

Running Head: Psychology of Rivalry

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Psychology of Rivalry: A Social-Cognitive Approach to Competitive Relationships

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Abstract. Many of the most important competitions in business, politics, sports, and day-to-day social life occur not between strangers who happen to have negatively linked goals, but between parties who have a shared history of notable competitions—that is, between rivals. Despite psychology’s long and rich history of studying competition, the concerted study of rivalry has only been underway for about a decade. This chapter seeks to organize existing rivalry research and guide future investigations by proposing a causal theory that positions shared competitive history as the origin of rivalry; cognitive elaboration as the driving process in the formation of rivalry; a competitive relational schema as the social-cognitive construct that defines rivalry; an expansive view of competition as the proximal consequence of activating rivalry; and behavioral effects with respect to goal pursuit, identity maintenance, and moral decision-making as distal consequences. The first two sections review the seminal development of a relational approach to rivalry and acknowledge empirical challenges in drawing causal conclusions about rivalry. The next three sections describe the proposed causal model, linking a shared competitive history to behavioral consequences as a result of the competitive relational schema. The final sections discuss open questions and opportunities for the future of rivalry research. (202 words)

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The man arrives at his appointment at the usual time. He settles into the chair that he likes in the corner of the room. The doctor offers a warm smile, “Shall we jump right back to where we left off last week?” The man agrees, “I’ve been thinking about what you asked, Doc, and I think it’s right. I am more competitive with him than I am with anyone else. Even over small things, I just immediately feel like I want to beat him. For some reason, it just matters more because it’s him. I guess I use him as some kind of measuring stick. I know where I stand compared to him.” The man adjusts his focus from the doctor to the window over the doctor’s shoulder and gazes out, “It’s hard to explain, but it feels like it’s never about just this one thing. I don’t want to beat him just because of today, it feels bigger than that.” The man continues to look out the window. The doctor pauses to see if the man is going to pick back up but he does not. The doctor looks up from the notepad, “The enduring competitive connection, the inflated sense of importance...” The man looks from the window to the doctor and the doctor continues, “I believe you are dealing with a case of rivalry.”

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Beyond the stakes that will be afforded the winner, beyond even the experience of triumphing in a particular event, some competitions seem to matter more because of *whom* they are against. Indeed, many of the most important competitions in business, politics, sports, and day-to-day social life occur not between strangers who happen to have negatively linked goals, but between parties who have a shared history of notable competitions—that is, between rivals. In contrast to “mere competitions,” which are a purely structural arrangement (Deutsch, 1949), rivalry is a subjective, relational construct that exists in an individual’s mind as a competitive relational schema and persists beyond any specific competitive episode (Converse & Reinhard, 2016; Kilduff et al., 2010).

Working with rivalry as a social-psychological construct involves an inherent tension. On one hand, rivalry lies at the intersection of relationships, goal pursuit, and competition; three concepts at the heart of social psychology. From a phenomenological perspective, few ideas could be considered more social-psychological. On the other hand, rivalry is not a convenient construct for the standard social-psychological approach. It is a social idea that individuals intuitively understand; but its complexity and subjectivity can tempt an unproductive “know-it-when-you-see-it” approach to theorizing and study. Thus, it is useful to be precise in the conceptualization and empirical documentation of what is essential to rivalry versus merely associated with rivalry.

This chapter responds to these challenges by presenting a model of rivalry whose structure was inspired by an unlikely source, an influential model of hopelessness depression (Abramson et al., 1989). The analogy and the opening dramatization are not meant to imply that rivalry is a clinical disorder—nor certainly to make light of clinical disorders—but to illustrate that, structurally, there is theoretical value in applying a similarly structured model to a different cognitive schema and its consequences. Like rivalry behavior, hopelessness depression is intuitively recognizable, yet complex and subjective; also like rivalry behavior, its proximal sufficient cause is a schema through which affected individuals interpret their social landscape.

We borrow and capitalize on three features of the original model that are particularly useful for describing rivalry. First, like the original, our model centers on a complex but describable cognitive schema—here, a *competitive relational schema*—that serves as a sufficient cause of the relevant experiences and behaviors of the actor. According to the model, the defining social-cognitive feature of rivalry is a mental model of an enduring competitive connection with a specific competitor. The proximal consequence of forming and then activating

this schema is *competitive expansion*, the impression that interactions with (or with respect to) the rival have more and broader implications for the self, which in turn modulates behavior in a variety of ways. Second, our model refers to those behavioral consequences as a profile of symptoms. These symptoms are not unique to rivalry, but rivalry should guarantee them (i.e., rivalry is sufficient but not necessary for the consequences). A competition between rivals (versus non-rivals) should guarantee a heightened sense of competition, for example, but a heightened sense of competition does not guarantee the presence of rivalry because it could also be attributable to high stakes or other conditions that may be present in mere competition. Third, our model identifies more distal “contributory causes” (or moderators) of the symptoms of rivalry. These contributory factors do not guarantee the occurrence of rivalry behavior, but they increase the likelihood of rivalry (i.e., the competitive relational schema) forming and therefore promote the relevant behavioral consequences. Our goal in presenting this social-cognitive model is to help arrange a variety of associated constructs into an articulated and testable causal chain. We will highlight the best available evidence for each causal link in the model; we will also highlight areas where the evidence is weak, indirect, or non-existent.

