Goal Transactivity

Eli J. Finkel
Northwestern University

Gráinne M. Fitzsimons
Duke University

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*Make no little plans. They have no magic to stir men’s blood.*

— Daniel H. Burnham

As an aimless young man in the 1860s, Daniel H. Burnham failed his college entrance exams. “I went to Harvard for examination,” he later recalled, “with two men not as well prepared as I; both passed easily, and I flunked having sat through two or three examinations without being able to write a word.” He also failed his exam for Yale. He found employment in Chicago as a salesman, but quit after four months. After a brief period of introspection, he wrote to his mother, at age 23, that he had found his passion: “I shall try to become the greatest architect in the city or country. Nothing less will be near the mark I have set for myself, and I am not afraid but that I can become so.” He even mapped out a rough strategy: “There needs but one thing. A determined and persistent effort” (Hines, 2009, pp. 11-12).

But despite Burnham’s considerable self-efficacy and goal commitment, he remained unmoored. Not long after sending that letter, he went to Nevada in search of silver. While there, he ran for political office. Echoing his academic endeavors in the East, his pursuit of financial and political success in the West ended in failure. Chastened, he returned to Chicago in 1872 and, with his father’s help, procured an entry-level position in the architectural office of Carter, Drake and Wight, one of the firms working to rebuild the city following the great fire of 1871. Under the tutelage of Peter Wight, Burnham rediscovered his passion for architecture. More importantly, he met the young John Root, with whom he would ultimately build the most influential architectural firm of the late 1800s.

Burnham had long been desperate to earn the respect of the intellectual elite, so he was pleased when Harvard and Yale awarded him honorary degrees in the 1890s. By then, he had achieved—at least to his own satisfaction—his goal of becoming “the greatest architect in the city or country.” But although the young Burnham was correct that “a determined and persistent effort” was
essential in pursuit of such goals, he was incorrect in assuming that nothing else would be
required. Indeed, the story of his success may be less about determination than about
collaboration. And although his circumstances are unique, the broader truth that human
achievement is inextricably bound up in social relationships is not.

Reconceptualizing the Unit of Analysis for Research on Goal Pursuit

In contrast to the dominant theories of self-regulation and goal pursuit in social psychology,
Transactive Goal Dynamics Theory (TGD Theory) conceptualizes the unit of analysis for “self”-
regulation as the social group rather than the individual (Fitzsimons, Finkel, & vanDellen, 2015).
The basic principle underlying TGD Theory is goal transactivity: that the interdependence of goal
setting, pursuit, and outcomes among members of meaningful social units (romantic partners,
family members, friends, coworkers, teammates, etc.) is typically so strong that it ceases to make
sense to consider the group members as independent self-regulating entities. Each individual is a
subcomponent of a broader self-regulating system. As elaborated below, reconceptualizing the
unit of analysis as the social group rather than the individual has profound consequences for the
theories and research methods we use to understand how people set, pursue, and achieve goals.

Consider some empirical examples that underscore the importance of adopting a relational
level of analysis. The conscientiousness level of an employee’s spouse is positively linked to the
employee’s likelihood of promotion, even after controlling for his or her own conscientiousness
level (Solomon & Jackson, 2014). Employees’ productivity is greater to the extent that their
coach’s motivational orientation matches their own (Sue-Chan, Wood, & Latham, 2012). At-risk
students’ mathematics performance is stronger when they are taught by an instructor who teaches
with high rather than low energy (Klusmann, Richter, & Lüdtke, 2016). Young adolescents with
diabetes exhibit better metabolic control to the extent that their parents are more involved in
monitoring their blood glucose levels (Anderson et al., 1997). Mainstream theories and research
methods from the self-regulation literature likely would miss these sorts of effects, treating them as part of the error term.

In expanding the unit of analysis for goal dynamics from the individual to the social unit, TGD Theory owes a major debt to John Thibaut and Harold Kelley’s (1959) Interdependence Theory (also see Kelley et al., 2003; Kelley & Thibaut, 1978). “[H]umans are enmeshed in the fabric of their social milieu,” observe Caryl Rusbult and Paul Van Lange (1996) in their chapter on the nature of human interdependence. “Accordingly,” they continue, “it is surprising that many theories of social psychological processes present the individual social agent as their theoretical centerpiece, largely ignoring the interpersonal circumstances encompassing the individual’s preferences, thoughts, and actions. Social psychological explanations focusing on the individual are likely to be as limited as explanations of cellular processes focusing on a single cell—such explanations may tell us a good deal about the cell under consideration, yet fail to discern the broader meaning of its structure and functioning.” This insight—that frameworks seeking to understanding human tendencies at the level of the individual neglect not only vast swaths of explainable variance, but also many of the most exciting research questions—serves as a major source of inspiration for the development of TGD Theory.

**Historical Perspective**

Social-psychological research on self-control and self-regulation has been remarkably influential since the 1960s. Consider, for example, the seminal studies that Walter Mischel (1974) conducted on preschoolers in the 1960s and 1970s. Across an ingenious research program, Mischel and his collaborators confronted young children with a dilemma. The children sat, alone, at a table with a marshmallow on it, weighing whether to eat the marshmallow now or to wait an unknown duration for the experimenter to return with a second marshmallow as a reward for their patience. Children who waited longer for a second marshmallow—who were better at delaying
gratification—grew into teenagers who performed better academically and, eventually, into adults with stronger social relationships (Mischel, 2014).¹

This particular research paradigm was unique, but the tendency to build theories and research paradigms that isolate the individual was not. This tendency is a manifestation of the highly individualistic zeitgeist of social-psychological research on goal setting, pursuit, and achievement before the twenty-first century. Collectively, the achievements of this zeitgeist are monumental, but, in our view, they have also left a less fortunate legacy, one that has gone largely unnoticed in the interim half-century: The marshmallow studies contributed to a vision of goal pursuit that is strongly individualistic, and, consequently, contributed to the development of a subfield of social psychology that is replete with theories and empirical paradigms oriented toward understanding goal setting, pursuit, and outcomes as largely individual-level phenomena. Hence the dominance of the terms self-regulation and self-control when referring to this subfield, which probably should be called something more general, perhaps goal dynamics.

