

On Rivalry and Goal Pursuit: Shared Competitive History, Legacy Concerns, and Strategy Selection

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Seven studies converge to show that prompting people to think about a rival versus a nonrival competitor causes them to view current competitions as more connected to past ones, to be more concerned with long-term legacy, and to pursue personal goals in a more eager, less cautious manner. These results are consistent with a social-cognitive view of rivalry that defines it as a competitive relational schema. A preliminary analysis revealed that people were more likely to appeal to past competitions to explain the importance of current rivalry than nonrivalry contests. Experiment 1 showed that people view rivalry versus nonrivalry competitions as more embedded in an ongoing competitive narrative and that this perception increases legacy concerns. The next 2 experiments used a causal chain approach to examine the possibility of legacy concerns acting as a mediator between rivalry and eagerness. Experiment 2a demonstrated that longer (vs. shorter) competitive histories are associated with increased legacy concerns. Experiment 2b manipulated legacy concerns and found that this shifted regulatory focus toward eagerness. Finally, 3 experiments tested the direct effect of thinking about a rival on eager strategy selection: Thinking about rivals (vs. nonrivals) led people to be more interested in offensive than defensive strategies (Experiment 3), to initiate rather than delay their goal pursuit (Experiment 4), and to rely on spontaneous rather than deliberative reasoning (Experiment 5). We suggest that rivalries affect how people view their goals and the strategies they use for pursuing them, and that these effects are at least partially attributable to the shared history between individuals and their rivals.

Keywords: rivalry, competition, motivation, self-regulation, goals

Whether for valued resources, sport, or outright survival, people often find themselves in competitive interactions. Any time one party's goal can be accomplished only at the expense of another party's goal, the two are, by definition, in competition (Deutsch, 1949). If international glory can go to only one nation, market share to only one company, or championship accolades to only one team, then the opposing nations, companies, or teams are competitors. Sometimes these competitions are defined by more than their objective structure. Sometimes they involve relationships. Many competitions occur not between strangers who happen to have opposing goals, but between parties who have singled each other out over time as rivals. Just as some acquaintances have many notable interactions over time and go on to become "significant others," some

competitors go on to become rivals. These are the warring politicians with longstanding battles, CEOs who have targeted each other's organizations for years, and the current contestants swept up in generations-long sports rivalries. Our aim in this work is to examine how invoking rivalries affects how people view the implications of their goals and the self-regulatory strategies that they choose for pursuing those goals. We propose that thinking about a rival, even outside of an actual competition, leads people to become more concerned with how their current goal pursuit will reflect on them in the future and, consequently, to prefer eager strategies over cautious ones for pursuing those goals.

Rivalry refers to an established competitive relationship that an individual perceives between herself and another individual or group. It emerges over time as she accumulates a history of notable competitions with the other. These competitions might be notable for any number of reasons, including their relative parity, intensity, or identity relevance (Kilduff, Elfenbein, & Staw, 2010). The key to rivalry formation, we suggest, is that the shared history leads the individual to develop a more detailed cognitive representation of herself interacting competitively with the partner. As any relationship develops, people construct increasingly detailed mental representations of the partner, themselves with the partner, and the dyad itself; collectively referred to as a relational schema (Andersen & Cole, 1990; Baldwin, 1992; Fitzsimons & Bargh, 2003; Miller & Read, 1991). In our view, rivalry is a relational schema in which the representations of partner, self, and dyad are linked to representations (i.e., memories and expectations) of shared competitive interactions. For the participants, rivalry is therefore about

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more than a single competition or its immediate consequences. Rivalry contests feel like they are psychologically embedded within an ongoing competitive narrative.

