than reading nutrition books on his own, he can use that saved time and energy for other goals. Thus, because of the relevance of Alice's skills to John's goal, the opportunity arises for greater interdependence. If Alice were a lawyer, these new links between the two partners' pursuits would not have emerged, leaving them with relatively less transactive density. The same would be true for other examples of goal-relevant resources, such as interests and preferences. If John wants to get more exercise by walking, and Alice loves nothing more than a brisk stroll, her preference will lead to greater interdependence for the dyad.

Motivation for interdependence. According to Tenet 2, the other major predictor of transactive density is partners' *motivation* to be interdependent with a given partner. Does Alice

want to rely on John for support; does she want him to share her goals; does she want him to get involved in her pursuits? Does she want John to rely on her; does she want to take on John's goals; does she want to get involved in John's pursuits?

Some of the variation in how people answer these questions—that is, in their motivation for interdependence—is captured by relationship type. Derived from cultural and social norms, people have different expectations and preferences about interdependence, including how much support they should give and receive, in different types of relationships (Dakof & Taylor, 1990; Okun & Keith, 1998; Primomo, Yates, & Woods, 1990). For example, contemporary Westerners tend to report greater interdependence in romantic relationships than in relationships with siblings or friends (Berscheid et al., 1989; Finkel, Hui, Carswell, & Larson, 2014). Similarly, in the goal domain, people likely desire more transactive density in certain types of relationships: A welcome offer of help from John to Alice (e.g., encouragement before a big presentation) could feel inappropriate or even intrusive if coming from another person.

Even within a given relationship type, there is variance in desired interdependence. For example, within dating relationships characterized by high levels of psychological commitment, partners tend to value each other's well-being to a greater extent and to be more willing to make sacrifices for each other's interests (Arriaga & Agnew, 2001; Agnew et al., 1998). As a result, committed partners are likely to be more motivated to get involved in each other's goals and pursuits.

Individual differences in motivation for goal interdependence are also important. For example, people who are high in attachment avoidance—who tend to distrust others and fear intimacy (Bartholomew, 1990)—may be uncomfortable relying on others' help and may find others' requests for support intrusive, leading to relationships with lower levels of transactive

density (Mallincrockdt & Wei, 2005; Ognibene & Collins, 1998; Simpson, Rholes, & Nelligan, 1992). In contrast, those high in attachment anxiety or other relationship insecurities (e.g., low self-esteem, need for reassurance) may seek greater goal interdependence as a means to promoting intimacy. Indeed, research has shown that partners with low self-esteem engage in strategic partner-oriented pursuit, attempting to foster dependence in their partners (Murray et al., 2009), and that partners with high attachment anxiety seek to change their health goals after learning about their partner's goals to a greater extent than do partners with low anxiety (Bornstein, vanDellen, & Shaffer, 2015).

Tenet 2: Caveats and conclusions. In sum, the second tenet of TGD Theory predicts that transactive systems will have greater density when partners have more opportunities and more motivation for interdependence. Of course, Tenet 2 applies less strongly to relationship contexts in which density is strongly determined by the situation. No matter how much time she spends at the store, even the most motivated customer may find it hard to develop high levels of goal interdependence with a grocery store cashier.

In addition, although treated independently here, the two categories of predictors can also affect each other. When partners are motivated to foster interdependence, they are likely to create more opportunities. Similarly, when opportunity is high, that may, under some conditions, increase people's motivation for interdependence, given that exposure frequently promotes liking (Festinger, 1950; Zajonc, 1968), which should promote motivation for interdependence by increasing the value of partner outcomes.

Because Tenet 2 suggests that the primary drivers of density are opportunity and motivation, not the utility of density for goal outcomes, density may often emerge in relationships or settings in which it is not particularly advantageous for the individuals. Alice

may desperately want more interdependence with John, but if John is an incompetent twit, it is unlikely that she will benefit from obtaining that interdependence. Indeed, interdependence does not promise good outcomes; it merely affords that possibility. For many work teams, families, and spouses, more interdependence actually yields more goal conflict and obstruction. Tenets 3 and 4 outline a TGD perspective on when density leads to positive versus negative goal outcomes.

Tenet 3: Transactive Density Interacts with Goal Coordination to Predict Transactive Gain/Loss

According to Tenet 3, transactive density can produce either positive or negative effects on partners' goal outcomes, depending on the quality of a dyad's goal coordination. In other words, and as shown in Figure 1 and elaborated in Figure 4, we propose that the effect of transactive density on outcomes is moderated by goal coordination. If partners' goal pursuits coordinate well, interdependence will be positively related to goal outcomes; if they coordinate poorly, interdependence will be negatively related to goal outcomes. In short, Tenet 3 aims to answer the question: "When will increased goal interdependence (transactive density) promote versus undermine goal outcomes?"

Conceptualizing success in a TGD system—the concept of transactive gain/loss. Before delving into the core theorizing of Tenet 3, we first articulate how we conceptualize successful goal outcomes in TGD Theory. For the purpose of evaluating the success of a TGD system, we measure goal outcomes in the relationship relative to the goal outcomes the two

partners would achieve as independent agents; thus, successful TGD systems are those in which interdependence promotes goal outcomes.[1]

In line with economic theories of joint action (Becker & Murphy, 1994; Smith & Nicholson, 1887) and organizational theories of team performance (Appelbaum, 1994; Guzzo & Dickson, 1996), Tenet 3 proposes that if partners coordinate well across their full system of goals (as explained in the following pages), they have the potential to be more successful as a dyad than they would as individuals. We suggest that the synergies that arise from the integration of partners' goals and pursuits, when coordinated well, can yield emergent states of gain—levels of success that would not be achievable were the two interdependent partners to be independent. Just as a factory of 100 people working well interdependently allows for faster and more efficient labor than 100 individual laborers working well alone (Smith & Nicholson, 1887), and effective groups of hunter/gatherers feed and protect more people than they would if each hunter/gatherer set out alone (Johnson, 2000), we suggest that a dyad with good coordination and high density can achieve better goal outcomes than the partners would were they to pursue those same goals as independent agents.

Imagine that Alice and John are independent agents. Each of them has goal-relevant resources (e.g., time, energy, effort, skills) that yield 100 units of overall goal success per person—or a sum of 200 units across the two of them. Now imagine that Alice and John pool their resources into one interdependent pot. According to Tenet 3, if they are highly interdependent and tend to coordinate their goals well (via the mechanisms explained in the following pages), their pooled pot of resources can yield greater overall success for the dyad

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[1] Because of the theory's dyadic focus, we emphasize the dyad's outcomes here—that is, how well is the couple doing overall? See the Discussion section labeled "Limitations and Unanswered Questions" for a discussion of asymmetric outcomes across the partners within the dyad.

(e.g., 230 units). TGD Theory refers to this increase in overall goal success that results from involvement in the relationship as *transactive gain*. Of course, involvement in a relationship does not uniformly increase overall goal success. In some cases, it does the opposite, yielding *transactive loss,* a lower level of overall goal success than the two partners would have experienced as independent agents. If Alice and John are highly interdependent but coordinate inefficiently, their pooled set of resources can yield poorer overall success for the dyad (e.g., 170 units).

Research on team performance provides evidence for transactive gains and losses (Guzzo & Dickson, 1996). In some organizational and learning environments, working interdependently can allow teams to generate better outcomes (Applebaum, 1994; Edmondson & Nembhard, 2009; Hamilton, Nickerson, & Owan, 2003; McDonough, 2000). Research on transactive memory has demonstrated that the development of shared memory structures allows groups of employees, on average, to accumulate more knowledge and perform better on goal-directed tasks than groups of employees who do not develop such shared memory structures (Liang et al., 1995; Moreland et al., 1996). However, there is no guarantee that interdependence will promote outcomes. Many teams fail, performing worse together than they would apart (Guzzo & Dickson, 1996; Karau & Williams, 1993).

What predicts when interdependence—in a dyad or a larger team—leads to failure versus success? In other words, within TGD systems, how do partners achieve the transactive gains and losses we described above? Broadly, we suggest that transactive gains or losses occur because of the efficient or inefficient use of the pooled resource made available by interdependence. In other words, they arise from the combination of transactive density, which creates the shared pool of resources, and *goal coordination*, which enables partners to efficiently draw from that shared

pool of resources. Thus, we propose that when transactive density increases goal outcomes for

the dyad, it does so by both increasing the pool of goal-relevant resources on which each partner

can draw (transactive density) and by efficiently translating those resources into goal progress

for the partners (goal coordination).

Of course, such a pool may not be developed or used effectively. Indeed, we propose that

when transactive density decreases goal outcomes for the dyad, it does so by interfering with the

efficient use of partners' goal-relevant resources. In the next section, we discuss the goal

coordination mechanisms that allow for the efficient use of a shared resource pool, and thus, that

predict when density leads to good versus bad goal outcomes.

When transactive density leads to success—the moderating role of goal

coordination. In a TGD system, goal coordination is the set of mechanisms through which

partners integrate and align their pursuits. As Reis and Collins (2004, p. 233) noted, "Most

human activity involves coordinating one's actions with the actions of others." Indeed, scholars

have suggested that the ability to successfully integrate one's own behaviors with others'

behaviors is fundamental to humanity, allowing for the development of cooperative societies

(Carpenter, 2009; Tomasello, Carpenter, Call, Behne, & Moll, 2005).