With these observations in mind, it is useful to consider another example—beyond conscientious spouses, motivationally aligned coaches, high-energy teachers, and glucose-monitoring parents—of the fundamental role that relationship partners play in each other’s goal outcomes. This example is, in our view, crucial in helping us understanding when children actually eat marshmallows in the real world: Among overweight or obese children enrolled in a parent-child treatment program, the tendency to lose weight was stronger to the extent that their parent also lost weight, largely because their tendency to eat healthier food was linked to their parent’s tendency to do so (Best et al., 2016). Related evidence comes from a study demonstrating

¹ As we were revising this chapter, a conceptual replication attempt revealed additional evidence that the marshmallow test predicts long-term outcomes, although the effects were smaller in magnitude than in the initial research, emerged on fewer of the dependent variables, and were largely explained by differences in socioeconomic status (Watts, Duncan, & Quan, 2018).
that preadolescent children eat more sweets when their mother is experiencing greater-than-usual
difficulty coping with stress (Mason et al., 2019). It seems that children eat more healthfully, and
overweight and obese children lose more weight, to the extent that their parents purchase and
serve healthy food and currently possess the psychological resources to promote healthful eating
habits in the family. This parental tendency is precisely the sort of variable that gets shunted into
the error term when our theories of goal dynamics treat relationship processes as noise to be
eliminated rather than as signal to be investigated.

When we study goal dynamics by isolating participants in laboratory rooms or computer
cubicles, we have indeed created a well-controlled empirical situation. But, frequently, we have
done so at the expense of studying the variables and processes that are especially influential in
determining the behavior we seek to understand (e.g., eating behavior).

The Dominance of Individual-Level Perspectives in the Social Psychology of Self-Regulation

To be sure, research on self-regulation has flourished in recent decades, producing an
abundance of influential theoretical principles. People are especially likely to enjoy goal success
when they, for example: set clear goals and clear plans for pursuing them (Gollwitzer, 1999); feel
confident that they can achieve their goals (Bandura, 1977); closely monitor the effectiveness of
their pursuit and make adjustments as needed (Carver & Scheier, 1982); pursue important goals
when their self-regulatory resources are intact rather than depleted (Baumeister & Heatherton,
1996); believe that goal-relevant abilities are malleable rather than fixed (Dweck & Leggett,
1988); deliberately distract themselves from temptations (Mischel, Shoda, & Rodriguez, 1989);
automatically, when encountering a temptation, think about the goal that would be violated if they
succumbed to the temptation (Fishbach, Friedman, & Kruglanski, 2003); and pursue goals with
means that match their preferred self-regulatory orientation, as when a gain-oriented person adopts
an eager means of pursuit or a loss-oriented person adopts a vigilant means of pursuit (Higgins,
2000). This list is far from exhaustive, but it points to both the immense intellectual ferment in the science of goal pursuit and the strong tendency to treat the individual goal-pursuer as the unit of analysis. Such tendencies are echoed in the related literatures in personality psychology (Roberts et al., 2014) and social neuroscience (Wagner & Heatherton, 2016).2

To the extent that evidence continues to demonstrate the robustness and importance of these individual-level principles, they will remain necessary components of any comprehensive theory of goal dynamics. But, from the perspective of TGD Theory, they are insufficient; they must be incorporated into a broader theoretical framework that also accounts for the social processes relevant to the setting, pursuit, and achievement of goals. Here, social psychology and its kindred disciplines come up short. For example, the most recent edition of the highly influential *Handbook of Self-Regulation* (Vohs & Baumeister, 2016) includes a chapter on TGD theory (Finkel, Fitzsimons, & vanDellen, 2016), but none of the other chapters from social psychologists is fundamentally social. Existing theories sometimes do explore how individual-level self-regulatory processes influence social outcomes (e.g., aggression), but, by and large, the relational focus is incidental to the basic causal mechanism under investigation. Before the arrival of TGD theory in 2015, there existed no social-psychological theory of goal dynamics that incorporated social processes into its core principles.3

**Toward the Conceptualization of a Shared Psyche**

In a sense, the tendency of social psychologists to treat social processes as incidental rather than central to goal dynamics is bizarre. After all, such scholars have done major work

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2 As illustrated here, many of the seminal papers investigating self-regulation—virtually all of them treating goal setting, pursuit, and achievement as predominantly individual-level phenomena—were co-authored rather than sole-authored, which raises questions about the extent to which the processes elucidated in those papers would be sufficient to explain how the authors were able to achieve the goal of writing those very papers!

3 Perhaps surprisingly, developmental and health psychologists have done more than social psychologists to incorporate social dynamics into theories of goal pursuit, albeit typically constraining their theorizing to specific relationships (e.g., parent-child), process (e.g., social support), or behavioral domains (e.g., smoking).
underscoring the porous boundaries between *self* and *other*. Research in relationship science, for example, suggest that the self-concept gets expanded to incorporate aspects of close relationship partners (Agnew et al., 1998; Aron et al., 1991). Findings at the intersection of social psychology and judgment/decision-making suggest that members of social units can, beyond any individual-level effects, strategically reason about problems and delegate decisions in ways that bolster collective goal achievement (Grossman & Kross, 2014; Polman & Vohs, 2016). Social-psychological scholarship on management and organizations suggest that groups vary in their collective intelligence, independent of each member’s individual intelligence; group performance depends on both bottom-up compositional features like members’ skills and top-down interaction features like inclusive communication norms (Woolley, Aggarwal, & Malone, 2016).

Of particular relevance to the present chapter is the social psychologist Daniel Wegner’s construct of *transactive memory* (Wegner, 1987; Wegner, Erber, & Raymond, 1991). According to Wegner, members of interdependent social units (romantic partners, team members, etc.) develop a shared memory pool—literally a shared mind—that allows individuals to understand which members are likely to remember which information and to allocate, often implicitly, the responsibility for remembering information in accord with that understanding. Although research on transactive memory (e.g., Austin, 2003; Hollingshead, 1998; Liang, Moreland, & Argote, 1995) does not engage deeply with many of the topics that are essential to building a model of goal dynamics, the idea that individual minds serve as sub-parts of a social memory system was a second major source of inspiration for the development of TGD theory.

And generalizing the idea to the goal domain affords novel perspectives on goal-relevant constructs like skills and resources (vanDellen & Baker, 2011). For example, one individual’s skills or resources can influence another’s goal setting, pursuit, and outcomes, as when a husband’s expertise regarding dieting and exercise may be sufficient for both him and his wife to
enjoy a healthy lifestyle. Or multiple individuals’ skills or resources can combine in ways that bolster or undermine goal setting, pursuit, and outcomes, as when employees perform better when embedded in a work team with others whose dispositional approach to goal pursuit—a tendency to set aside time for critical evaluation vs. sustain forward movement—differs from their own (Pierro et al., 2012). Topics like these become increasingly central once we have reconceptualized the unit of analysis for goal pursuit to be the social group rather than the individual.

The next two sections make up the bulk of the chapter. First, the Transactive Density section presents a social framework for conceptualizing goal setting and pursuit, develops a typology of goals emerging from that framework, and conceptualizes goal outcomes (or achievement) within it. Next, the Transactive Goal Dynamics Theory section discusses the theory’s six tenets, and briefly reviews the empirical literature relevant to each of them.