In the current work, we reasoned that reminders of a rival should activate *legacy concerns* about how one's current performance will be remembered in the future and, consequently, affect the manner of goal pursuit. In general, competitive situations evoke comparison-related identity concerns (Festinger, 1954; Garcia, Tor, & Schiff, 2013). People compete to enhance their relative standing and self-evaluations (Tesser, 1998). We propose that adding rivalry to competition, and thus invoking the narrative that connects past, current, and future competitions, puts those identity concerns into a longer-term perspective. When a rival is involved, people think not just about the immediate stakes of competition, but about how it defines them relative to the rival over time. In other words, compared to mere competition, rivalry arouses concerns about how the current competition will be remembered in the future. We further propose that being motivated by these legacy concerns will lead to a less cautious, more eager style of goal pursuit. Past research shows that a more distanced view of one's goals is associated with a focus on aspirations and ideals, rather than on safety and obligations (Förster & Troy Higgins, 2005; Joireman, Shaffer, Balliet, & Strathman, 2012; Pennington & Roese, 2003). This promotion orientation should prompt the use of eager rather than cautious strategies (Crowe & Higgins, 1997). In short, our model predicts that thinking about a rival, compared with thinking about a closely matched nonrival competitor, will increase legacy concerns and induce a preference for eager rather than vigilant strategies of goal pursuit.

The Rivalry Construct: Origins, Characteristics, and Definition

As with any relationship, it is theoretically and empirically difficult to provide a parsimonious characterization of rivalry. However, anyone who has ever felt the burn of competition for some parties more than for others, regardless of the setting, can attest that there is often more to competition than the stakes of the moment. Although competition has been a central topic in psychology and social science more generally, most relevant research has either ignored that relational layer or focused on independent aspects of it, such as the number and nature of previous interactions (Chen, 1996; Johnson et al., 2006; Klein, Goertz, & Diehl, 2006), the expectation of future interaction (Axelrod, 1984; Heide & Miner, 1992; Murnighan & Roth, 1983; Rand, Dreber, Ellingsen, Fudenberg, & Nowak, 2009), the degree of similarity (Festinger, 1954; Rijsman, 1974; Seta, 1982; Tesser, 1988), or the relative status of the parties (Garcia, Tor, & Gonzalez, 2006). Although much of this work has provided productive insight into competition, none of it has attempted to capture the psychological richness of rivalry.

Empirical and Conceptual Foundations of Rivalry

Recently, Kilduff and colleagues (2010; Kilduff, 2014) have made a number of fundamental advances in conceptual development and empirical identification of rivalry. Their central insight was to recognize an emergent competitive relationship that develops in some competitive dyads but not others, an insight that has

been bolstered by three empirical contributions. Specifically, they have been able to (a) demonstrate the reliable presence of dyadic variance, (b) relate that dyadic variance to hypothesized antecedents, and (c) relate that dyadic variance to a key hypothesized consequence, competitive behavior.

To identify dyadic variance, they used a round-robin design in the context of National Collegiate Athletic Association (NCAA) basketball. Using a social relations model (Kenny, 1994; Kenny & La Voie, 1984), they showed that a significant amount of variance in reported "rivalry" between one team and another could be explained by relationships. This means that some teams felt a rivalry with certain targets that was above and beyond the rivalry that they felt with third parties on average, and also above and beyond the rivalry that third parties on average felt with the target. As an example, they highlighted that Oregon State's ratings of rivalry with Oregon were stronger than Oregon State's average ratings of rivalry with other teams in the same conference, and also stronger than what other conference teams on average felt toward Oregon. Further bolstering the relational perspective, they also showed that the strength of the observed relational effects correlated with hypothesized dyadic antecedents of rivalry, including similarity (operationalized as geographic proximity, historic status, and overall university characteristics), parity (operationalized as head-to-head winning percentages), and exposure (operationalized as the number of past meetings between the two). Together, these two findings show that whatever it is that people commonly identify as "rivalry" can be both measured and predicted. Finally, follow-up work revealed that whatever that dyadic variance represents, it can predict the vigor of competitive behavior above and beyond simpler covariates such as objective stakes, disliking, and similarity (Kilduff, 2014).