One conceptual challenge that looms over this area is the varied uses of the term “rival” or “rivalry.” Within psychology, some authors have used it as a livelier synonym for the term “competitor”; and others have used it in a more relational sense, but with stronger emphasis on acrimonious feelings and interaction (e.g., Lee, 1985; Yip et al., 2018). Outside of psychology, especially in political science, economics, business, and sports management research, rivalry is often defined from a structural point of view, based on the number or nature of previous interactions (e.g., Chen, 1996; Colaresi et al., 2008; Kilduff, 2019; see also Haran & Bereby-Myer, *this volume*; and Porac et al., 1995). Our goal in this chapter is not to provide a

comprehensive list of these conceptualizations (see Kilduff, 2010; 2019; Tyler & Cobbs, 2017), nor to adjudicate whose definition has rights to the term; but we hope that our emphasis on the competitive relational schema as the definitive construct makes clear which theoretical and empirical work informs the current account and which informs relevant but separate issues.

We divide the chapter into six parts. The first section (*Rivalry in Nature*) describes the seminal research that empirically documented rivalry as an identifiable and systematic relational phenomenon, thereby stimulating a new area of research spanning competition, relationships, and goal pursuit. The second section (*An Empirical Caveat*) briefly acknowledges empirical challenges for the research area and corresponding limitations of the model. The third section (*What Rivalry Is*) identifies the competitive relational schema as the definitive social-cognitive marker of rivalry. The fourth section (*The Formation of Rivalry*) positions the competitive relational schema as a proximal sufficient cause of the symptoms of rivalry and describes how social-comparison concerns modulate actors' reflection on their shared competitive history with a potential rival. The fifth section (*What Rivalry Does*) aims to organize and explain the documented consequences of rivalry and to guide the search for new consequences. The sixth section (*Competitive Relational Dynamics*) identifies some exciting challenges and opportunities for the future of rivalry research. Though it is relegated to the background from here, we note that the structure of the chapter, the design of the model, and many of the organizational terms are imported directly from Abramson and colleagues' (1989) influential model of hopelessness depression. We hope to do justice in applying their level of precision to distinguishing between necessary, sufficient, and contributory causes; here to illuminate implications for competitive relationships.

Rivalry in Nature: Establishing Rivalry as a Psychological Construct

The cornerstone of a psychological approach to rivalry can be found in Kilduff and colleagues' (2010; Kilduff, 2014) relational treatment of the topic. Until their work, insight into the nature and consequences of rivalry had to be extrapolated from research that examined isolated components of rivalry, such as the nature and number of previous interactions (Chen, 1996; Johnson et al., 2006; Klein et al., 2006), the expectation of future interaction (Axelrod, 1984; Heide & Miner, 1992; Murnighan & Roth, 1983; Rand et al., 2009), the degree of similarity (Festinger, 1954; Rijsman, 1974; Seta, 1982; Tesser, 1988), or relative status (Garcia, Tor, & Gonzalez, 2006). None of these dimensions on its own captures the richness of rivalry, but it is not obvious how to account for that richness. The relational analysis by Kilduff and colleagues (2010) was the first to empirically document that there was *something* there—some systematic variance in competitive relationships.

To declare some unique rivalrous property between two parties, a researcher must be able to point to some marker of uniquely heightened competitiveness that one party (the “actor”) feels for a target. The social relations model (Kenny, 1994; Kenny & La Voie, 1984) allows for precisely this analysis, operationalizing the ‘unique’ component as dyadic variance. It allows researchers to ask, for example, whether Earvin feels uniquely competitive with Larry: To qualify as unique, Earvin’s competitive feelings about Larry must be stronger than his competitive feelings about third parties (as opposed to Earvin just being hypercompetitive); *and* Earvin’s competitive feelings about Larry must be stronger than third parties’ feelings about Larry (as opposed to Larry just being the target of everyone’s ire).

Employing a round-robin design in the context of NCAA basketball, Kilduff and colleagues (2010) recruited sportswriters from 73 universities with major-conference Division I

Men's Basketball programs. The participants therefore had expertise on their own team in relation to other teams throughout the network. Reporters rated the extent to which they (as representatives of their team) viewed each other team as a rival (from *not a rival* to *fierce rival*). Indicative of a uniquely relational effect, approximately half of the variance in rivalry ratings was found to be a dyadic effect, with raters reliably reserving their highest rivalry ratings for certain other teams. The social relations analysis of rivalry thus indicates that there is some *there* there. Engaged observers of the respective sports programs could reliably point to specific conference competitors as being stronger rivals than others, beyond measurement error, beyond any personal tendencies to have a more competitive view of others, and beyond any shared tendencies to point to a given target as rivals of everyone.

Furthering the construct validity, this research also supported two critical follow-up hypotheses. First, using archival data, the researchers documented that the so-called rivalry relationships were associated with predictable antecedents. Dyads with stronger rivalries tended to be more similar (operationalized as geographic proximity, historic status, and general university characteristics), to have greater historical parity (operationalized as head-to-head winning percentages), and to have had more exposure to one another (operationalized as the number of past meetings). This shows that rivalry can be detected where it ought to be.

Second, the researchers documented hints of an association between rivalry strength and motivation in head-to-head competitions, operationalized as effort-based defensive performance (so-called "hustle plays" like blocked shots). This latter finding was substantially bolstered in follow-up work that showed an association between rivalry strength and motivation-based performance, controlling for covariates, including tangible stakes, negative feelings, and similarity (Kilduff, 2014). This foundational work therefore showed that people recognize

something special in certain competitive matchups and, critically for a psychology of rivalry, that it can be reliably measured and predicted.