**Transactive Density**

*Transactivity density* refers the level of interdependence among group members vis-à-vis goal setting, pursuit, and outcomes—the extent to which group members’ goal systems are intertwined. Density assessments can extend to various goal properties (value, efficacy, standards), and to the effort one exerts and the means one employs in pursuit of the goal (Finkel et al., 2016). However, we simplify the discussion here to consider binary (present vs. absent) assessments of goal setting, pursuit, and outcomes for each group member with regard to the self and the other members. All of the ideas generalize to larger groups, but we focus primarily on the dyadic case.

**A Factorial Framework for Goal Setting and Goal Pursuit: Setting × Target × Pursuit**

We begin by setting aside goal outcomes to focus on goal setting and goal pursuit. TGD Theory does so by considering three questions: (a) Who sets the goal? (b) Who is the target of the goal (i.e., toward whose outcomes is the goal oriented)? and (c) Who pursues that goal? In Figure 1, we represent these three questions in terms of a 2 (goal setting) × 2 (goal target) × 2 (goal pursuit) factorial design.
pursuit) framework, which we consider from the perspective of our architects Daniel Burnham and John Root. The left panel encompasses goals that Burnham sets, and right panel encompasses the goals that Root sets—regardless of whether a given goal targets the outcomes of Burnham, Root, or both, and regardless of whether the goal is pursued by Burnham, Root, both, or neither. The left column in each panel encompasses goals for which Burnham is the target, and the right column in each panel encompasses goals for which Root is the target—regardless of whether a given goal is set by Burnham, Root, or both, and regardless of whether the goal is pursued by Burnham, Root, both, or neither. The top row in each panel encompasses goals for which Burnham is the pursuer, and the bottom row in each panel encompasses goals for which Root is the pursuer—regardless of whether a given goal is set by Burnham, Root, or both, and regardless of whether a given goal targets the outcomes of Burnham, Root, or both.

Our reading of the self-regulation literature is that the vast majority of research fits within Cell 1 (Burnham sets a goal for himself and pursues it alone) or Cell 8 (Root sets a goal for himself and pursues it alone). The major theoretical principles in the self-regulation literature tend to ignore instances in which, for example, one person sets a goal for his or her partner (I want my partner to be nicer to me), one person sets a goal for himself that is pursued by a relationship partner (I want to lose weight, so my partner stops stocking the pantry with Oreos), or both people set a goal for both of them that is pursued by one of them (my wife and I want to save enough money for a trip to Iceland, so she cuts back on golfing expenses). Although such cases pervade everyday life, they are largely absent from theories and empirical paradigms in the self-regulation literature.

A Structural Typology of Goals: A TGD Theory Perspective

Our Psychological Review article (Fitzsimons et al., 2015, especially Table 1) provides a detailed discussion of the different types of goals that emerge from the typology depicted in Figure 1. It identifies seven prototypical types of goals—nested within three categories (one person’s
goals, parallel goals, and shared goals)—that emerge from adopting a TGD theory perspective. We provide an abbreviated discussion here.

**One person’s goals.** The simplest category of goal types encompasses goals set by one person, and TGD Theory identifies three major subcategories in this space. *Self-oriented goals* are those that a given person sets for him- or herself, as when Burnham sets a goal to hone his drawing skills (Cell 1, Cell 3, or both). *Partner-oriented goals* are those that a given person sets for his or her partner, as when Burnham sets a goal for Root to win an architectural award (Cell 2, Cell 4, or both). *System-oriented goals* (or, in the dyadic case, “dyad-oriented goals”) are those that a given person sets for both (or all) members of the transactive system, as when Burnham sets a goal for “Burnham and Root” to become the preeminent architectural firm of its time (Cells 1 and 2, Cells 3 and 4, or both of these pairs of cells).

As is clear from the previous paragraph’s parenthetical information about which cells in Figure 1 are relevant in each case, this discussion of goal types is orthogonal to a consideration of who pursues a given goal. Burnham’s goal to hone his drawing skills might be pursued by him practicing at home after his kids are asleep (Cell 1), by Root purchasing higher-quality supplies for the office (Cell 3), or by Root tutoring Burnham on a new technique (Cells 1 and 3). Burnham’s goal for Root to win an architectural award might be pursued by Burnham writing a nomination letter (Cell 2), by Root schmoozing members of the award committee (Cell 4), or by the two of them hosting the committee members for a guided tour of their firm (Cells 2 and 4). Burnham’s goal for “Burnham and Root” to become the preeminent architectural firm might be pursued by him doubling the number of draftsmen in the firm and procuring enough business to keep them busy (Cells 1 and 2), by Root working an extra 10 hours per week to bolster the firm’s reputation for finishing buildings on time (Cells 3 and 4), or by the two of them working together to create a novel vision for the corporate skyscraper (Cells 1, 2, 3, and 4).
Parallel goals. The second category of goal types encompasses goals set by both people for separate targets, and TGD Theory identifies two major subcategories in this space. Parallel self-oriented goals are those simultaneously set by both people for themselves but not for the partner, as when both Burnham and Root set a goal to lose weight (Cell 1, Cell 3, or both—and Cell 6, Cell 8, or both). Parallel partner-oriented goals are those simultaneously set by both people for the partner but not for themselves, as when both Burnham and Root set a goal for the other person to bring more adventure into his life (Cell 2, Cell 4, or both—and Cell 5, Cell 7, or both).

With regard to pursuit, Burnham and Root’s parallel self-oriented goal to lose weight might be pursued by Burnham ridding the office of unhealthy snacks (Cells 1 and 6), by Root ordering leaner lunches for the two of them (Cells 3 and 8), or by the two of them holding their daily state-of-the-firm meeting while running outside rather than while seated in Burnham’s office (Cells 1, 3, 6, and 8). Burnham and Root’s parallel partner-oriented goal to have the other person experience more adventure might be pursued by Burnham getting a group of their shared friends together for a hiking trip in the Rocky Mountains (Cells 2 and 5), by Root signing them up for a nineteenth-century version of The Amazing Race (Cells 4 and 7), or by the two of them starting a Fight-Club-style bare-knuckle boxing club (Cells 2, 4, 5, and 7).

Shared goals. The third category of goal types encompasses goals set by both people for the same target (rather than for a different target, as with parallel goals), and TGD Theory identifies two major subcategories in this space. Shared target-oriented goals are those simultaneously set by both people for one partner or the other, as when both Burnham and Root want Root to recover from a case of pneumonia (Cell 2, Cell 4, or both—and Cell 6, Cell 8, or both). Shared dyad-oriented goals (or, more generally, shared system-oriented goals) are those simultaneously set by both people for both of them, as when both Burnham and Root set the goal to procure the
commission for the World Fair (Cells 1 and 2, Cells 3 and 4, or both of these pairs of cells—and Cells 5 and 6, Cells 7 and 8, or both of these pairs of cells).