From a TGD perspective, goal coordination represents the essence of what people mean

when they say that two people are "compatible". The primary emphasis of research on

compatibility in relationships has been similarity in personality traits, attitudes, and values (for

reviews, see Finkel, Eastwick, Karney, Reis, & Sprecher, 2012; Montoya, Horton, & Kirchner,

2008). In contrast, we suggest that to be compatible with another person means to be well

coordinated with that person—to find it easy to successfully integrate goals and pursuits

(Berscheid, 1985). That is, compatible partners are those whose goal pursuits "fit" rather than

those whose personalities, attitudes, or values fit (see Bohns et al., 2013). We suggest that compatibility—i.e., ease of goal coordination—will promote the dyad's goal outcomes, especially when density is high. Supporting this idea, research on nonverbal coordination has demonstrated that coordinated dyads and teams, whose behaviors fit together well, tend to perform better and experience their interactions as smoother (Bernieri & Rosenthal, 1991; Finkel et al., 2006; Okhuysen & Bechky, 2009).

Why and how does goal coordination facilitate goal outcomes (and thus, produce transactive gain rather than transactive loss)? Tenet 3 proposes three mechanisms of efficient goal coordination (see below), all of which moderate the density-outcomes link by affecting the use of the shared resource made possible by density. That is, efficient dyads achieve better outcomes from the same investment of partners' individual resources, and they do so via the three mechanisms of goal coordination described below.

Interpersonal multifinality. One mechanism through which pursuits "fit" in a TGD system, and thus a behavioral moderator of the density-outcomes link, is *interpersonal multifinality*. A "multifinal" pursuit advances multiple goals (Köpetz, Faber, Fishbach, & Kruglanski, 2011; Kruglanski et al., 2002). To date, multifinality has been studied individually, describing an action that advances more than one of the individual's goals (e.g., John's walk to work serves his goals to save money and burn calories). Within a TGD system, multifinality also occurs interpersonally, with one action promoting progress on multiple partners' goals (e.g., John's walk to work serves his goal to burn calories and Alice's goal for them to save money). That is, his one action simultaneously moves both his goal and Alice's goal forward, without drawing in Alice's resources.

As interdependence increases, opportunities for partners to engage in multifinal means also increase: The more they know about each other's goals, the likelier it is that they can choose multifinal means, and the more that they possess *shared target-oriented goals* (see Tenet 1), the more multifinal a given action can become. If Alice and John both want John to lose weight, then his dieting advances both of their goals. Of course, the converse is also true. As interdependence increases, the more possibilities there are for partners to engage in acts that simultaneously promote one of the goals in the system and hinder another goal (or multiple goals) in the system. Take the classic conflict described by Murray, Holmes, & Collins (2006), in which partners balance competing goals to protect their sense of self and to promote the well-being of the relationship. When Alice pursues a self-oriented goal to protect the self, this may well undermine her own system-oriented goal to have a happy relationship, as well as any number of John's goals (Murray et al., 2006). Essentially, by expanding to the system level, the opportunities for multifinality increase, but so too do the opportunities for mixed motive situations.

Finally, it is important to note that multifinality can be effortful, requiring active alignment of pursuit, or be relatively effortless, because of an inherent alignment of each partner's default pursuit tendencies. For example, if John would walk to work even if Alice did not want to save money, then walking to work advances Alice's goal without any effort on John's part or requests on Alice's part. If, in contrast, John would rather drive to work, then if he chooses to walk because of Alice's goal, he is engaging in a more effortful alignment of his action with Alice's. To the extent that multifinality arises with no effort, then the dyad benefits from the coordination without having to use any resources on coordination itself.

Transactive goal conflict and facilitation. While interpersonal multifinality refers to the effects of one single action by one partner on the goal progress of both partners, the second

mechanism of goal coordination (and thus, moderator of the density-outcomes link) refers to the mutual effects of two actions on each other. *Transactive goal conflict* and *transactive goal facilitation* occur when one partner's pursuits impede or facilitate the other partner's pursuits. For example, when Alice's spontaneous dinner party (her pursuit of a goal to showcase new cooking skills) means that John can't catch up on the pile of bills he set aside (his pursuit of a goal to maintain a budget), her pursuit has made it impossible for him to engage in his pursuit. When Alice's background chit-chatting (her pursuit of a goal to be friendly to a third colleague) interferes with Maria's focused work (her pursuit of a goal to complete her project), Alice's pursuit has undermined the effectiveness of Maria's pursuit. In both cases, their interdependence is directly interfering with progress on these goals.

Of course, Alice's pursuit of her goal to host more dinner parties to showcase her cooking skills may make it harder for John to work on the budget, but easier for John to pursue a goal to make new friends. If Maria works better in a slightly noisy environment, her performance may be improved by Alice's background chit-chat. *Transactive goal facilitation* improves outcomes by increasing the efficiency of partners' use of their shared resources: Alice was already hosting dinner parties, so with no increased effort on her part, she was able to make it easier (i.e., less resource-consuming) for John to pursue his goal to make new friends. To be sure, John has to capitalize upon the opportunity that the dinner has afforded him, but that pathway toward new friendships is much easier because of Alice's dinner parties. As this example illustrates, when pursuits facilitate each other, the dyad's goal outcomes are better if they have more, rather than less, density.

Transactive goal facilitation and conflict can emerge from all types of goals, whether aimed at the self, partner, or dyad. For example, Alice's pursuit of a self-oriented goal to get a

promotion can obstruct John's pursuit of a system-oriented goal for the couple to take a romantic getaway (e.g., she may not want to miss work), and simultaneously obstruct his pursuit of a partner-oriented goal for Alice to relax more (e.g., he can't take Alice for evening strolls because she is working long hours). Importantly, whether a partner's pursuit obstructs (vs. facilitates) the other partner's pursuit depends on the whole system of goals in the dyad. For example, imagine that Alice wants to run a marathon, and thus goes on long runs on the weekend, freeing John to put extra time into his goal to rebuild his beloved motorcycle. Upon the arrival of a bouncing baby boy, however, the dynamics may shift—Alice's marathon training now results in extra parenting responsibilities for John, thereby obstructing his goal outcomes by reducing his ability to put effort into rebuilding his motorcycle. Thus, when pursuits obstruct each other, the system is not making efficient use of its resources. Both individuals' goal outcomes would be better if they had less, rather than more, density.

Finally, it is important to note that transactive goal facilitation can arise from explicit and intentional effort on the part of partners to bring their goals into alignment, or can occur with much less effort. For some dyads, due to excellent partner selection or sheer luck, the partners' goals and pursuits will facilitate each other naturally and effortlessly. Other dyads can arrive at smooth goal pursuit, with much facilitation and little conflict, but only after juggling, negotiating, and planning. Such effortful coordination is itself a drain on resources that could be used for more directly productive pursuit.

Division of pursuit. A third way that pursuits can fit, and thus moderate the density-outcomes link, is via the division of pursuit within the unit. We suggest that, in an ideal TGD system, partners specialize their pursuits, trading off pursuits in an efficient way that plays to both partners' capabilities and interests (Austin, 2003; Hollingshead, 1998; Postrel, 2002;

Wegner, 1987). Doing so allows for better—more efficient—use of the shared resource pool. In a less ideal system, partners either do not specialize, missing opportunities for taking advantage of each other's strengths and engaging in redundant pursuit, or worse, specialize incorrectly, trading labor in an inefficient way that plays to both partners' vulnerabilities.

Splitting up goal pursuits by skill or interest (rather than, say, by who holds the goal, or by stereotypic gender or power roles) allows partners to achieve greater overall goal success than they could alone. By specializing, a larger proportion of the goal pursuits that each partner performs plays to his or her strengths and preferences (e.g., Bohns et al., 2013). For example, imagine that Alice finds it easy to get up in the morning, while John struggles to shake off sleepiness and has to exert substantial self-control to perform simple tasks in the morning. When it comes to getting the children ready for school, the couple can alternate days, they can do this task together, or one person can take on the morning alone while the other does after-school pickups. Given these partners' respective strengths and weaknesses, it will typically be most beneficial for the system for Alice and John to divide the labor on this pursuit. Rather than have sleepy John expend a lot of effort just to mess up the kids' lunches and get them to school late, energetic Alice should do the job well, and then get a break later in the day to pursue another goal she values.

Effective specialization can be hard to do. Certainly, some partners can do so easily and with little effort, either because of their inherent alignment of preferences or because initially effortful alignment has become habitual over time. For those partners, specialization itself will not be resource-draining, and thus, their outcomes will (on average) be better. However, for many partners, specialization requires effort and contains risk. In such systems, specialization is more effective when partners have both accurate and shared beliefs about each other's abilities

and preferences (Cannon-Bowers, Salas, & Converse, 1990), plan and organize their pursuits together, and trust each other to come through with their pursuit. If the above-described partners get it wrong—for example, if John doesn't admit that mornings are hard for him, or if Alice thinks John is equally capable in the mornings and is just a complainer—their pursuit will be inefficient. Kids will be late to school and forget their homework, and John will arrive at work frazzled and frustrated.