The relational approach described rivalry as “a subjective competitive relationship that an actor has with another actor that entails increased psychological stakes of competition for the focal actor, independent of the objective characteristics of the situation” (Kilduff et al., 2010, p.945). Three critical guiding characteristics are included in this description. First, rivalry is a subjective perception of the target. It resides in the actor’s mind, not in any objective feature of the situation (Deutsch, 1949). An actor may be more likely to feel rivalry with a similar target, for example, but similarity does not ensure rivalry. Second, rivalry requires history. Negatively linked goals in a given moment are not sufficient. Third, rivalry increases the importance of a competition beyond its given stakes. Rivalry is in some way about more than *this* competition. The social-cognitive view that followed (Converse & Reinhard, 2016; Kilduff & Galinsky, 2017), and that is elaborated in this chapter, builds directly on these empirical and theoretical foundations.

An Empirical Caveat

Before expanding on the proposed model, we must note that little rivalry research to this point has directly measured or manipulated features of the core construct, the competitive relational schema. Research focused on the formation (or antecedents) of rivalry has tended to operationalize rivalry as self-reported *rivalry strength* instead. Research focused on the consequences (or symptoms) of rivalry has tended to use some form of idiographic or cohort approach where the participants themselves or knowledgeable third parties identify the “rivals” and “non-rivals.” Where the operationalizations of rivalry rely primarily on self-reported rivalry strength or self-nominated rival primes, a major concern is that participants may be using

definitions of “rivalry” that are different from those of any theoretical perspective. Just as different research traditions have used rivalry in different ways, so might participants apply different definitions. It is also possible that different study materials, methods, and contexts could introduce systematic differences – for example, some studies might tacitly encourage participants to think of enmity than of a more neutral enduring competitive connection. We highlight those studies where researchers used more precise manipulations and measures, and those where they took additional steps to try to identify the precise ingredients of rivalry; but we note that most studies do not provide direct evidence for the role of the competitive relational schema and thus can be considered only suggestive evidence for the specific causal links in the proposed model.

What Rivalry Is: The Competitive Relational Schema

Heightened competition is perhaps the most familiar sign of rivalry. But if we allow that rivalry is not the only cause of heightened competition, then where does that leave us in trying to identify rivalry? Like a doctor trying to make a diagnosis, we should regard heightened competition as a clue. It can signal that rivalry may be at hand, especially if it cannot be explained by more common observables. But only by verifying the existence of a competitive relational schema could we be sure that the symptom is due to a rivalry. Thus, instead of anchoring on *what rivalry does* (e.g., heightened competition), our model anchors on *what rivalry is*. That anchor is the *competitive relational schema*, which, according to the model, is sufficient to cause a sense of competitive expansiveness (including heightened competition) and which arises from a set of more distal contributory causes. This section begins with a discussion of the schema and then work backwards (to the left in Figure 1) to examine more distal causes.

In our conceptualization, *rivalry*, *competitive relationship*, and *competitive relational schema* are terms that describe the same idea at different levels of analysis. The schema is the cognitive construct that must be in place for an individual to have the subjective perception of a competitive relationship with another party. In our usage, “rivalry” at a cognitive level *is* the competitive relational schema; and “rivalry” at a social level *is* the competitive relationship. We specify this because, colloquially, “rivalry” is often additionally used to refer to the interaction between rivals (e.g., as shorthand for a competition between rivals) or to associated feelings of competitiveness or enmity within a competition.

A competitive relational schema describes a particular tripartite connection between the three definitional components of a relational schema, a “self-schema” (a mental model guiding how one thinks of the self in the context of the relationship), an “other schema” (a mental model guiding how one thinks of the target in the context of the relationship), and an “interpersonal script” (a mental model guiding how one thinks of the self and other interacting as a unit; Baldwin, 1992). In general, relational schemas are working mental models that incorporate generalizations of the self and other, episodic memories, procedural knowledge, goals, plans, and affect to help people navigate interactions (Bowlby, 1969; Cesario, Plaks, & Higgins, 2006; Higgins, 1987; Horowitz, 1989; Mitchell, 1988; Plaks & Higgins, 2000; Planalp, 1987; Trzebinski, 1985; Schank & Abelson, 1977). Competitive relational schemas generalize from a shared competitive history, and they involve representations of the self and other connected in a chain of competitions (Converse & Reinhard, 2016).

One of our initial rivalry studies, using a comparative cohort design, documented individuals’ spontaneous use of the competitive relational schema in interpreting their interactions with a rival versus non-rival competitor (Converse & Reinhard, 2016). Specifically,

we examined the free responses of National Football League (NFL) fans who, as part of a priming manipulation designed to activate the schema, had been prompted to describe the nature of their team's interactions with different competitors. The fans had been randomly assigned to one of the two groups, with some asked to discuss interactions with a self-nominated rival and others to discuss interactions with a talented competitor (specifically, the fourth talented competitor that they listed, under the assumption that non-rivals would be less accessible than rivals; Fitzsimons & Shah, 2008; Higgins, King, & Mavin, 1982). In a post-hoc analysis, coders examined the fans' written free-response answers to the question of "why it is important for you to beat the [target team]." Suggesting that participants in the rivalry group had used the competitive relational schema to interpret those interactions, coders found that those participants were more likely to spontaneously refer to specific past meetings or a general shared history as contributing to the importance of current games (see Tyler & Cobbs, 2015, for a descriptive replication of this theme).

Though this cohort design provides an empirical link between the competitive relational schema and what people perceive to be a rivalry relationship, it does not provide evidence for the hypothesized causal role of the schema. Given the centrality of this concept to the model, there is a significant need for corroboration and for continued progress on measuring and manipulating the schema directly. Most of the evidence for the schema concept, as we will discuss in the next section, comes from research on the origins and formation of rivalry. Generally speaking, we infer that the schema is there because it appears where it "ought to" based on principles of cognitive elaboration and social-information processing.