With regard to pursuit, Burnham and Root’s shared target-oriented goal for Root to recover from a case of pneumonia might be pursued by Burnham coordinating Root’s medical care (Cells 2 and 6), by Root forcing himself to drink plenty of fluids (Cells 4 and 8), or by both of them engaging in these pursuits (Cells 2, 4, 6 and 8). Burnham and Root’s shared system-oriented goal to procure the commission for the World Fair might be pursued by Burnham using his political skills to close the deal (Cells 1, 2, 5, and 6), by Root wowing the selection committee with a particularly innovative design (Cells 3, 4, 7, and 8), or by the two of them working together to build a scale model of their proposal (Cells 1, 2, 3, 4, 5, 6, 7, and 8).

**Goal Outcomes in Transactive Systems**

Beyond goal setting and goal pursuit, transactive density also encompasses goal outcomes—the extent to which progress is made regarding the goals set by members of the transactive system. Indeed, a primary goal of TGD theory is to discern the circumstances under which people achieve good vs. bad goal outcomes. In addition, the extent to which goal outcomes are good or bad reverberates throughout the transactive system, influencing subsequent goal setting, pursuit, and outcomes (Finkel et al., 2016). For example, our romantic partner’s success after setting the goal to lose weight might make us more likely to set that goal for ourselves (Lockwood & Kunda, 1997). Such success might also make our partner more likely to set that goal for us, even creating a detailed spreadsheet for us that incorporates daily caloric intake and an exercise regimen for the next three months.

**Transactive Goal Dynamics Theory**

With the transactive density construct as the foundation, we started wondering circa 2012 what it might look like to develop a theory of goal dynamics (a theory of “self-regulation”) that was
deeply, inextricably social. This task was different from the ones we had previously pursued at the intersection of self-regulation and close relationships, which involved identifying specific research questions of a magnitude that could be tested in a single empirical article—questions like: (a) Does thinking about a significant other associated with a given goal increase one’s exertions in pursuit of that goal (Fitzsimons & Bargh, 2003)? (b) Do inefficient social interactions undermine one’s goal performance on subsequent tasks (Finkel et al., 2006)? (c) Does thinking about how helpful a romantic partner is in the pursuit of one’s goal undermine one’s own effort exertion (Fitzsimons & Finkel, 2011)? and (d) Does having low power in a relationship increase the tendency to prioritize one’s partner’s goals over one’s own (Laurin et al., 2016)? We remain excited about questions of that magnitude, but, by 2012, we had come to believe that an exclusive focus on such questions would not allow for the development of a truly social theory of goal setting, pursuit, and achievement.

Our first effort along those lines appear in our “Transactive Goal Dynamics” article (Fitzsimons et al., 2015). In combination with Figure 2, the ensuing sections provide an overview of TGD Theory, along with brief discussions of the state of the empirical evidence relevant to each of the theory’s tenets. In several cases, including those summarized in the note underneath Figure 2, the present discussion represents a slightly revised, updated version of the theory presented in Fitzsimons et al. (2015).

**Tenet 1: Relationships Vary in Their Level of Transactive Density**

Some relationships exhibit greater transactive density than others, and the level of transactive density within a given relationship varies across time and circumstance.\(^4\) Figure 3 provides a...
stylized illustration of this idea by considering the transactive density characterizing Burnham and Root’s relationship in 1872, shortly after they first met (left panel), versus in 1890, after they had built their firm into a juggernaut (right panel).

In 1873, they launched their firm into the teeth of a major recession. But soon, their luck improved. Both were skilled architects, but Root was the more innovative of the two. Burnham was the better salesman and organizational mastermind; Root was the deeper intellectual. Root developed a revolutionary system for building foundations—a “floating raft system” involving interlocked steel beams—which made it possible for Chicago to become the center of innovation for tall buildings despite its marshy soil. The system made it possible for Burnham and Root to build the Montauk Building in 1882—a structure that many consider the first skyscraper. Throughout the decade, the firm built a number of monumental buildings, including many that continue to awe observers today.

“The Chicago skyscraper, soon exported elsewhere” observes the Burnham biographer Thomas Hines (2009, p. 69), “became the new cathedral, the votive symbol, of turn-of-the-century American culture—an architectural offering created of and for the time, that unified the worlds of science, of commerce, and of art.” By 1890, Burnham and Root were among the hardest-working architects in the world, and pretty much everything each man did influenced the other. The magnitude of their goal-related interdependence was clear to observers all along, but it became especially obvious when Root succumbed to pneumonia in 1891 at the age of 41, a topic we will consider when discussing Tenet 6 below. For now, the central point is that transactive density is an essential measure of interdependence, one that varies substantially from one relationship to the next and within a relationship over time. Understanding the causes and consequences of this interdependence is the primary purpose of TGD Theory.
Tenet 2: Opportunity and Motivation Exhibit Main and Interactive Effects on Transactive Density

Tenet 2 addresses the circumstances under which a transactive system is likely to exhibit lower versus higher levels of transactive density. According to Tenet 2a, a system exhibits higher levels of density to the extent that (a) circumstances afford the opportunity for interdependence, as when management assigns two employees to work together on a project; and (b) the group members desire deeper rather than shallower interdependence, as when the two employees ask management to assign them to shared projects again in the future. In other words, the cross-partner interdependence of the goals that members set, pursue, and achieve is likely to grow over time to the extent that external forces have pushed them to interact in meaningful ways more frequently (opportunity) and the partners want to interact in such ways (motivation).

Opportunity and motivation do not constitute transactive density in and of themselves; they set the stage for density to emerge over time. Management might assign several employees to work together on a project, which will increase the transactive density of the employees on average. But, as represented in Tenet 2b, the extent to which any two employees in this work team become interdependent will vary according to how much they are motivated to increase their goal-related interdependence—not only regarding the assigned project, but perhaps also regarding other work-related goals (e.g., seeking feedback from each other on independent work) and non-work-related goals (e.g., getting the two families together for holiday festivities).

Burnham and Root obviously never could have become “Burnham and Root” had their paths not crossed. It was to their mutual good fortune that Burnham’s father was able to persuade Peter Wight to hire his ne’er-do-well son into an architecture firm that happened to employ Root. Because they worked in the same firm, Burnham’s and Root’s goal systems inevitably intersected, creating a modest, necessary level of interdependence. When the two men discovered how much
they loved working together, they founded their own firm, a setup that afforded the opportunity for them to become deeply interdependent across many goals, including those linked to their reputations, their financial well-being, the enjoyment of their work, and so on.