Another reason specialization is challenging is that it necessitates that partners come to depend on each other, and thus, make themselves vulnerable as individuals. For example, if Alice and Maria develop a specialized relationship, trading to optimize their use of time and their distinct skill sets, they will be more successful as a team. However, neither of them will be fully-functioning as individual workers. By learning to rely on Alice for research while she handles the client presentations, Maria's own research skills will decline over time. Thus, specialization has to fit the context of the relationship. If, for example, Maria and Alice always work together, this specialization is likely to yield strong goal outcomes. However, if Maria needs to do some solo projects occasionally, this specialization may undermine her goal outcomes. Similarly, specialization is easiest when commitment to the relationship is high, allowing partners to trust that both of them will be motivated to follow through on their part of the "deal."

A final challenge to effective specialization is that its success depends on partners possessing complementary skills. If Alice is skilled in packing for trips, while John is skilled in cleaning the house, specialization allows them to achieve greater overall success as an interdependent pair than they could independently. While John cleans the house before a trip, Alice can pack their bags, and the resultant outcomes will be better, and the process easier, than

if they divided each task fifty-fifty. If, in contrast, both Alice and John are equally skilled in both

of those tasks, specialization does not allow them to achieve transactive gain.

Despite these challenges, specialization, like other forms of goal coordination, is useful

because it can substantially increase the efficiency of pursuit and thus, make best use of the

shared resource pool in a TGD system (Becker, 1973). First, specialization allows partners to

capitalize on their respective strengths, as described above. Second, it allows partners to

minimize redundancy, another obstacle to efficient pursuits in dyads. If both Alice and John get

up in the morning to get their children ready for school, both are expending effort and time on an

outcome that can be accomplished pretty readily by just one of them. This redundancy of effort

hurts overall goal outcomes, as they could be using that time and effort on other goals (Austin,

2003; Postrel, 2002). Because sharing activities with others can make these activities more

enjoyable (Van Der Vegt, Emans, & Van De Vliert, 2000), this may be a complication to

efficient pursuit in personal relationships—people may be more successful if they specialize, but

may nonetheless feel motivated to do things together, and may thus put effort into redundant

pursuits.

A third benefit of specialization is that it can help partners to avoid the motivational and

performance problems that can plague joint pursuit. Research has demonstrated people's

tendency to "socially loaf," working less hard when engaging in a collaborative effort (Karau &

Williams, 1993). Splitting a goal into smaller sub-goals, and dividing those between partners,

can allow partners to engage in identifiable individual pursuits, which tends to increase

performance (Karau & Williams, 1993). For these three reasons, specialization can help to

increase the efficiency of the TGD system, and thus helps to promote goal outcomes in

interdependent dyads.

Tenet 3: Caveats and conclusions. In sum, transactive density and goal coordination interact to predict goal outcomes: Through transactive density, partners form one shared pool of goal-relevant resources (time, energy, skills, etc.) on which both partners can draw. When they work well, the mechanisms of goal coordination – transactive goal conflict/facilitation, interpersonal multifinality, and division of pursuit—allow partners to draw efficiently from that pool. However, the processes described in Tenet 3 would not hold under certain predictable circumstances. If goal outcomes are tightly constrained by the situation or limited by the partners' goal-relevant skills, the interaction of density and coordination would be unlikely to produce major variance in outcomes.

Tenet 4: Goal Coordination is Facilitated by Shared Goal Representations and Relationship Orientation and Skills

Given the crucial moderating role of goal coordination in determining whether goal density facilitates or undermines goal outcomes, it is important to discern the antecedents of goal coordination. Tenet 4 proposes two dyadic variables that predict when transactive systems will coordinate their various goal pursuits successfully. As shown in Figure 1, Tenet 4 suggests that compatibility of pursuits, or what we are calling goal coordination, is predicted by (a) shared goal representations and (b) relationship orientation and skills. According to Tenet 4, to the extent that dyads possess high levels of these two variables, their goal coordination will be better, and as a result, their goal outcomes will improve as goal density increases. To the extent that dyads possess low levels of these variables, their goal coordination will be poorer, and as a result, their goal outcomes will suffer as goal density increases. In short, Tenet 4 aims to answer the question: "What factors increase or decrease the likelihood that partners coordinate their goal pursuits well?"

Shared goal representations. If Alice and John both share the goal that Alice lose

weight, how does that affect their everyday goal pursuit? What if only one of the partners

possesses this goal? How would their everyday pursuit look different? According to Tenet 4 goal

coordination is facilitated by shared or similar goal representations—by shared or similar

representations of (a) goal target, (b) goal value, and (c) means-goal relationships. These shared

representations facilitate the tendency to engage the mechanisms of goal coordination specified

in Tenet 3.

Goal target. The most straightforward type of representation that partners can share is the

set of goals they possess for a given target. We propose that goal pursuit will be easier and more

efficient if Alice and John both want the same outcomes for Alice, John, and the dyad. To the

extent that partners share the same goals for a given target, they value the goals and they want

the target to succeed, and as a result, they will be motivated to facilitate each other's goals and to

avoid engaging in pursuits that conflict with those goals. In addition to reducing goal conflict and

increasing goal facilitation, shared goal representations should also lead to more multifinal

action, because simply by pursuing the goals they value, partners will more often be incidentally

advancing goals their partners value (because they are the same goals).

Imagine that Alice and John agree or disagree about whether she should aim higher with

her career. If both agree that she should aim higher with her career, he will be likelier to

understand why she wants to stay late at work, and to engage in pursuits that facilitate, rather

than conflict with, Alice's career pursuit—more likely to pick up the slack at home to give her

more time for work and less likely to undermine her work by setting up family events in the early

evenings. This frees up time and other resources for her to focus on work, and decreases the

number of goal conflicts in the dyad, while increasing the number of facilitating goal pursuits. It

also means that any pursuit of the goal, by either of them, serves both partners' goals, and is thus doubly useful to the dyad—that is, it is interpersonally multifinal action. If Alice stays late working one night, she has advanced both of their goals. If, in contrast, John does not want Alice to climb the career ladder, he is less likely to engage in these instrumental behaviors and more likely to resist her pursuit, scheduling obligatory social events in the early evenings, failing to pick up the slack at home, and arguing with her about working weekends. Coordination is thus easier when partners agree about the desired end-states for each partner.

From a TGD perspective, the problems that emerge from dissimilarity in target-specific goals are more substantial and pervasive than problems that emerge from dissimilarity in self-oriented goals, despite the relative focus on this latter process in the culture at large. For example, imagine that Alice wants to aim higher with her career but John doesn't have that goal for himself. The two differ in their respective self-oriented goals, but coordinating their action nonetheless can be quite straightforward, as long they agree about what they want for each partner. John can support Alice's desire to stay late, and Alice will not push John to do the same. That is, as long as Alice shares John's goal for himself and John shares Alice's goal for herself, they can pursue their goals with relative ease, even if what they want for each other is not what they want for themselves.

When partners share goals for the same targets, this should also facilitate smooth division of labor because both parties should be motivated to maximize outcomes, and thus, are likelier to divide labor more effectively. If Alice and John agree that Alice should aim higher with her career, it will be easier for the two to decide on how much she should contribute to other goal pursuits in the household, and easier for John to decide that he should take on the pursuit of their joint domestic goals.

Goal value. Another form of goal representation likely to promote smooth goal coordination is the value that each partner places on the goal. Beyond simply possessing or not possessing a goal, partners also vary in how much importance they place on the goal. To the extent that partners agree on the value of a given goal for a given target, they will be likelier to agree on the amount of effort to be invested towards the goal, and to offer an appropriate amount of supporting pursuit. Importantly, goal value encompasses not only the absolute value of a goal but also the relative importance of the goal within the system of goals in the dyad. For example, perhaps Alice and John would rate both Alice's career achievement goal and her goal to be a good daughter as extremely important (say, a "7" on a 1-to-7 scale), but, when push comes to shove, Alice values her career achievement goal less than her goal to be a good daughter whereas John values her career achievement goal more than his goal for Alice to be a good daughter. Such discrepancies in the relative value of those two goals can yield conflict when the goals are in direct competition (e.g., when Alice has to decide whether to go on a crucial business trip at a time when her mother is sick), and yield inefficiencies in pursuit (e.g., when John attempts to facilitate pursuit of Alice's career goal while she seeks to help her mother).

Means-goal associations. A third form of goal representation likely to predict goal coordination is the association between the goal itself and the means partners use to pursue that goal. For any given goal, partners may tend to use the same or different means to pursue a goal, and have the same or different views of the utility of any given means for pursuing the goal. For example, if both Alice and John want John to lose weight, but John wants to do so by eating at home more frequently while Alice wants to help John by encouraging him to get to the gym with her every morning, transactive goal conflicts and other inefficiencies in pursuit may arise, even though both partners possess the goal and agree on its value. Alice may wake up John to try to

persuade him to go the gym; she may also accept invitations for the couple to eat out with her coworkers, because she does not value the means John is using to pursue his weight-loss goal.