Future studies would also benefit from methods that divorce the manipulation of rivalry from any mention of rivalry, a methodological feature that almost none of the reviewed studies

has. One elegant study provides a blueprint for such methods going forward (Kilduff & Galinsky, 2017). In this experiment, researchers artificially created a sense of rivalry—that is, the beginnings of a competitive relational schema—among some participants by running them through a series of repeated, closely contested competitions against a single competitor (rather than a series of less closely contested competitions against a rotating cast of competitors).

Though the schema was not assessed directly and can only be inferred, participants in the first condition reported a stronger sense of rivalry in the task. As part of a multi-method approach, manipulations like this one can help to provide causal clarity. Avoiding any mention of “rivals” or “rivalry” in the relevant condition (as well as the control condition) would ensure that the symptoms follow directly from the schematic properties rather than from participants’ assumptions or generalizations about how one is expected to behave in a rivalry.

Finally, it is important to note that the schema conceptualization implies that rivalry persists and may have consequences even outside of head-to-head competitions. The competitive relational schema may or may not be active in one’s mind at any given moment; but its activation and effects do not require a structurally-defined competition. Training montages in sports movies often depict this idea when they show an athlete gritting his or her way through practice repetitions while thinking of the rival. We do not know of any studies that have documented this effect, but the presumed tripartite connection between actor, competitor, and competition predicts this kind of priming effect. Research has, however, shown that a rival’s successful performance against a third-party can motivate the actor to increase his or her own competitive performance (Pike et al., 2018). Because the competitive relational schema may be active outside of competitions with the rival, it may affect the actor’s identity vis a vis the target

as a result of either party's relevant actions, even outside of their competitions with one another, an issue that we return to in the section on consequences.

The Formation of Rivalry: Cognitive Elaboration of Shared Competitive History

How does a person develop a competitive relational schema and, in turn, experience and act on the symptoms of rivalry? An important advantage of the proposed model is that it specifies a sequence of “contributory” events in a causal chain. The origin of the model is one or more perceived competitions with a given target. From there, the model identifies personal, situational, and relational conditions that increase the likelihood of the actor reflecting on and cognitively elaborating the shared competitive history into a relational schema. Thus, none of the contributory conditions is necessary or sufficient for rivalry formation, but they contribute to the definitive schema-formation process of cognitive elaboration.

The Origin of Rivalry: Shared Competitive History. As illustrated in Figure 1, our hypothesized causal chain begins with perceived competitive interactions. Though these will most often be real and direct competitive interactions—defined from a structural perspective as any time the parties' goals are negatively linked (Deutsch, 1949)—it is theoretically possible that the chain could begin with the mere perception of negatively-linked goals. Whether real or imagined, perceived competition is a necessary but not sufficient distal cause of rivalry. Perceived competition does not guarantee rivalry, but there can be no rivalry without it. What, then, determines whether perceived competition will develop into a competitive relational schema? According to the model, cognitive elaboration is the key mediational link between perceived competition and the presence of a competitive relational schema, and the other contributory causes modulate the likelihood of the cognitive elaboration that makes it happen.

Contributory Causes: Social Comparison Concerns. In broad terms, the model includes as distal contributory causes any factors that will increase the likelihood of an actor reflecting on past competitive interactions with the target. The more likely the actor is to reflect on a competition with a given competitor, the more likely it is that she or he will form the competitive relational schema that promotes a sense of enduring competitive connection (Hastie et al., 1980; Manis, 1977; Taylor, 1980). The social-cognitive perspective is useful here because it can help to explain and organize the contributory causes that have already been documented (Kilduff et al., 2010; Tyler & Cobbs, 2015), as well as offer predictions about yet undocumented ones.

Anything that increases the actor's concerns with evaluating the self in a given domain or that signals the target's relevance as a good benchmark for doing so would increase social-comparison-driven attention (Festinger, 1954; Goethals, 1987; Suls & Miller, 1977). Social comparison's driving role in competitive behavior is elaborated elsewhere (Garcia et al., 2013; *this volume?*) here, we aim to illustrate how each hypothesized predictor would increase an actor's likelihood of ruminating about the competitor and competitive interactions, thereby increasing his or her likelihood of developing a competitive relational schema. We borrow Garcia and colleagues' organization of these conditions into the three sets, personal factors, relational factors, and situational factors (2013; *this volume?*). While their focal goal was to explain competitive behavior at large as the downstream consequence of social comparison, independent of any specific relationship variance, we suggest that their analysis applies equally well to explaining rivalry. The common feature is increased cognitive elaboration.

Personal factors. In the social comparison model of competition, the personal factors are those that can largely be characterized as descriptions of the actor. A prominent personal factor is

the relevance of the domain to the actor's identity (Hoffman et al., 1954; Salovey & Rodin, 1984). Actors are unlikely to have high comparison concerns with respect to pursuits that they do not value; they are therefore unlikely to pay much attention to their competitors in such pursuits. People only have rivals in domains that they care about. Other personal factors include individual differences that reflect one's baseline tendency to care about relative standing in the first place, including competitiveness (Houston et al., 2002), belief in a zero-sum game (Różycka-Tran et al., 2015), performance orientation (Poortvliet et al., 2009), and social comparison orientation (Gibbons & Buunk, 1999). There is little research so far that links any of these personal factors to the competitive relational schema or the symptoms of rivalry. In fact, it is common practice to restrict data collection to the high end of each distribution, a practice that reflects the tacit assumption that these dimensions matter but that precludes empirical verification.