Research provides compelling clues about what makes people seek more versus less density with a potential partner. For example, teams of individuals who are assigned to work together come to exhibit especially high levels of density to the extent that the members hold egalitarian values (Wageman & Gordon, 2005). Individuals tend to reduce their density with people who are highly competitive (Van Lange & Visser, 1999). People with low self-control are especially likely to pursue greater density with a partner who has high self-control (Shea, Davisson, & Fitzsimons, 2013).

Motivation also influences transactive density by altering transactive structure. Neither the number of people in a transactive system, nor the nature of transactive density among them, is necessarily fixed. Some groups are receptive to adding new members who become incorporated into a more complex web of goal-related interdependence, whereas other groups are less so. One intriguing case from our own discipline is Daniel Kahneman and Amos Tversky, who, according to Michael Lewis’s (2016) The Undoing Project, exerted effort during their peak period of collaborative genius to keep others out of their transactive system of two.

**Tenet 3: Goal Coordination Predicts Transactive Gain (vs. Loss) and Moderates the Effect of Transactive Density on Transactive Gain (vs. Loss)**

In Tenet 3, we start investigating the consequences of transactive density, especially in terms the circumstances under which it promotes vs. undermines system-level goal outcomes. Specifically, this tenet introduces the construct of goal coordination, which both promotes system-level goal outcomes (Tenet 3a) and moderates the effect of density on such outcomes (Tenet 3b).
Specifically, the effect of density on system-level goal outcomes becomes increasingly positive as goal coordination gets better but increasingly negative as goal coordination gets worse.5

The terms *transactive gain* and *transactive loss* capture the extent to which involvement in this relationship—in this transactive system—increases or decreases the members’ collective goal outcomes. Researchers can adopt one or both of two benchmarks for such comparisons: the goal outcomes the members would have experienced (a) on their own (e.g., Burnham founding his own architecture firm) or (b) in a different transactive system (i.e., Burnham founding an architecture firm with somebody other than Root). Whichever benchmark researchers use, they can conceptualize transactive gain or loss in terms of the extent to which the whole is greater or less than the sum of its parts vis-à-vis goal-achievement.

*Goal coordination* refers to the alignment and integration of goal pursuit across the array of goals in the transactive system, including the prioritization of more important over less important goals. Not surprisingly, research supports the hypothesis that transactive systems characterized by stronger coordination tend to exhibit better goal outcomes (Tenet 3a). Adolescents with Type 1 diabetes tend to cope better with their medical condition to the extent that they enjoy collaborating with their mother to manage it (Berg, Schindler, & Maharajh, 2008). Elderly individuals with Type 2 diabetes tend to falter more regarding their diet to the extent that their spouse tempts them with forbidden foods (Henry, Rook, Stephens, & Franks, 2013). People involved in new dating relationships make more progress on a given goal to the extent that it aligns with their partner’s goals (Gere & Impett, 2018).

In accord with Tenet 3b is research demonstrating that transactive density and goal coordination interact to predict goal outcomes. Teams with a very high proportion of talented

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5 In participant samples characterized consistently high levels of density, such as most serious dating or marital relationships, the main effect of goal coordination (Tenet 3a) is likely to be much stronger than the transactive density \( \times \) goal coordination interaction effect (Tenet 3b).
individuals tend to perform better than teams with a lower proportion of talented individuals when success is largely determined by the performance of individuals (e.g., in baseball)—but the performance of these highly talented teams suffers when success is largely determined by coordinated performance (e.g., in basketball), in part because status conflicts undermine team coordination (Swaab et al., 2014). In other words, greater transactive density (basketball rather than baseball) predicts transactive gain when the team has a blend of elite and nonelite players, but it predicts transactive loss when the team has a particularly high proportion of elite players, apparently because goal coordination, such as who sets the pick and who shoots the ball, is problematic in the latter case. Analogously, adolescents who perceive that their family makes frequent demands on them tend to exhibit potentially harmful immunological activation (cytokine production in response to bacterial stimulation), but only if the family is close (Levine, Hoffer, & Chen, 2017). In other words, greater transactive density (close rather than nonclose familial context) predicts transactive gain when the when demands are infrequent, but it predicts transactive loss when demands are frequent, apparently because goal coordination (alignment of goal-relevant behaviors) is problematic in the latter case.

Such studies provide intriguing support for Tenet 3b’s transactive density × goal coordination interaction effect (task interdependence × status conflicts; family closeness × frequency of demands), but they offer few clues about the forms that goal coordination can take. TGD Theory identifies three such forms: division of pursuit, transactive facilitation/conflict, and interpersonal multifinality.

**Division of pursuit.** The first form involves the division of goal pursuit across members of the transactive system. To the extent that such division leverages the strengths and preferences of the members rather than focusing on, say, which member happened to set a given goal, the system enjoys greater transactive gain (or less transactive loss). One of the primary reasons why Burnham
and Root enjoyed so much success is that they had complementary skills and specialized their efforts accordingly. Burnham was particularly interested in serving as a chief executive and in developing broad-brushstroke visions for the buildings, whereas Root was especially interested in the artistic components of architecture and in developing a philosophy linked to it. Because the two of them were able to play to their respective strengths—and because they were able to integrate this division of labor with the opportunities afforded to them by industrial advances and the architectural demands Chicago following the 1871 fire—they were able to achieve much more together than they could have achieved separately or with a less complementary partner.

**Goal facilitation/conflict.** The second form involves the extent to which one member’s goal pursuit facilitates versus interferes with other members’ goal pursuit. If Burnham insisted on holding business meetings near the drafting area, he would have interfered with the quiet concentration required for Root to maximize his creativity and productivity. If Root had been uninterested in giving philosophical lectures, which enhanced the reputation of the firm, Burnham would have found it more difficult to procure major commissions. Rather than enduring such goal conflict, the gears that turned as the two of them pursued goals generally aligned, with the salutary consequence that each person’s pursuit facilitated the other’s.

**Interpersonal multifinality.** The third form differs from the first two in that it involves the system-level consequences of one person’s pursuit. Here, we build on the Goal Systems Theory construct of multifinality (Kruglanski et al., 2002), an individual-level variable capturing the extent to which the pursuit of a given means (e.g., walking the dog) serves multiple goals (e.g., caring for the dog, getting exercise, and enjoying the fresh air). Interpersonal multifinality captures the extent to which an individual’s pursuit of a given goal serves multiple goals in the transactive system. Root’s expertise in helping to design the stockyard magnate John B. Sherman’s house in the firm’s first major commission not only bolstered the shared goals of making money and
enhancing the firm’s reputation, but also helped Burnham’s personal life by impressing Sherman’s daughter Margaret, whom Burnham ultimately married.