Relationship orientation. The second predictor of goal coordination is the partners' relationship orientations—how do they feel about and treat each other? According to Tenet 4, when partners are dedicated to the persistence and well-being of the relationship, as when they are highly committed to each other, they engage in smoother goal coordination, which in turn increases the extent to which density produces positive goal outcomes. When partners are lower in relationship orientation, they engage in less effective goal coordination and, consequently, density produces less positive outcomes. Supporting the link between relationship orientation and goal pursuit, research has demonstrated that relationship satisfaction promotes goal progress (Hofmann, Finkel, & Fitzsimons, 2015).

Why should relationship orientation predict goal coordination? According to TGD Theory, and in line with interdependence theorizing (Kelley & Thibaut, 1978; Van Lange et al., 1997a; 1997b), if people care about each other, are committed to their relationship, or are dispositionally other-oriented, they will be more motivated and willing to adjust their actions to accommodate and benefit the relationship. For example, commitment to the relationship promotes the willingness to make sacrifices for partners (Van Lange et al., 1997b; Wieselquist, Rusbult, Foster, & Agnew, 1999; Rusbult et al., 1991), as does being high in a dispositional tendency to care about others' welfare (Van Lange et al., 1997b).

In line with these findings, we propose that strong relationship orientations will lead partners to exhibit a stronger relative emphasis on the dyad's, rather than the individual's, success. This system-level perspective will promote the tendency to select means that are interpersonally multifinal, provide goal-facilitating support to their partners, and divide pursuit in

a way that maximizes the dyad's outcomes. For example, if John is strongly dedicated to the relationship, he is likelier to walk to work to pursue Alice's goal for them to save money. If he is not especially dedicated, he is less likely to consider Alice's goals when he chooses how to get to the office. Thus, when partners have a strong relationship orientation, they will more frequently resolve the tension between their own goals and their partner's goals, or between self-oriented and system-oriented goals, in partner- and system-promoting ways (Van Lange et al., 1997a).

For these positive tendencies to promote successful goal coordination, they need to be executed with skill (Carpenter, 2009; Gottman & Krokoff, 1999; Neff & Karney, 2005; Noller, 1980). Although some coordination can be effortless, as when Alice and John simply "fit" together perfectly without need for adjustment, for most partners, goal coordination requires effort—and skills in perspective-taking and communication (Barrick, Stewart, Neubert, & Mount, 1998; Beal, Cohen, Burke, & McLendon, 2003; Evans & Dion 1991; Gully et al. 2002). Next, we discuss two interpersonal skills that facilitate goal coordination: accuracy of understanding and goal responsiveness.

Accuracy of understanding. Coordinating complex and long-lasting goals over time is easier for partners who understand each other's preferences, responsibilities, and skills (Austin, 2003; Cote & Miners, 2006; Long & Andrews, 1990). Understanding others' goal-directed behavior is thought to be a fundamental component of humans' evolutionary heritage (Carpenter, 2009; Tomasello et al., 2005), but there is nonetheless a range of skill in both expressing and deciphering what are often subtle social cues about goals in the workplace and in close relationships (Bechky, 2006; Noller, 1980). Indeed, accurate views of each other's goals, pursuits, and abilities facilitate planning, anticipation of others' needs, and ability to help each other (Cannon-Bowers et al., 1990; Marks et al., 2002; Mathieu et al., 2000; Moreland et al.,

1996). If Alice and John do not communicate effectively about the pressure she feels at work, he

will not understand her desire to work long hours. If Alice does not know what goals John is

pursuing, the chances she will engage in multifinal action are lower, and the chances that she will

engage in pursuits that conflict with his goals are higher. Again, there are partners who

effortlessly, perhaps even cluelessly, coordinate extremely well, fitting together well without any

real understanding of each other; however, for most dyads, accurate representations of each

other's goals makes coordination easier, and density more successful.

Goal responsiveness. An accurate understanding of the system's goals also helps goal

coordination because it promotes behavior reflecting that accurate understanding. *Goal*

responsiveness is the tendency to support the partner in a way that aligns with the partner's goal

representation. In other words, responsive partners align their behavior with their partner's goals.

For example, Alice recognizes that John wants to lose weight, so she doesn't suggest going out

for ice cream. Responsive partners also align their partner-oriented action with qualities of their

partner's goals—how important the goals are, how efficacious the partner feels, and how high

the partner's standards are for the goal. For example, Alice recognizes that John wants to lose 20

pounds, so she continues to make sacrifices to help him, even after he has lost 15 pounds and she

thinks he looks great. That is, her partner-oriented pursuit reflects his standards, not her

standards.

Responsive partners also adjust their action based on their partner's level of current

resources for goal pursuit. For example, Alice recognizes that John is struggling to resist

temptation in the evenings, so she stops bringing snacks and treats into the house. That is, her

partner-oriented pursuit reflects John's current state of self-control. We suggest that

understanding and recognizing others' resources, and increasing help and support when those

resources are low and needs are high, is a hallmark feature of responsiveness (Marks et al., 2002). Imagine if Alice were to miss the signs that John was low in energy in the evenings, and to push him to go for late night runs with her. This would be much less effective than a similar suggestion at another time of day, and may well produce goal conflicts, in which Alice's (well-intentioned) support conflicts with John's attempt to get a good night's sleep for an early run in the morning.

Finally, responsive partners align their action with their partner's desired level of interdependence. If John wants to pursue his weight loss goal alone, Alice's decision to buy a diet cookbook may cause arguments, no matter how well-intentioned. General responsiveness to a partner is a strong predictor of relationship outcomes (Capriarello & Reis, 2011; Clark & Lemay, 2010; Reis, Clark, & Holmes, 2004). We suggest that responsiveness to the partner's goals and goal qualities is also an important predictor of goal outcomes. It will promote goal coordination, by increasing the effectiveness of pursuit, and thus, the efficient use of the partners' shared goal-relevant resources.

Tenet 4: Caveats and conclusions. In sum, relationship orientation, skills like accuracy of understanding and goal responsiveness, and shared goal representations predict effective goal coordination. However, these predictors are unlikely to predict goal coordination under all circumstances. As noted in Tenet 3, some partners effortlessly coordinate their pursuits with great success, because of the natural fit of their default actions. If Alice loves to plan meals, and John loves to cook meals, then they can coordinate well with no effort. For such partners, relationship orientation and skills are less relevant, because simply by pursuing even the most selfish actions, they naturally fit together well and facilitate each other's pursuits.

In addition, the predictors may interact to affect coordination quality. While shared goal representations should facilitate goal coordination even if relationship motivation is low, even the most relationally motivated and skilled partners may not coordinate well if they do not share important goals for each other. Indeed, Berscheid (1985, p. 146) noted: "No amount of negotiation or "conflict resolution skills," no amount of relationship counseling or "working on" the relationship, may produce compatibility within a close relationship for some partners…Some people are simply and irrevocably incompatible with each other…" Indeed, relationship motivation cannot alone produce goal coordination. If Alice thinks John should seek a promotion, but John disagrees, and John thinks Alice should lose weight, but Alice disagrees, they will find coordination hard, despite high levels of relationship motivation.

Tenet 5: Transactive Gain/Loss Predicts Relationship Duration.

Within a TGD system, relationship processes affect goal dynamics, as explained in Tenet 3 and 4, but they are also affected by goal dynamics (Arriaga et al., 2014; Berscheid & Ammazzallorso, 2001; Fitzsimons & Finkel, 2011; Gable, 2006; Maner et al., 2007; Murray & Holmes, 2009). These relational consequences of transactive goal dynamics are the focus of Tenet 5, which suggests, as shown in Figure 1, that relationship persistence is predicted by transactive gain/loss—by the extent to which partners achieve better or worse overall goal outcomes due to their involvement in the relationship. We propose that transactive gain (vs. loss) predicts relationship duration via two mechanisms: (1) more positive relationship behavior and (2) greater perceived instrumentality of the relationship. Thus, Tenet 5 aims to answer the question: How does transactive gain/loss affect relationship duration?

First, when important goals are going well, people tend to feel happier and behave in a more positive fashion than when goals are going poorly (Berscheid & Ammazzalorso, 2001;

Brunstein, 1993; Carstenson et al., 1995; Carver & Scheier, 1990; Fincham & Beach, 1999; Emmons, 1986). If Alice feels that her career is off track, her fitness is at an all-time low, and she has stopped practicing guitar for the first time in her life, she is likely to feel more negative affect in day-to-day life, and thus, to be less enjoyable of a partner for John. Given that more positive partners have longer-lasting relationships (Carstenson, Gottman, & Levenson, 1995; Fincham & Beach, 1999; Karney & Bradbury, 1997; Rusbult, 1980; Srivastava et al., 2006), we propose that when goals are progressing well, people will find it easier to be good partners, and thus, relationships will be likelier to persist over time; when they are going poorly, people will find it harder to be good partners, and thus, relationships will be likelier to end.