A new prediction stemming from this reasoning is that individuals who are in a formative time of their trajectory in some domain would be more likely to reflect on their competitors because they are more likely to be questioning their own status and identity (see also Garcia et al., 2009, on uncertainty in the environment). Thus, for example, academic rivalries may be more likely to form among the untenured than the tenured, athletic rivalries may be more likely to form among rookies than among veterans, and business rivalries may be more likely to form among startups than among established corporations. Relatedly, individuals who are low in self-esteem, whether chronically or temporarily, or who are experiencing times of stress may be more likely to engage in social comparison (Gibbons & Buunk, 1999), meaning that they may be more likely to reflect on competitors in an important domain.

Relational factors. Not surprisingly, relational factors have received more empirical attention in the rivalry domain, with similarity as the leading example. From both a diagnostic and motivational point of view, similar others are more likely than dissimilar others to prompt social comparison (Festinger, 1954)—they are both more informative as benchmarks and their relative status can be more threatening. As one step toward validating the dyadic competitiveness that they documented through their social relations analysis, Kilduff and colleagues (2010) demonstrated that different operationalizations of similarity (including both trait similarity and performance similarity, or parity) predicted rivalry strength in NCAA men’s basketball. These predictors included teams’ relative winning percentage, teams’ relative conference title counts, universities’ relative academic quality, and universities’ relative enrollment.

Relationship closeness is another relational dimension that has been linked to social comparison concerns and competition in general (Tesser, 1988; Locke, 2007); though it has been largely neglected in rivalry research. Starting with all other things equal, it seems likely that friends who begin to compete are more likely to experience the symptoms of rivalry than are strangers who begin to compete. Put differently, an actor who sees someone as a friend already has a relational schema in place; thus, adding competition as a prominent feature of the dyad’s interactions is all that would be needed to cement the competitive relational schema.

Situational factors. One of the contributions of the social comparison model of competition is its inclusion of situational factors as additional predictors of social comparison (Garcia et al., 2013; *this volume?*). These include settings that involve high stakes; that involve proximity to a meaningful standard (e.g., vying for entry into the “Top 10”; Garcia et al., 2006; Garcia & Tor, 2007); and that include fewer, more identifiable competitors (Garcia & Tor, 2009). Each of these factors has been linked to competitiveness in general but not to rivalry

specifically, another opportunity for future rivalry research. Indeed, putting these situational factors together sounds like a potent recipe for rivalry. Imagine, for instance, two members of a small work team within a larger company, who repeatedly bump up against each other in critical promotion windows. It is hard to imagine that they would not become rivals.

Exposure also makes clear predictions about social comparison. From a purely probabilistic perspective, the more that an actor is exposed to a given competitor, the more likely she is to reflect on that competitor. Thus, two employees in the same division are more likely to become rivals than two employees in different divisions simply because they are forced to think about each other more often. This has been well-documented in the sports world with demonstrations that the number of past meetings predicts rivalry strength (Kilduff et al., 2010). Proximity has also been documented as a positive predictor of rivalry (Kilduff et al., 2010), which could reflect mere exposure (closer parties are more likely to interact frequently) and/or similarity (closer parties are more likely to share values, compete over similarly valued resources, etc.; see Tyler & Cobbs, 2015).

Just as identity uncertainty might be a personal factor that increases cognitive elaboration, attributional uncertainty might be a relational factor that increases it. When people encounter uncertainty, they are motivated to reduce that uncertainty (Hogg, 2000; Weary & Edwards, 1996) and they tend to experience stronger reactions to the stimuli that caused the uncertainty (Bar-Anan et al., 2009; Wilson et al., 2005). Thus, for example, a competitor who employs unorthodox strategies may attract more attention from others and evoke stronger reactions, leading to higher likelihood of cognitive elaboration if all other factors are held equal. Incidental uncertainty – for example, uncertainty that is “in the air” during periods of stress or novelty – could have similar effects (Garcia et al., 2013).

Schema formation and “instant” rivalries. Reasoning about contributory causes can also be valuable in understanding why some rivalries may be formed relatively quickly despite the importance of history. Generally speaking, having had more previous matchups leads to a stronger sense of shared history and, thus, provides more fodder for schema-formation; but sometimes a few remarkable matchups may lead to more reflection than many unremarkable matchups. In sports, for example, teams in the same conference or division may face each other many times per season, but not form a strong rivalry; yet, sometimes a few remarkable games may capture one’s imagination and lead to quickly formed, though perhaps less durable, rivalries. Consistent with this idea, rich descriptive research has flagged “defining moments” as a potential predictor of rivalry strength (Tyler & Cobbs, 2015). People tend to reflect extensively on near-misses (Medvec, Madey, & Gilovich, 1995), for example, which means that finishing a close second place for a desired reward may increase one’s attention to the winning competitor and promote rivalry. On average, longer histories rather than shorter histories promote rivalry, but a few notable events could theoretically make up for a short history.

What Rivalry Does: Psychosocial Consequences of Rivalry

Many of the documented consequences of rivalry can be grouped into those that affect goal pursuit and those that affect one’s identity or self-concept. (In Figure 1, we depict those that affect moral decision making as a third category, though our forthcoming discussion illustrates some challenging questions about when and why it follows from a competitive relational schema.) Across the goal-pursuit and identity categories, it seems that the consequences can be explained by a general cognitive *expansion* of the rivalry in one’s mind. The interconnections of self, target, and competition-related knowledge and experiences that make up the schema are assumed to facilitate further cognitive connections across time, events, domains, and parties,

making events that are associated with the rivalry feel bigger, more interconnected, and more important. We designate expansion as a proximal symptom of the competitive relational schema in our model; and position other documented symptoms more distally, as downstream consequences of expansion.