**The orthogonality of transactive density and goal coordination.** TGD Theory conceptualizes transactive density and goal coordination as independent constructs. A given transactive system, such as a married couple, might possess high versus low density; independently, it might possess strong vs. weak coordination. Empirically speaking, density and coordination may be positively correlated because, all else equal, people are likely to increase density over time when coordination is strong and decrease density over time when it is weak. But this idea represents a testable hypothesis rather than a feature of the theory itself. The theory conceptualizes density and coordination as constructs that can, and often do, vary independently.

**Tenet 4: Shared Goal Representations and Relationship Orientation and Skills Predict Goal Coordination**

Given how crucial goal coordination is in determining whether transactive density makes the whole better or worse than the sum of its parts, it is important to understand what helps members of transactive systems coordinate more successfully. TGD Theory identifies two major factors that bolster goal coordination: shared goal representations and relationship orientation and skills.

**Shared goal representations.** A widespread, albeit weakly supported (Tidwell, Eastwick, & Finkel, 2013), belief among scholars and laypersons alike is that similarity—in terms of psychological attributes like personality, attitudes, and values—is linked to greater interpersonal attraction and relationship quality. TGD Theory focuses not on qualities that people have in common (e.g., both partners are conscientious), but rather on the goals and the preferred patterns of pursuit that people share for specific targets within their transactive system: Who should achieve what outcomes? Who should do what in pursuit of those outcomes? How should they do it? To the extent that the members of a transactive system align in answering such questions, their
goal coordination is likely to be better. In particular, they will find it easier to divide pursuit sensibly, to enjoy more transactive facilitation and less transactive conflict, and to engage in more behaviors characterized by strong interpersonal multifinality.

Many studies illustrate the importance of shared goal representations. For example, people who make concrete exercise plans with a significant other pursue their exercise goals more effectively, and lose more weight, than do people who make concrete exercise plans for themselves or people who ask a significant other to help them exercise more but without making concrete plans (Prestwich et al., 2012). The concrete social plans appear to be especially effective because they include shared representations of both the targeted goal (that Partner A will exercise more) and the means of pursuit. Older spouses with a larger proportion of shared target-oriented or shared dyad-oriented goals tend to experience greater psychological well-being, in part because these shared goal representations are linked to greater enjoyment of daily collaboration (Schindler et al., 2010). The main effect of shared goal representations is especially robust among couples who collaborate together more frequently—a reasonable indicator of transactive density—which is consistent with the moderational path implied by the intersection of Tenet 4 and Tenet 3b.

**Relationship orientation and skills.** Possessing shared goal representations is a major predictor of effective goal coordination, but it is far from the whole story. Dedication to the well-being of the relationship, along with the social skills required to facilitate it, is also essential (Feeney & Collins, 2015). People who feel highly committed to a relationship are especially willing to deviate from their self-interested preferences (narrowly defined) in order to benefit their partner and the relationship (Van Lange et al., 1997). In doing so, they are more likely than their less committed counterparts to prioritize overall goal achievement within the transactive system rather than simply prioritizing achievement of their own goals. According to TGD Theory, such
individuals are especially likely to seek out opportunities for efficient division of pursuit, transactive goal facilitation, and interpersonal multifinality.

Of course, adopting a relationship orientation of this sort is no guarantee that one’s efforts will be effective. The odds of success are higher to the degree that individuals are skilled and attentive—that they can accurately perceive each other’s goals and preferred means, and can behave in ways that align with them. Consider social support. People differ in the sort of support they typically like to receive (e.g., emotional versus instrumental), in the sort of support that is especially relevant in a given situation (e.g., information versus money), in the relational dynamics they experience with a given support partner (e.g., an easygoing relationship versus one on which one feels excessively dependent), and so forth—not to mention complex interactions among such variables. As such, a transactive system characterized by strong goal coordination is unlikely to be one in which members use cookie-cutter means of supporting one another’s pursuit goals; rather, it is one in which goal-pursuit efforts are sensitively tailored to members’ idiosyncratic needs, dispositions, and preferences (Finkel, Larson, Carswell, & Hui, 2014; also see Clark & Lemay, 2010; Reis, 2007).

Abundant research demonstrates the importance of providing such tailored, responsive support. Individuals talking to their romantic partner about their goal-related challenges tend to feel more deeply understood to the extent that their partner is generally more skilled at understanding other people’s feelings (Leuchtmann et al., 2018). The long-term trajectories of physical functioning among individuals with osteoarthritis are better to the extent that their spouse calibrates support to align with their pain-related needs on a given day, dialing the level of support up or down to match their current pain level (Wilson, Martire, & Sliwinski, 2017).

But tailoring support is challenging, as any given approach can have downsides. For example, parents’ direct academic support is linked to stronger mastery goals for their adolescent children,
but also to greater test anxiety (Song, Bong, Lee, & Kim, 2015). HIV-positive individuals who feel confident in their primary romantic partner’s dedication to the relationship tend to enjoy strong medication-relevant self-efficacy regardless of how much medication-relevant support the partner provides, but HIV-positive individuals who feel uncertain of their romantic partner’s dedication exhibit less self-efficacy to the extent that their partner provides more medication-relevant support, perhaps as a result of dissonance associated with being dependent on somebody who is unreliable (VanderDrift, Ioerger, Mitzel, & Vanable, 2017). Individuals with sleep apnea adhere better to their medical regimen when their spouse makes them feel supported for adherence, but worse when their spouse pressures them about it (Baron et al., 2011).

**Tenet 5: System-Level Goal Achievement Predicts Relationship Quality and Persistence**

As we have seen, TGD Theory predicts that goal coordination, which is predicted by shared goal representations and relationship orientation and skills (Tenet 4), promotes transactive gain (vs. loss) through both a main effect (Tenet 3a) and an interaction effect with transactive density (Tenet 3b). According to Tenet 5, greater transactive gain in turn predicts higher relationship quality, including (in voluntary relationships) longer relationship persistence. No longitudinal research has examined the hypothesized link between transactive gain and relationship persistence, but several studies have demonstrated that greater partner instrumentality—a relationship partner’s greater assistance with the achievement of one’s goals—is linked to higher relationship quality (Fitzsimons & Shah, 2008; Orehek, Forest, & Wingrove, 2018). For example, individuals who experience their romantic partner as particularly instrumental during their moment-to-moment goal pursuit throughout a given week exhibit an increase in relationship satisfaction across that week (Hofmann, Finkel, & Fitzsimons, 2015). Individuals also exhibit elevated state-level relationship quality at moments during which they experience their partner as more instrumental than usual, an effect that is especially strong when individuals are fatigued or stressed—
presumably because those are circumstances under which people benefit the most from their partner’s instrumentality (Larson, Finkel, Fitzsimons, & Hofmann, 2018).