Second, we propose that partners' perceptions that the relationship is benefiting goal outcomes will also lead to more positive feelings about the partner. When people perceive that their partners are instrumental for their important goals, they feel closer to their partners and more satisfied with those relationships (Brunstein et al., 1996; Drigotas, Rusbult, Wieselquist, & Whitton, 1999; Finkel & Eastwick, 2015; Fitzsimons & Shah, 2008). Thus, when partners are in a state of transactive gain, we assume that they will perceive higher levels of partner instrumentality, and thus feel closer to and happier with their partners, relative to when they are in a state of transactive loss. In addition, when partners experience transactive gain, they should feel more dependent on the relationship, given its utility for the accomplishment of their important goals, and thus, will feel more committed to the relationship (Berscheid & Ammazzalorso, 2001; Rusbult, 1980). As a result of these dynamics, Tenet 5 predicts that individuals will persist longer in relationships that generate transactive gain than in those that generate transactive loss.

Transactive gain/loss as a novel conceptualization of relationship quality. In essence, Tenet 5 suggests that transactive gain/loss provides an alternative conceptualization of relationship quality. The close relationships literature typically conceptualizes relationship quality in terms of valenced affect and cognition regarding the partner and relationship. These subjective feelings about the relationship (e.g., satisfaction, commitment, closeness) tend to correlate, loading on a higher-order factor of "subjective relationship quality" (Fletcher, Simpson, & Thomas, 2000). Such constructs are valuable for many reasons, not least of which is that they strongly predict relationship persistence over time (Eastwick, Luchies, Finkel, & Hunt, 2014; Le, Dove, Agnew, Korn, & Mutso, 2010).

We suggest that transactive gain/loss is a useful complement to these conceptualizations of relationship quality. Viewing relationship quality in terms of transactive gain/loss dovetails with classic exchange and interdependence theories (Blau, 1964; Emerson, 1972; Levinger & Snoek, 1972; Rusbult, 1983; Thibaut & Kelley, 1959), which describe relationship quality as a reflection of the outcomes (rewards minus costs) that a given relationship provides relative to the outcomes available on one's own or in alternative relationships. Because it takes an explicitly goal-centered approach, TGD Theory highlights that these comparisons are a measure of a relationship's contribution to self-regulatory success.

A TGD perspective on relationship quality suggests the utility of looking at basic goal-driven processes like self, partner, and joint pursuits, as well as more complex processes like goal coordination mechanisms, when seeking to understand relationship phenomena. For example, to understand an individual's repeated relationship failures, a transactive gain/loss perspective would suggest examining his contribution to his partner's self-oriented goals, as well as his skill at adjusting his self-oriented goals to facilitate his partner's outcomes. The theory

essentially takes a goal-based view of relationships, suggesting that high quality relationships are those in which partners' goal pursuits are successful (Berscheid & Ammazzalorso, 1991; Fowers & Owenz, 2010).

The TGD perspective on relationship quality also aligns with motivational theories of close relationships (Feeney & Collins, 2004; LaGuardia, Ryan, Couchman, & Deci, 2000; Murray et al., 2006; Reis et al., 2000), which evaluate a relationship by the extent to which it allows individuals to satisfy certain fundamental goals. TGD Theory complements these approaches in that it is goal-content-free, making no assumptions about what particular goals partners pursue. Transactive gain/loss could be conceptualized for any subset of goals of interest, such as those for attachment security (Feeney & Collins, 2004).

One strength of this approach is that it can accommodate individual variations in the value of different facets of relationship well-being. Some partners might value trust above all in a relationship, whereas others might give priority to, for example, passion or intimacy. Because transactive gain/loss asks simply whether partners are doing better on their goals because they are involved in this relationship —whatever those goals are—it can accommodate such individual variations.

Tenet 5: Caveats and conclusions. Tenet 5 is unlikely to apply under certain circumstances. If relationship duration is controlled by external forces, as it is in many workplace relationships, or by broader societal forces, as it has historically been for marriages (Coontz, 2005), these dynamics will be less predictive. For example, even if Alice finds her boss extraordinarily unhelpful for her goals, and would be far more successful at work if he simply disappeared, the chance for her to determine the end-point of the relationship is quite limited.

It may appear that Tenet 5 does not apply during phases of relationships or life in which the most important goals are inherently tied to the relationship. For example, when romantic relationships first begin, passion and romance can often take precedence over such trivial matters as work, health, and family. In such times, it may seem as though something as calculating as Tenet 5—an assessment of the relationship's utility for goal outcomes—has no applicability. Quite the opposite, however: TGD suggests that transactive gain/loss is an overall assessment of the relationship's effect on important goals—regardless of content. If passion and romance are temporarily an individual's most important goals, then Tenet 5 would predict that he/she should stay in relationships that advance those goals. However, when goals change, as they often do in romantic relationships, as when the focus shifts from passion to parenting (Belsky & Rovine, 1990; Salmela-Aro et al., 2000), Tenet 5 predicts that the basis for evaluating relationship quality will also change.

In conclusion, because relationships affect so much of life, it likely benefits people to form and maintain relationships that advance all their important goals, like health, family, and career goals, rather than relationships that advance only a smaller set of relationship-oriented goals, like those for intimacy, passion, and romance. For that reason, we suggest that relationship duration will reflect relationships' utility for all important goals, rather than just for relationship goals. Finally, we suggest that a potential consequence of Tenet 5 is that these dynamics may serve broader social functions. Relationship partners who advance others' goals will likely be rewarded by continuing long-lasting relationships with others. In contrast, partners who do not support their partners' goals will be likelier to experience more break-ups, and ultimately, to be socially excluded.

Tenet 6: Transactive Density Interacts with Goal Coordination to Predict Goal Recovery

In Tenets 1-5, we explored the nature of transactive goal dynamics, as well as predictors of the emergence of such dynamics and their consequences for goals and relationships. In Tenet 6, we predict the consequences for goal outcomes when transactive systems are dissolved. For example, what happens to goal outcomes when a married couple divorces or when management breaks up a longstanding work team? According to Tenet 6, as shown in Figure 1, transactive density and goal coordination interact to predict goal outcomes in the period after a relationship ends. Specifically, and as shown in Figure 4, we suggest that the speed with which people begin to successfully pursue their goals after the relationship ends depends on how much interdependence (density) they had in their relationship, and how well that interdependence worked (coordination). In short, Tenet 6 aims to answer the question: When will increased goal interdependence (transactive density) promote versus undermine goal recovery?

For partners with low transactive density, like those on the left side of Figure 3, transactive goal dynamics in the system are minimally relevant. Their goals, pursuits, and outcomes are largely independent of each other, and can thus continue seamlessly in the event that the two partners end their relationship (Berscheid, 1983; 1986). In contrast, for partners with high transactive density, like those on the right side of Figure 3, the transactive goal dynamics in the system are highly influential: Because the partners' goals and pursuits are tightly linked in a messy web of interdependence, such partners will also have to adjust their goal pursuits, which will experience significant disruption when the system dissolves (Berscheid, 1983; 1986).

To unravel the strong ties among two partners' goals and pursuits is a challenging task. Most straightforwardly, partner-oriented goals and pursuits are, by and large, now irrelevant or inappropriate. Dissolution will thus also hurt partners' goal outcomes when their supportive ex-partners' partner-oriented goals are dropped. If Alice was helping John manage his weight with

her nutrition expertise, John will likely find himself gaining weight post-break-up as he tries to take over meal planning and preparation. If John often reminded Alice to call her mother, she may find herself in a testy mother-daughter conflict over time. Indeed, because even entirely self-oriented goals can be interdependent within TGD systems, their pursuits often also require adjustment post-break-up. For example, John may have long felt insecure about work, and Alice's faith in him may have gone a long way towards helping him persevere; if so, the loss of Alice's confidence may leave John faltering at work. Finally, many partners will also find their own goal outcomes damaged by the loss of the other partner's pursuits—for example, if Alice made more money than John, John will have to rethink his own career if he hopes to meet his retirement savings goal.

Thus, following relationship dissolution, both partners must adapt their goals and develop new habits of goal pursuit. This process is likely disruptive under all circumstances for partnerships high in transactive density, but especially so when the dissolution is abrupt or unexpected. Members of transactive systems who are aware that the system is likely to dissolve can unravel the links over time, gradually reorienting their goal pursuit to accommodate the eventual dissolution. Imagine the productivity of team members who know that their team will be divided and can thus teach each other relevant skills and learn independence, to those who are suddenly divided and must, in the wake of this division, figure things out for themselves.

As illustrated in Figure 1, whether the relationship's dissolution leads to positive or negative outcomes for individuals' goals depends on processes analogous to those in Tenet 3— whether the partners were well or poorly coordinated—albeit this time in reverse. According to Tenet 6, it is the very best couples—those who had pooled their skills and resources to become a unit that is greater than the sum of its parts—whose goals will suffer most when the relationship

ends. For well-coordinated transactive systems, high density is productive and functional. When that dense network of links is ripped apart, the goal outcomes of the two newly independent agents will suffer greatly (Berscheid, 1983; 1986). In contrast, for poorly-coordinated transactive systems, high density is unproductive and dysfunctional. Untangling the links that are producing conflict and obstruction will typically, in the long run, yield better goal outcomes for the two former partners.