Expansiveness: More Competition than Meets the Eye

The more that a given event is perceived as having implications for other parts of one's life, the more important it seems, the more strongly it is experienced, and the more likely it should be to spill over into other parts of one's identity (Clare & Reinhard, 2018; Costin & Vignoles, 2020; Linville, 1985; 1987). Thus, as a direct consequence of the competitive relational schema, rivals (versus mere competitors) and rivalry contests (versus mere competitions) should take up more mental real estate; their subjective influence should expand in the actor's mind, and otherwise isolated events involving the self in competition or the target in competition should be interpreted through the relational schema. When this manifests within competitive interactions between rivals, it is well characterized as "heightened competition" (e.g., Kilduff, 2014). Highlighting that it can have implications even outside of interactions with the rival, we refer to it more broadly as *expansion* or *expansiveness*. For instance, without the schema (i.e., without rivalry), a competitor's performance against a third-party means little to the self—it would likely go unnoticed altogether; but with the schema (i.e., with rivalry), the actor would be more likely to consider the competitor's performance with respect to the actor's own status. Similarly, because current competitions are processed with respect to remembered past interactions and expected future interactions—an idea that we have referred to as *embeddedness* in previous work (Converse & Reinhard, 2016)—the consequences of a specific matchup against

the rival can feel significantly more important. Rivalry competition, more than mere competition, settles old scores and contributes to one's legacy.

Another cohort study that we conducted linked rivalry to expanded impressions of competition (Converse & Reinhard, 2016, Experiment 1). In this study, a sample of NFL fans randomly prompted to reflect on rivals or non-rivals responded to a brief survey that assessed their impressions of the extent to which the focal teams' games felt "connected to past games between the teams" and "like the newest chapter in a longer narrative"; before then completing a survey that measured the strength of their legacy concerns. Consistent with the proposed model, this study found a stronger sense of expansion among fans in the rivalry condition than among those in the non-rivalry condition: Fans reflecting on rivalry contests felt that current games were more interconnected with the past (i.e., important because of previous matchups) and would have stronger implications in the future (i.e., more impact on one's legacy). This result dovetails with results of another study that documented the increased subjective value of rivalry (Kilduff et al., 2016). In that study, Ohio State fans reported that the "psychological stakes ... separate of any tangible stakes" would be higher in a contest against their known rival, Michigan, than against closely matched non-rival teams.

Rivalry and Goal Pursuit

If rivalry contests loom larger psychologically, such that participants in those contests value the outcomes more highly, then it follows that participants should exhibit greater motivation. Indeed, a host of field studies and experiments have documented such an effect. In two survey experiments, participants assigned to reflect on rival (vs. non-rival) competitors reported higher motivation in those contests, above and beyond what was attributable to the tangible stakes of the contest (Kilduff, 2014, Studies 1a and 1b). An archival study that cleverly

operationalized rivalry based on a summary score of observable antecedents (based on, e.g., demographic similarity, performance parity) found that long-distance runners achieved better times in races that included their rivals (Kilduff, 2014, Study 2). Perhaps reflecting the physiological markers of this enhanced competitive motivation, soccer players about to begin a game against an ‘extreme’ (vs. ‘moderate’) rival exhibited higher testosterone levels (Neave & Wolfson, 2003).

One of the most notable features of rivalry is that it extends beyond the bounds of a head-to-head competition—this carryover appears to include increased motivation. When competitors are involved in a rivalry, each party’s performance can motivate the other’s performance across contexts that they would not otherwise be invested in. For example, soccer fans will celebrate a rival team’s loss to a third-party and report that it reflects well on their focal team even though they were not involved in the defeat (Havard, 2014; Havard & Eddy, 2019). In an archival study of NCAA basketball games, Pike and colleagues (2018) found that a rival team’s performance in a matchup with a third-party competitor can generate heightened effort that is sustained across time. Their analysis found that when a college basketball team’s rival wins the NCAA championship, they themselves play harder and win more games in the following year regardless of who they are playing.

Looking beyond levels of motivation, research has also documented that rivalry can change *how* people pursue their goals. Many of these regulatory effects can be theoretically traced to the temporal expansion of rivalry. Rivalries orient competitors toward long-term, global, and high-level thinking. Because these construals are associated with a regulatory focus that emphasizes advancement (*promotion concerns*) over security (*prevention concerns*; Förster & Higgins, 2005; Pennington & Roese, 2003), it follows that rivalry should promote an eager

rather than cautious style of goal pursuit (Converse & Reinhard, 2016). Supporting this prediction, a series of experiments documented that participants previously invited to reflect on rival (vs. non-rival) competitors subsequently preferred eager as opposed to vigilant goal-pursuit strategies: they were more interested in adding to strengths than minimizing weaknesses, paid more attention to offensive formations than defensive formations, more often opted to jump right into an upcoming task instead of practicing first, and were more inclined to offer gut-feeling answers before checking their work. These results demonstrate that in competitive as well as non-competitive situations, rivalries promote a strategic inclination that reflects eagerness rather than vigilance.