**Tenet 6: Predissolution Goal Coordination Predicts Worse Goal Recovery and Negatively Moderates the Effect of Predissolution Transactive Density on Goal Recovery**

Tenet 6 is, in a sense, the inverse of Tenet 3: Whereas Tenet 3 points to the positive main and interactive effects of goal coordination on members’ combined goal outcomes while the transactive system is intact (e.g., while two individuals are dating), Tenet 6 points to the negative main and interactive effects of goal coordination on members’ combined goal outcomes after the transactive system has been dissolved (e.g., following a breakup). To the extent that goal coordination was strong while the system was intact, the members are likely to experience poorer goal-related outcomes following dissolution (Tenet 6a), especially to the extent that transactive density was high (Tenet 6b).

Although no research to date offers precise tests of these hypotheses, the available evidence is consistent with them. For example, when elite scientists die at the apex of their career, the publication rate of their collaborators declines sharply (Azoulay, Fons-Rosen, & Zivin, 2015), presumably in part because these collaborators had developed skillsets that facilitated coordination with the elite scientist but may be less effective independent of him or her. Similar results emerge when inventors die prematurely—their co-inventors’ earnings and citation-weighted patents decline sharply (Jaravel, Petkova, & Bell, 2016), presumably for similar reasons. When a romantic relationship remains intact, individuals tend to make more goal progress to the extent that their partner is highly instrumental regarding those goals—but when the relationship has dissolved, individuals tend to make less progress to the extent that their partner had been highly instrumental while the relationship was ongoing (Gomillion, Murray, & Lamarche, 2015).
It is no small feat to disentangle the dense, messy web of goal-related interdependence characterizing systems with high transactive density. Recall that members of such systems function less as individual self-regulating entities than as subcomponents of a multi-person self-regulating system (see, again, the right panel of Figure 3). In successful systems—those characterized by strong goal coordination—members’ skills improve in certain domains and atrophy in others (as a result of effective division of pursuit), they find their goal pursuit easier than it otherwise would be (as a result of strong goal facilitation), and they even find some of their goals achieved without them having to exert any effort at all (as a result of frequent interpersonal multifinality). When the system dissolves—due to a romantic breakup, a spousal death, or an organizational restructuring, for example—it can be difficult for members to disentangle their goal-related interdependence to develop an adapted set of goal-related mechanisms that yield strong goal-related outcomes.

Consider an example: Even though romantic couples often make decisions about which partner will have greater responsibility for financial matters on the basis of factors unrelated to skills in this domain (e.g., amount of responsibility in other domains), the person who adopts this role tends to become increasingly financially literate over time while their partner does not (Ward & Lynch, 2017; also see Wegner et al., 1991). If the relationship dissolves, the person who did not become increasingly financially literate must confront a world in which he or she cannot rely on the erstwhile partner to compensate for that limitation.

Some of these consequences are visible when we consider Burnham’s rather mixed architectural output following Root’s abrupt death in 1891. This output is best exemplified by considering how Burnham managed the Chicago World’s Fair, which took place in 1893. Burnham and Root were awarded the commission several years earlier, and the two of them had made some initial plans, seeking to create a small-scale version of an ideal city. After Root died,
Burnham supervised an all-star team to create a hugely successful social and cultural event, one canonized anew in Erik Larson’s (2004) *The Devil in the White City*. But in the eyes of some architectural critics—most stridently Burnham’s contemporary Louis Sullivan (1924), the principal mentor of Frank Lloyd Wright—the Fair represented a giant step backward for the cause of architectural innovation. The source of the criticism is that Burnham, with Root dead and the pressure of producing a world-class event on a tight timeline and with insufficient funding, turned away from innovation in favor of neoclassical designs. And although Burnham collaborated on some nice buildings in the two decades between Root’s death and his own, he never approached the level of architectural creativity that he had achieved with Root in the 1880s.

Sullivan argued that Burnham’s inability to recapture the magic of Burnham and Root resulted from Burnham’s inherent lack of skill, but the biographer Thomas Hines disagrees: “The worst and later work of D. H. Burnham and Company was not,” observes Hines (2009, p. 71), “the ‘real Burnham’ finally exposed after Root no longer lived to cover up and carry on. It was a different Burnham, with both negative and positive manifestations, a Burnham changed not so much by Root’s death as by his partner’s life and by their close association of eighteen years.” Hines continues: “With Root as a kind of intellectual ‘authority,’ Burnham had felt secure to combine his vision and his practicality in a large, aggressive way without fear of ultimate academic, artistic, or intellectual ‘error.’ His failure after Root’s death to find the same kind of lasting human authority forced him, for the most part, into a gradual dependence upon ‘the book,’ upon the abstract academic authority of the ‘classics.’” In this sense, Burnham is like the rest of us—if we are lucky enough to find ourselves in a transactive system characterized by strong transactive density and efficient goal coordination, we will probably struggle to maximize our goal success if the system dissolves.

**Discussion**
TGD Theory represents a major departure from all major social-psychological theories of goal dynamics in adopting the foundational assumption that goal setting, pursuit, and outcomes are fundamentally embedded within social units. It introduces the basic principle of goal transactivity, reconceptualizing the unit of analyses for goal dynamics, conceptualizing individuals as subcomponents of a self-regulating social group (Tenet 1). It then investigates both the causes (Tenet 2) and the consequences (Tenets 3-5) of transactive density for the social unit, including the implications of the unit’s transactive density for its members following its dissolution (Tenet 6).

An Inextricably Social Species

As significant as TGD Theory’s departure is from mainstream theorizing in the social psychology of goal dynamics—of self-regulation and self-control—it aligns entirely with diverse perspectives that treat the social group as the unit of analysis for understanding various phenomena, including Thibaut and Kelley’s (1959) interdependence theory and Wegner’s (1987) work on transactive memory. “There is no such thing as a baby,” observes the child psychiatrist Donald Woods Winnicott (1958, p. 99), meaning that it is virtually impossible to make sense of infants’ experiences and development without accounting for their relationship and social interactions with their primary caregiver. “The smallest indivisible human unit is two people, not one; one is a fiction,” says the playwright Tony Kushner. “From such nets of souls societies, the social world, human life springs.”

Such perspectives are more than stylized abstractions. According to the Nobel Prize-winning physicist Neils Bohr (1934, p. 37), “Subatomic particles [are] definable and observable only through their interaction with other systems.” The relationship scientist Ellen Berscheid (1999) argues that a similar truth applies to the human experience—it is largely defined in terms of interaction with other people. In Reality is Not What It Seems (2018, p. 256), the physicist Carlo Rovelli underscores this idea by interpreting the pre-Socratic Greek philosopher Democritus’s
observations of humanity as follows: “The nature of man is not his internal structure but the network of personal, familial, and social interactions within which he exists.”