Studies of romantic breakup have found effects consistent with those predicted by Tenet 6 (Gomillion, Murray, & LaMarche, 2015; Lewandowski, Aron, Bassis, & Kunak, 2006; Slotter, Gardner, & Finkel, 2010). In one longitudinal study, romantic break-up had a negative effect on the goal progress of participants who had had instrumental partners, but a non-significantly positive effect on those who had had non-instrumental partners (Gomillion et al., 2015).

Tenet 6: Caveats and conclusions. Tenet 6 is less applicable under two predictable circumstances. First, it applies less for people who can easily turn to others to fulfill the now-missing roles their partner once played (Oatley & Bolton, 1985); if John meets a new romantic partner who also has nutrition expertise and is willing to help him, he is less likely to gain weight after he and Alice break up. Thus, the availability of social support and/or new partners may buffer the effects of Tenet 6. Second, Tenet 6 is also less applicable if the goals an individual pursues are low in difficulty, meaning that regardless of how useful the relationship was, it is still relatively easy for the individual to pursue the goals independently.

In conclusion, because of transactive goal dynamics, relationship partners whose goal pursuits were highly interdependent and well-coordinated, leading them to become greater than the sum of their parts, suffer the greatest hit to their outcomes when relationships end. The anticipation of these effects may be one reason why people persist in relationships (Tenet 5): If

John values his retirement goal and his health goals, and is aware that Alice helps him advance both of those goals, he may fear how he would fare on those goals were he and Alice to break up. Thus, a fear of goal disruption could help keep relationships intact.

D. Discussion

This manuscript has laid out a vision for a new model of goal pursuit. TGD Theory describes the structure of interdependent goal pursuit (Tenet 1), predicts its emergence (Tenet 2) and predicts under what circumstances it promotes versus impairs goal outcomes (Tenets 3, 4, 6) and relationship persistence (Tenet 5). The theory posits a new unit of analysis for goal pursuit, emphasizing the relationship over the individual and, as a result, generates new constructs and perspectives. In doing so, it also generates new directions for research. In this Discussion section, we consider several significant implications and directions for future research and address unanswered questions and limitations.

Social Support and Health Outcomes. Health researchers have documented that social context and relationships affect health outcomes (Anderson et al., 1997; Christakis & Fowler, 2007; Holt-Lunstad, Smith, & Layton, 2010; Leahey et al., 2012), sometimes in a profound fashion. For example, heart surgery patients high in marital satisfaction were three times as likely to be alive 15 years later than were patients low in marital satisfaction (King & Reis, 2012).

Taking a TGD perspective on these links between social relationships and health, we suggest that health outcomes, like other goal outcomes, reflect the complex and dynamic system of goals and goal pursuits inherent to interdependent relationships (Lakey & Orehek, 2011). For example, Tenet 1 suggests the utility of considering Alice's self-, partner-, and system-oriented goals in John's goal outcomes, including, say, his timely recovery from cardiac surgery. Does Alice have goals—for herself, for John, for the system—that conflict with John's pursuit of his

recovery goals? Tenets 3 and 4 suggest that John's recovery is influenced by the extent to which the partners' goals coordinate. For example, do John and Alice share the same goals regarding his health outcomes, the same beliefs about the most effective means to those goals, and the same preferences for the extent to which she should be involved in his health goals? Are there ways for Alice to advance John's recovery at the same time as she pursues her own goals, and how do Alice's goals for herself conflict with her goals for John's recovery?

Similarly, a great deal of health research has highlighted the importance of social support (Cohen & Wills, 1985; Uchino, 2004), and TGD Theory offers a new theoretical framework for investigating these phenomena. Little is known about how support, a partner-oriented pursuit, relates to the recipient's self-oriented pursuits. For example, are partners more or less likely to offer social support to an individual who is successful, versus one who is failing, in his/her own pursuit of the goal? Are they more or less likely to offer social support when a partner is pursuing a goal they share for themselves (i.e., a parallel goal)? These are basic TGD-inspired questions that have not been studied by social support researchers, who tend not to conceptualize support for one goal as part of a broader system of goals within a relationship. We suggest that exploring the broader interpersonal network of goals within a TGD system may be a fruitful next step for research.

Tenet 4's construct of *goal responsiveness*—the extent to which one partner's partner-oriented pursuit reflects the other partner's mental representation of the goal—may also be useful for scholars seeking to understand why receiving social support can lead to bad outcomes for the recipient (Bolger et al., 2000; Girme et al., 2013; Howland & Simpson, 2010; Rafaeli & Gleason, 2009). Did Alice intrusively offer information and advice when John felt perfectly capable in his own pursuit (Feeney, 2004)? Did Alice downplay the value of the goal or the goal outcome to

John, suggesting it was "no big deal" (Simpson et al., 1992)? Did Alice provide support that produce interdependence beyond what John desired?

Social networks. This manuscript has focused on dynamics within a single dyad, but the principles also apply to interactions among separate TGD systems—dynamics across relationships. For example, if an individual has a colleague, a boss, a spouse, a parent, a close friend, and a child, he may be part of six TGD systems. For any given TGD system, *extra-system goals*—those oriented towards others outside that focal relationship—are likely transactive vis-à-vis the focal TGD system, as there are typically spillover effects of one system on another. Imagine that Alice is suffering through a difficult pregnancy. Events like this can reverberate throughout John's other TGD systems. His boss may have to monitor his work more carefully for errors, and his friend may have to go the gym alone. Spiraling outward through the social network, John's boss' and friend's respective TGD partners will in turn be affected; for example, his boss' other employees might receive less monitoring, and his friend's roommate might step into the gym buddy role. Thus, while at first glance it may appear that John's friend's roommate's goal pursuit is unrelated to Alice's pregnancy, in reality, those links are pervasive.

Indeed, we suggest that TGD systems are linked to each other in a *TGD network*, and as such, effects within one system ripple throughout the network. By examining networks from a TGD perspective, scholars could explore interpersonal and self-regulatory processes that may drive network effects. For example, applying Tenet 2, one could test the hypothesis that the opportunity to develop TGD networks, such as those provided by less hierarchical and more open organizational designs, would create more density within the network, and thus, more potential goal conflicts (and potential goal facilitation) in the organization. Similarly, one could explore mechanisms underlying some of the network-based "goal contagion" effects shown in

the network literature (e.g., Christakis & Fowler, 2007), tracing pathways of influence based on the transactive density in dyads or small groups within the organization.

Teams and groups. Similarly, although we emphasized dyads for the sake of (relative) simplicity in this first exploration of TGD Theory, transactive systems are not limited to dyads. An individual can be embedded in a TGD system with his four-person work team and with his ten-person hockey team. We define a *TGD group* as one in which every member has interdependence with all other members on at least one goal. A TGD group is a sub-case of a TGD network, in the sense that a TGD group can also be described as multiple dyads that are networked together.

We suggest that the integration of TGD's goal-based perspective with the organizational behavior literature's more cognitively-focused work on shared representations in teams (e.g., team mental models) could be very fruitful. As a first step, we suggest two simple applications of TGD to the understanding of team performance. From Tenet 4, what are each person's self-oriented and team-oriented goals—and what are their goals for each other member of the team? If they share goals—not self-oriented goals but target-oriented goals—they will be likelier to coordinate and succeed. From Tenet 3, do the team members' pursuits allow for multifinality? If Alice can advance her own self-oriented goal to improve her presentation skills at the same time as she advances Maria's goal for the team to work collaboratively, she will make progress towards two goals at once, and thus make efficient use of the team's pooled goal resources.

Limitations and unanswered questions. The theory leaves many issues unaddressed. We describe several here. First, we neglected questions about how different types or domains of goals, like approach versus avoidance goals (Carver & Scheier, 1998; Elliot & Thrash, 2002; Gable, 2006), may elicit different types of interdependent patterns within TGD systems,

especially given the breadth of evidence that such goals elicit unique cognitive and affective processes. Second, we did not explore non-linear effects within TGD systems. For example, there may be a risk of "too much interdependence" impairing partners' ability to work independently when needed. Similarly, we have not considered in full how all the new constructs proposed here might interact with one another. Within Tenets 3 and 4, it is likely that the predictors and dimensions of goal coordination may well interact: For example, highly satisfied and committed relationship partners are likelier to possess shared goals, because they place more value each other.

Third, the theory fails to fully explore the role of time and relationship stage in transactive goal dynamics. In the first phase of relationships, partners learn about each other's goals, and in some cases, may prioritize the pursuit of partner- and system-oriented goals over the pursuit of their own self-oriented goals. Once the relationship stabilizes, those neglected goals may come roaring back, and the next phase of the relationship may involve learning to balance the relationship-oriented goals with other goals.

Fourth, in keeping with the theory's dyadic focus, we have de-emphasized several individual-level variables that are likely highly relevant here, such as self-regulatory skills (Vohs & Baumeister, 2011). It is very likely that self-regulatory skills affect transactive goal dynamics as well, facilitating the growth of interdependence, and shaping coordination. Multifinality is less likely to occur and transactive goal conflict is more likely to occur, given that each partner's pursuit is less effective at advancing goals. If John walks to work to save money and lose weight, but stops along the way to buy himself an overpriced and caloric coffee drink, he has not only hurt his own goal to lose weight, but also Alice's goal for the couple to save money.