With a rival in mind, competitors are also more likely to take risks because they consider risks in terms of potential gains and are less concerned with the uncertainty (Costello et al., 2019; To et al., 2018). Using an archival analysis on NFL games to compare rival and nonrival matchups, To and colleagues (2018) found that teams are significantly more likely to attempt a 2-point conversion instead of the safer 1-point field goal choice if they are playing a rival. In three studies, Costello and colleagues (2019) demonstrated that simply thinking about a rival compels people toward riskier choices, even in non-competitive situations. When college students were prompted to think about an upcoming basketball game with a rival as opposed to a nonrival college, they subsequently found ‘mystery flavor’ chips more enticing (Study 1); when participants viewed advertisements about a rivalry game, they were more likely to exchange guaranteed \$1 coupons for entry into a riskier lottery option (Study 2); and after reflecting on political rivals, participants became more willing to submit personal information to a stranger to enter into sweepstakes (Study 3).

Rivalry and Identity Maintenance

As an individual's identity becomes increasingly intertwined with the individual's conceptions of a competitor, the motivation to maintain that relational identity should in turn increase. Indeed, people often use their social interactions to "verify and confirm" their own self-conceptions (Swann & Read, 1981). Evidence for increased identity-maintenance concerns in rivalry can be found in a study that modeled sports owners' attempts to actively manage their fans' identities (Berendt & Uhrich, 2018). Across three established rivalry dyads in a German soccer league, researchers tested different methods for reducing fan aggression. Specifically, in the form of newspaper articles or team statements, they manipulated the extent to which rivalry was emphasized or deemphasized. Fans did not respond favorably to being told that their rivalry was unimportant. In one of the studies, the acknowledgment condition included a statement that recognized the tradition and atmosphere of the rivalry, whereas the downplay condition included a statement that said the rivalry game was no more important than other games and instructed fans "not [to] exaggerate the rivalry." Compared to a team statement that made no reference to the teams' rivalry, the acknowledgment condition effectively reduced fans' reported aggression; whereas, compared to the same control, the downplay statement increased fans' aggression. One interpretation of this finding is that actors are motivated to maintain this important relational aspect of their self-concept and social identity (Berendt & Uhrich, 2016; Elsbach & Bhattacharya, 2001). In mere competition, the competitive domain might become integrated into one's identity; in rivalry, the competitive relationship also becomes integrated into one's identity.

Extending this reasoning, it is possible that the expansiveness property of rivalry is implicated in the broader and thornier problem of intractable conflicts (Bar-Tal, 2000, 2007; Coleman, 2014). Research suggests that such conflicts are perpetuated in part because the

participants find meaning in them and are motivated to maintain that sense of meaning (e.g., Rovenpor et al., 2017; Northrup, 1989). Future research that merges the social-cognitive perspective with the social-identity perspective may help to illuminate the challenge of seemingly intractable conflict.

Rivalry and Unethical Behavior

One intriguing puzzle for rivalry research is how to account for increased unethical behavior in the context of rivalry. An archival analysis revealed that professional soccer players play dirtier and receive more yellow and red-card penalties in matchups against rivals (Kilduff et al., 2016, Study 4) and a variety of experiments corroborate and extend this finding. In one experiment (Kilduff & Galinsky, 2017, Experiment 1), undergraduates who had been previously assigned to reflect on interactions with a rival (versus those assigned to reflect on interactions with a non-rival) more strongly endorsed Machiavellian attitudes (e.g., “It is hard to get ahead without cutting corners here and there”; Christie & Geis, 1970). A conceptual replication that cleverly created rivalries in the lab showed the same effect (Experiment 2); and subsequent studies documented real behavioral consequences, with rivalry primes increasing participants’ likelihood of cheating and deceiving, both inside and outside of direct competition (Experiments 3 and 4; see also Kilduff et al., 2016).

While the reliability of the behavioral effect appears quite strong given the number and variety of demonstrations, the theoretical path from the competitive relational schema to expansiveness and, in turn, to cheating and poor sportsmanship raises interesting questions. One explanation has focused on the inflated subjective value of rivalry (versus non-rivalry) competitions (Kilduff et al., 2016). The reasoning here includes both an attentional component, which suggests that the inflated importance leads people to focus more on outcomes than on

means, and a deliberative component, which suggests that the inflated importance changes the cost-benefit calculation underlying a conscious decision to risk cheating. A slightly different explanation has focused more on shifting identity salience (Kilduff & Galinsky, 2017). The reasoning here is that the relative increase of one's identity as a successful competitor within the context of rivalry crowds out the moral identity that might otherwise protect one from unethical behavior (Aquino & Reed, 2002). In Figure 1, this might be better illustrated as following directly from schema activation, such that an increase in the "competitive actor" identity hydraulically decreases the "moral actor" identity.

Each of these pathways to unethical behavior is theoretically coherent in itself, and the identity pathway in particular, has received some initial empirical support (Kilduff & Galinsky, 2017); but they offer a potentially interesting conflict with the finding that rivalry increases legacy concerns (Converse & Reinhard, 2016). Indeed, the more that people expect to remember a choice in the future, and the more they think that an action is diagnostic of who they really are, the more likely they are to show restraint and pursue a virtuous path (Touré-Tillery & Kouchaki, 2020; Touré-Tillery & Fishbach, 2015). From this line of reasoning, then, rivalry should encourage ethical rather than unethical behavior. There are many ways in which these competing explanations might be reconciled—perhaps through the identification of important situational or dispositional moderators—but only additional research can do so. Given the importance of promoting ethical behavior in competitive and individual settings, continued investigation of this phenomenon seems worthwhile.