None of this is to question the value of theories or research methods that conceptualize goal dynamics as individual-level phenomena. Such perspectives have proven to be immensely generative and surely will remain so. But, from the perspective of TGD Theory, they neglect vast swaths of explanatory territory. To the extent that individual-level perspectives become increasingly embedded within a broader, social framework, they will account for a much greater proportion of the variance in explaining how people set, pursue, and achieve goals, conquering new territory at the intersection of the individual and the group levels of analysis.

A Glance to the Future

All perspectives that take human sociality seriously are complex, and TGD Theory is no exception. Indeed, the present discussion has simplified reality in major ways. The story becomes much more complicated as group size increases to three or more (Fitzsimons, Sackett, & Finkel, 2016). As just one example, parallel target-oriented goals in dyadic systems refer to cases in which both partners hold the same goal, but only for the other person, such as when both spouses want the partner to be kinder but believe that the self is already kind enough. But what about in a work team with five members? Now a parallel target-oriented goal refers to cases in which multiple members of the team—two, three, four, or all five of them—hold the same goal but for a different teammate or teammates (if it were for the same teammate, it would be a shared goal). Perhaps Alice wants Betty to give the presentation, but Betty wants Charlie to do it, and Charlie thinks that Dwayne and Evan should do it together. Such phenomena are complex, but they are also important and worthy of empirical investigation.

The story gets even more complex when we appreciate that social units do not exist in isolation. All of us are embedded within multiple transactive systems—say, a marriage, a cycling
club, a work team, and a church board—and the goal transactivity within any of them reverberates throughout all of them. Recall that Burnham and Root’s first major commission was for the John B. Sherman house. They were able to procure this commission in part because Sherman’s protégé, George Chambers, was a friend of Root’s. Stated otherwise, Burnham had the opportunity to sign his first major deal because Chambers happened to be involved in one transactive system with Root and in another with Sherman.

Speaking of Sherman, Burnham’s marriage to his daughter, Margaret, yielded a new transactive system that aligned symbiotically with the one Burnham had already developed with Root. “With the success of the Sherman commission and the influence of the Sherman family with important Chicago socialites and business magnates,” observes Hines (2009, p. 21), “the young firm’s ‘starving time’ would quickly end. New clients led to social invitations to attend parties and join clubs, which led, in turn, to more clients…. Daniel and Margaret rose socially as Burnham and Root rose professionally, the movement of both inevitably and inextricably entwined.” Given widespread concerns about work-life balance, it seems that such smooth alignment across an individual’s transactive systems can be difficult to achieve.

**Conclusion**

In the end, Burnham did indeed make big plans, which did indeed have the magic to stir people’s blood. But, as with the rest of us, the goals he set, the nature of his goal pursuit, and the extent of his achievement were not the result of one individual toiling away in isolation. They were, in the deepest, most fundamental sense, socially embedded. Burnham deserves credit for his titanic contributions to architecture, as does Root. But considering either man’s contributions independently of the other’s—and independently of both men’s broader network of social relationships—represents a seriously oversimplified version of the truth. Such a simplification cannot, in the end, come close to explaining how they accomplished what they did.
References


Figures

Figure 1. The 3-way structure of goal setting and pursuit 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).
- Note (underneath figure): This figure is adapted with permission from Fitzsimons et al. (2015).

Figure 2. An overview of Transactive Goal Dynamics Theory.
- Note (underneath figure): The Tenet 1 (T1) box captures the density of the transactive system’s goal setting, pursuit, and outcomes. Tenet 2 captures the hypotheses that opportunity and motivation are the key antecedents of transactive density (T2a), and that motivation moderates the effect of opportunity on transactive density (T2b). Tenet 3 captures the hypotheses that effective goal coordination both predicts transactive gain rather than loss (“T. Gain/Loss”; T3a) and makes the effect of transactive density on transactive gain rather than loss more positive (T3b). Tenet 4 (T4) captures the hypotheses that shared goal representations and relationship orientation and skills are the key antecedents of goal coordination. Tenet 5 (T5) captures the hypotheses that transactive gain rather than loss predicts relationship persistence. Tenet 6 captures the hypotheses that, when considering outcomes following relationship dissolution, effective goal coordination when the relationship was intact both predicts transactive loss rather than gain (T6a) and makes the effect of transactive density when the relationship was intact on transactive loss rather than gain more positive (T6b).

This figure is adapted with permission from Fitzsimons et al. (2015), with four notable changes. First, this figure adds an arrow representing the moderational effect of motivation on the association between ability and transactive density, which required splitting the initial Tenet 2 into two tenets; T2a was the original tenet, and T2b captures the new moderational hypothesis. Second, this figure adds an arrow representing the main effect of goal coordination on transactive gain/loss, which required splitting the initial Tenet 3 into two tenets; T3a captures this new main-effect hypothesis, whereas T3b was the original tenet. Third, in parallel manner, this figure adds an arrow representing the main effect of goal coordination on transactive goal recovery, which required splitting the initial Tenet 6 into two tenets; T6a captures this new main-effect hypothesis, whereas T6b was the original tenet. And fourth, for conceptual simplicity, this figure splits shared goal representations and relationship orientation/skills into separate boxes, a change underscoring that these are two distinct constructs that can independently influence goal coordination.

Figure 3. A depiction of transactive density.
- Note (underneath figure): The left panel depicts a stylized representation of Daniel Burnham and John Root’s goal-related interdependence in 1872, when they first became acquainted at the architectural firm of Carter, Drake and Wight. The right panel depicts a stylized representation of their goal-related interdependence in 1890, their own architectural firm was at peak productivity. In both panels, the blue arrows represent effects from Burnham to Root. The green arrows represent effects from Root to Burnham. This figure is adapted with permission from Fitzsimons et al. (2015).
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<td>Root is Pursuer</td>
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*Figure 1*
Goal Transactivity

Figure 2

Shared Goal Representations

Relationship Orientation and Skills

Goal Coordination
- Division of pursuit
- Goal facilitation/conflict
- Interpersonal multifinality

Opportunity

Motivation

Transactive Density

T1

T2a

T2b

T3a

T4

T3b

T6a

T6b

T. Gain/Loss
(During relationship)

Goal Recovery
(After relationship)

Relationship Persistence

T5
Figure 3

Low Transactive Density

Burnham
Goal
Pursuit
Outcome

Root
Goal
Pursuit
Outcome

High Transactive Density

Burnham
Goal
Pursuit
Outcome

Root
Goal
Pursuit
Outcome