Finally, our discussion of goal outcomes (transactive gain/loss) has conceptualized overall goal success as a dyadic property. This dyadic emphasis is deliberate, as the foundational principle of TGD Theory is that the dyad functions as a single "self-regulating" unit. However, there is no guarantee that transactive gain at the dyadic level yields better overall goal success for both partners. The extent to which dyadic gains and losses influence overall goal success for each partner depends upon how goal-relevant resources are distributed between the two partners. We suspect that aspects of the relationship would affect the balance of these gains and losses. For example, if Alice is lower in status or power, she may value Maria's outcomes more than her own, and thus, invest more effort in pursuits oriented at Maria's outcomes than her own.

Conclusions

TGD Theory suggests that within a relationship, the goals that two partners possess and pursue are tightly and multiply linked in a complex network of associations across partners. One such relationship is depicted in the right side of Figure 3, but we note that this simple depiction likely undersells the extent of interdependence in many relationships. Imagine the density of the system depicted if it included all the Alice and John examples throughout this manuscript. Thinking of Alice and John, or any two interdependent partners, as separate goal pursuers means ripping the TGD system apart, and thus losing sight of this network of links; depicting the two partners as part of one system means recognizing the fundamental nature of these links to the understanding of goal pursuit. TGD Theory aims to explain these links, stating that relationship partners, because of their strong goal interdependence, are not independent goal-pursuers with occasional influence on each other, but are instead interdependent sub-parts of a single self-regulating system.

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Table 1. Significant Examples of Types of Goals and Pursuits in TGD systems (see Figure 2). Table Note: Greyed-out rows are examples that have already been given from the partner's perspective; e.g., 1-A is from John's perspective and 1-D is the same type from Alice's perspective.

#	Goal Type	General Definition	Concrete Example	Pursuit Variations	Cell(s) from Figure 2
1	Self-oriented goal	John has a goal for his own outcomes	John wants to lose weight	1-A. John pursues his goal for himself to lose weight	1
				1-B. Alice pursues John's goal for himself to lose weight	3
				1-C. John and Alice both pursue John's goal for himself to lose weight	1 & 3
		Alice has a goal for her own outcomes	Alice wants to lose weight	1-D. Alice pursues her goal for herself to lose weight	8
				1-E. John pursues Alice's goal for herself to lose weight	6
				1-F. Alice and John both pursue Alice's goal for herself to lose weight	6 & 8
2	Partner-oriented goal	John has a goal for Alice's outcomes	John wants Alice to lose weight	2-A. Alice pursues John's goal for her to lose weight	4
				2-B. John pursues his goal for Alice to lose weight	2
				2-C. Alice and John both pursue John's goal for Alice to lose weight	2 & 4
		Alice has goal for John's outcomes	Alice wants John to lose weight	2-D. John pursues Alice's goal for him to lose weight	5
				2-E. Alice pursues her goal for John to lose weight	7
				2-F. John and Alice both pursue Alice's goal for John to lose weight	5 & 7
3	System-oriented goal	John has the same goal for both his own and Alice's outcomes	John wants both Alice and himself to lose weight	3-A. John pursues his goal for both Alice and himself to lose weight	1 & 2
				3-B. Alice pursues John's goal for both Alice and himself to lose weight	3 & 4
				3-C. John and Alice both pursue John's goal for both Alice and himself to lose weight	1 & 2 & 3 & 4
		Alice has the same goal for both for her own and John's outcomes	Alice wants both John and herself to lose weight	3-D. Alice pursues her goal for both John and herself to lose weight	7 & 8
				3-E. John pursues Alice's goal for both John and herself to lose weight	5 & 6
				3-F. Alice and John both pursue Alice's goal for both John and herself to lose weight	5 & 6 & 7 & 8
4	Parallel self-oriented goal	John has a goal for his own outcomes, and Alice has the same goal for her own outcomes	John wants to lose weight, and Alice wants to lose weight	4-A. John pursues both his goal for himself to lose weight and Alice's goal for herself to lose weight	1 & 6
				4-B. John pursues his goal for himself to lose weight, and Alice pursues her goal for herself to lose weight	1 & 8
				4-C. John pursues Alice's goal for Alice to lose weight and Alice pursues John's goal for John to lose weight	3 & 6
				4-D. John and Alice pursue John's goal for himself to lose weight and Alice's goal for herself to lose weight	1 & 3 & 6 & 8
				4-E. Alice pursues both her goal for herself to lose weight and John's goal for himself to lose weight	3 & 8
5	Parallel partner-oriented goal	John has a goal for Alice's outcomes, and Alice has the same goal for John's outcomes	John wants Alice to lose weight, and Alice wants John to lose weight	5-A. John pursues both his goal for Alice to lose weight and Alice's goal for him to lose weight	2 & 5
				5-B. John pursues his goal for Alice to lose weight, and Alice pursues her goal for John to lose weight	2 & 7
				5-C. John pursues Alice's goal for him to lose weight, and Alice pursues John's goal for her to lose weight	4 & 5
				5-D. John and Alice pursue both John's goal for Alice to lose weight and Alice's goal for John to lose weight	2 & 4 & 5 & 7
				5-E. Alice pursues both her goal for John to lose weight and John's goal for her to lose weight	4 & 7
6	Shared target-oriented goal	John has a goal for his own outcomes or for Alice's outcomes, and Alice has the same goal for the same target (either herself or John)	Both John and Alice want John to lose weight	6-A. John pursues the goal that both of them have for John to lose weight	1 & 5
				6-B. Alice pursues the goal that both of them have for John to lose weight	3 & 7
				6-C. John and Alice both pursue the goal that both of them have for John to lose weight	1 & 3 & 5 & 7
			Both John and Alice want Alice to lose weight	6-D. John pursues the goal that both of them have for Alice to lose weight	2 & 6
				6-E. Alice pursues the goal that both of them have for Alice to lose weight	4 & 8
				6-C. John and Alice both pursue the goal that both of them have for Alice to lose weight	2 & 4 & 6 & 8
7	Shared system-oriented goal	John has a goal for both his own and Alice's outcomes, and Alice has the same goals for both her and John	John and Alice both want both to lose weight	7-A. John pursues the goal that both he and Alice have for both of them to lose weight	1 & 2 & 3 & 4
				7-B. John and Alice both pursue the goal that both of them have for both of them to lose weight	1 &2 &3 &4 &5 &6 &7 &8
				7-C. Alice pursues the goal that she and John have for both of them to lose weight	5 & 6 & 7 & 8