Linking Distal and Proximal Consequences

Although cohort studies have shown associations between expansiveness and a downstream consequences of rivalry, we know of just one study that provides evidence of a

causal link between them (Converse & Reinhard, 2016, Experiment 3). This study capitalized on a unique opportunity to hold the competitor target constant and manipulate participants' impressions of expansiveness. It did so by recruiting individuals who were excited but not highly knowledgeable about a particular competitive dyad. Specifically, this experiment took place in the hours leading up to the 2015 FIFA Women's World Cup finals match between the United States and Japan. Conveniently, the two teams had a compelling shared history; and equally convenient, the United States fanbase was well known to have been swept up in World Cup fever without having a lot of background knowledge about the team. This allowed us to randomly assign fans to a control condition or to a condition intended to increase their sense of temporal connection. Participants in the control condition did not receive any additional information about the teams' shared histories and read that players on the team were "block[ing] out everything except this single game." Participants in the expansion condition read about two recent, close, high-stakes games between the two teams; Japan's 2011 defeat of the United States in the previous World Cup final and the United States' subsequent defeat of Japan to win the gold medal in the following year's Olympic Games. Participants in this condition also read (admittedly heavy-handed) commentary about the United States players' desire to "avenge their [previous] loss ... and prove that their [previous win] was deserved." Participants in the latter condition reported that rivalry was a more important aspect of the focal game than did participants in the control condition; and, moreover, those participants showed a stronger attentional bias for eager rather than cautious strategies, a hypothesized consequence of rivalry.

Aside from this experiment and one other previously reviewed experiment that went a step further back in the causal chain and actually fostered participants' creation of a competitive relational schema in the lab by manipulating their shared history (Kilduff & Galinsky, 2017),

most rivalry studies have been unable to hold the target constant. Continuing to identify and develop new methods for directly manipulating antecedents in the causal chain will be of great value in evaluating the current model and in understanding rivalry more generally.

Competitive Relational Dynamics: Opportunities to Expand the Model

The model that we presented in Figure 1 and have explicated throughout the chapter is best described as a “snapshot” model. It identifies only the essential causal connections and considers them only in a prospective direction from the original competitions that make up a dyad’s competitive history, through a focal actor’s reflection on the competitive interactions and formation of a competitive relational schema that constitutes rivalry, and on to the symptoms that follow when the competitive relational schema is active. It does not depict the likely feedback processes that reinforce the rivalry. Moreover, the model is completely situated within one competitive dyad and does not consider how competitive dynamics unfold outside of that dyad.

Our choice to hone the model in this way invites separate opportunities for integration and expansion. First, an expanded model could identify potential feedback loops and auxiliary connections (cf., Garcia, Reese, & Tor, 2020). At the broadest level, rivalry is likely to be self-reinforcing. As an actor becomes more invested in the rivalry, her competitions with the rival will encourage even more cognitive elaboration, further reinforcing the schema, and so on. Further, such loops may feed back to both distal and proximal causes in the model. For example, increased rivalry may lead the actor to seek more competitive interactions with the rival (thus increasing the shared history; Johnson, 2012); it may lead actors to increase their sense of domain-importance (thus increasing the personal-factors moderator; Garcia, Reese, & Tor, 2020); and it may change activation potential of the schema (thus increasing the variety of contexts in which the rivalry becomes subjectively relevant; Baldwin, 1992).

Second, the model could be integrated with more general models of competitive behavior (e.g., the social comparison model of competition; Garcia et al., 2013) to consider when individuals will have an expansive view of competition independent of the relational path emphasized here. Championship games, for instance, may have many of the ingredients that encourage participants behave as if they are in a rivalry (e.g., the expectation of remembering this game in the future), even without a rival.

Third, the model might be expanded to consider how rivalries affect individuals' other relationships. The competitive relational schema concept has been applied here to understand how an actor might behave with respect to (if not always in direct interaction with) the specific rival target. Thus, both research and theorizing have focused more on the implications of rivalry for the actor's understanding and evaluation of herself (the self-schema), the rival (the other schema), and of the scripts she develops to guide expectations of her interactions with the rival. Much of the heuristic value of the (broader) relational schema construct, however, is that actors often generalize it to understand other relationships (Baldwin, 1992). This raises an interesting question: Do actors with a strong sense of competitive expansiveness vis a vis the rival eventually generalize those expectations to other competitors; or do those actors experience more of a contrast effect, downgrading all other competitions in light of the rivalry? Perhaps ironically, rivalry research—which was founded on the idea that some competitive relationships are distinctive from others (Kilduff et al., 2010)—may be well positioned to ask how rivalry affects the perception of other competitive relationships over time (Andersen & Cole, 1990).

Conclusion

Rivalry can be a slippery construct for psychological science. But this has not stopped researchers from inventing and refining rigorous approaches to its investigation. Only a decade

before this chapter was written, the identification of dyadic competitive variance (Kilduff et al., 2010) energized social psychologists and other behavioral scientists to embrace the intrapersonal and interpersonal richness that characterizes rivalry. Now, there are a wide variety of field, archival, and experimental methods available, and in continued development, for studying rivalry rigorously while embracing its complexity. We suggest that the competitive relational schema provides a valuable conceptual anchor for this endeavor, marking a place where relational, social-cognitive, organizational, and behavioral perspectives can pursue cooperative progress toward the understanding of competitive relationships.

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Figure 1. Hypothesized causal chain in the social-cognitive approach to rivalry. The competitive relational schema is a working mental model that incorporates representations of the self and the rival competitor with memories, procedural knowledge, goals, plans, and affect that have been relevant to their competitive interactions. It arises from cognitive elaboration of a shared competitive history and manifests as an expansive view of competition.