Figure 1. An overview of Transactive Goal Dynamics Theory. The Tenet 1 (T1) box represents the structure of transactive density. Tenet 2 (T2) indicates that opportunity and motivation are the key antecedents of transactive density. Tenet 3 (T3) indicates that goal coordination moderates the effect of transactive density on transactive gain/loss (goal outcomes during the relationship). Tenet 4 (T4) indicates that shared goal representations and relationship orientation/skills are the key antecedents of goal coordination. Tenet 5 (T5) indicates that transactive gain/loss predicts relationship persistence. Tenet 6 (T6) indicates that goal coordination moderates the effect of transactive density on goal recovery (goal outcomes after the relationship ends).
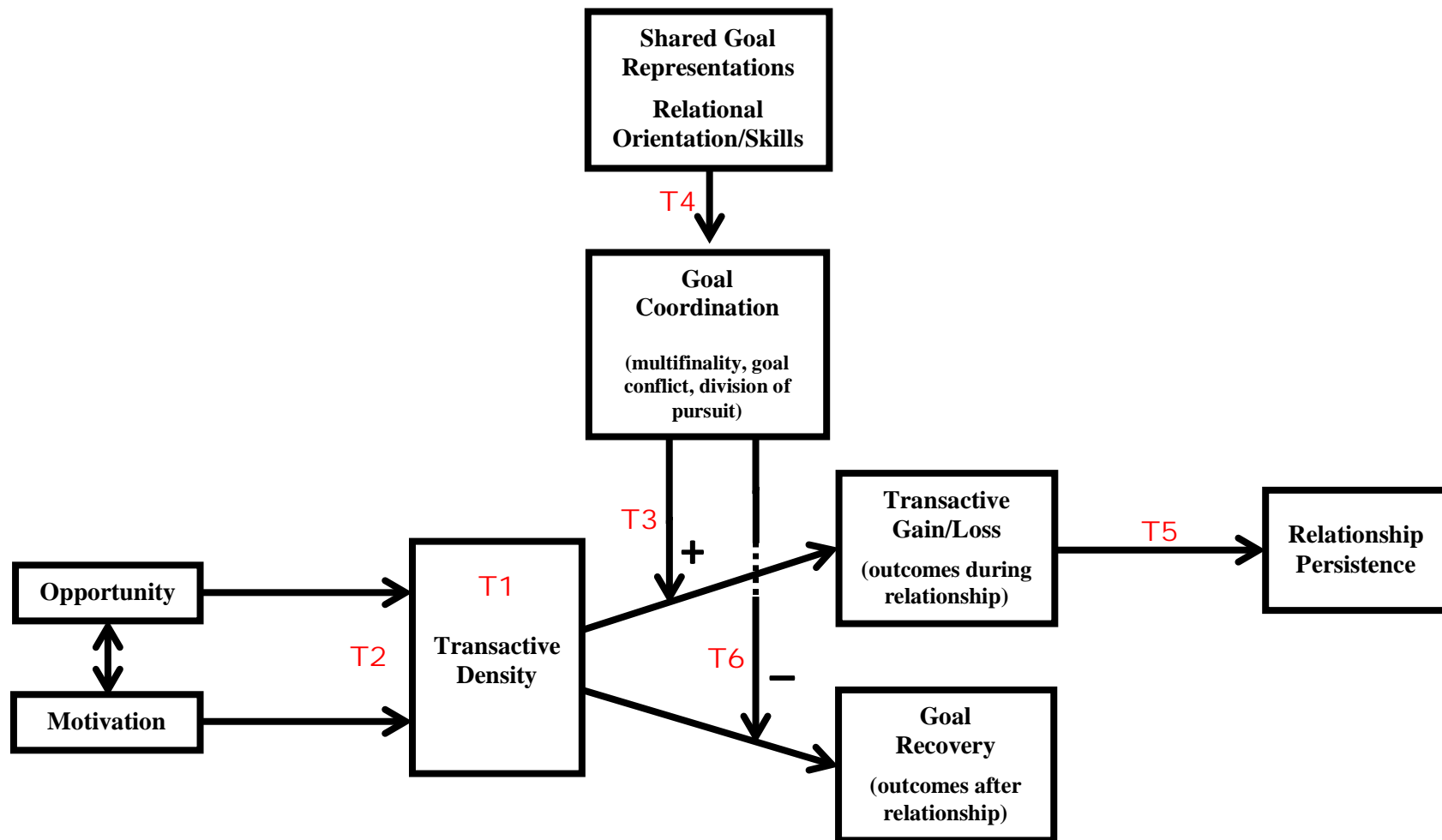
Figure 2. The 3-way structure of goals in TGD systems: Who possesses the goal (left vs. right side of figure) × who is the target of the goal (left vs. right column) × who pursues the goal (top versus bottom row).
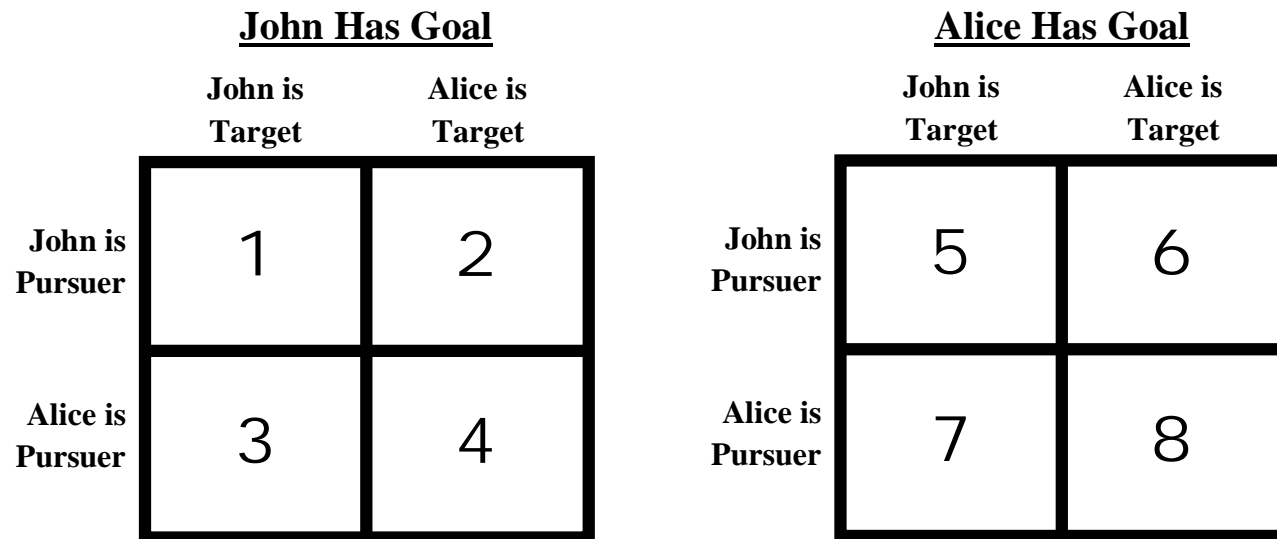
John Has Goal

	John is Target	Alice is Target
John is Pursuer	1	2
Alice is Pursuer	3	4

Alice Has Goal

	John is Target	Alice is Target
John is Pursuer	5	6
Alice is Pursuer	7	8

Figure 3. A depiction of transactive density. Alice and John are relationship partners in two types of relationships. On the left, their goal dynamics are largely independent. On the right, their goal dynamics are highly interdependent, as reflected by the greater number of arrows connecting their goals, pursuits, and outcomes. The blue arrows are effects from Alice's to John's goal dynamics. The green arrows are effects from John's to Alice's goal dynamics.
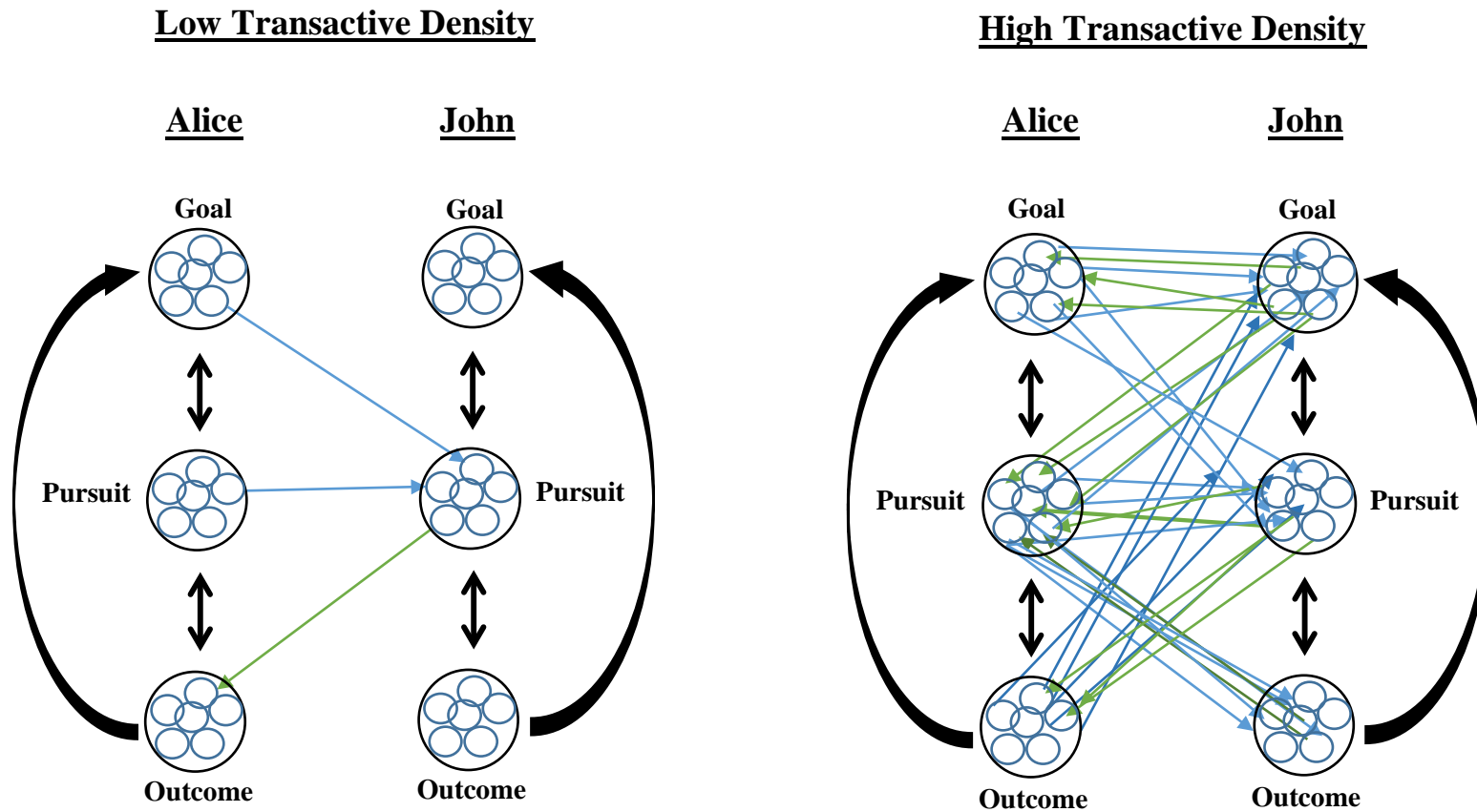
Figure 4. Transactive gain/loss. Tenet 3 predicts a moderational effect of goal coordination on the relationship between density (on the X-axis) and goal outcomes (on the Y-axis.) The solid blue line represents dyads with good goal coordination: Density promotes goal outcomes, producing transactive gain— better goal outcomes relative to the individual baseline (the outcomes the two partners would achieve as independent individuals). The dashed blue line represents dyads with poor goal coordination: Density decreases goal outcomes, producing transactive loss—worse goal outcomes relative to the individual baseline.