This seminal research also provided the conceptual foundations for constructing a useful definition of rivalry. Specifically, Kilduff and colleagues (2010) conceptualized 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" (p. 945). This description captures three critical elements of any useful definition of rivalry. First, rivalry is a subjective perception of an involved actor. It exists in the actor's mind and cannot be identified solely by objective structural features of the competition (Deutsch, 1949; Garcia, Tor, & Gonzalez, 2006). Second, rivalry can develop only when there is a shared history between the two parties. Whereas *competition* is a direct function of the situation—meaning that it can be turned on or off as a direct result of the parties' goals being put in opposition or not—rivalry develops from competition, over time, as a function of how meaningful the dyad's competitions have been (to one of the parties). Third, rivalry increases the importance of a competition beyond its objective stakes. This assumption has been supported by the observation that the physical or psychological presence of a rival is associated with increased effort (Kilduff, 2014; Kilduff et al., 2010; Reinhard & Converse, 2015), and by related observations that a stronger feeling of competition for a particular target can increase testosterone levels among competing individuals (Neave & Wolfson, 2003), aggressive behaviors among competing fans (Cikara, Botvinick, & Fiske, 2011), and market attacks among competing firms (Chen, Kuo-Hsien, & Tsai, 2007).

In summary, laying the groundwork for the developing study of rivalry, previous research has been able to identify idiosyncratic competitive relationships and to demonstrate meaningful consequences of their existence. Moreover, extant theorizing has highlighted three key qualities of these competitive relationships, including their subjective nature, their dependence on shared history, and their consequences for psychological engagement in a competition. One aim of the current work is to continue the conceptual development of rivalry. Therefore, we focus on the social cognition of rivalry as a way to identify more specifically what rivalry is and how it operates on behavior.

Continued Conceptual Development: Rivalry as a Relational Schema

We propose a social-cognitive definition of rivalry that incorporates the behavioral characteristics described above and that is consistent with extant observations. The strength of our definition is that it distinguishes rivalry from mere competition not by behavioral consequences, but by the presence of a specific cognitive construct with testable properties. In our view, rivalry is defined by a competitive relational schema. In general, relational schemas are “cognitive structures representing regularities of interpersonal relatedness” (Baldwin, 1992, p. 461). They are assumed to include “images of self and other, along with a script for an expected pattern of interaction, derived through generalization from repeated similar interpersonal experiences” (p. 462). These “images,” or representations, may include generalizations about self and other, episodic memories, procedural knowledge, goals, plans, expectations, and affect (Bowlby, 1969; Cesario, Plaks, & Higgins, 2006; Higgins, 1987; Horowitz, 1989; Mitchell, 1988; Plaks & Higgins, 2000; Planalp, 1987; Trzebinski, 1985; Schank & Abelson, 1977). In general, they are thought to be working models of self, other, dyad, and context that help one to navigate interactions and enact behaviors expected to lead to success.

We suggest that the relational schema becomes what we call a *competitive relational schema*, and therefore constitutes a rivalry, when one is generalizing from a shared history of competitive interactions. The resulting schema is one in which the images of self and other are represented in the context of competition (e.g., associated with memories of past competitions), and in which the expected pattern of future interaction is therefore competitive. We consider this a formalization and extension of Kilduff and colleagues’ (2010) ideas that rivalry exists in the actor’s mind and requires prior interaction. The key conceptual advance here is being explicit that what exists in the actor’s mind is a competitive relational schema. More important, this clarifies that prior competitive interaction is necessary (because it provides the knowledge to be generalized), but not sufficient (because it may or may not lead to a well developed relational schema). The prior interaction must also be notable enough—for example, because the competitor is similar and/or the contests were close (Kilduff et al., 2010; Medvec, Madey, & Gilovich, 1995)—to promote the kind of continued reflection that gives rise to an organized, elaborated schema.

Our analysis focuses on one property in particular that should emerge from the rivalry schema’s cognitive structure, a property that we refer to as *embeddedness*. It is the sense that a given competition is embedded in an ongoing narrative, the feeling that

current competitions are connected to past competitions and the expectation that they will be remembered in the future. In rivalries, old grudges have to be settled and past victories have to be validated. A fan involved in one of the United States’ oldest sports rivalries (Michigan vs. Ohio State football) described this property when he said, “You feel you are a part of something that stretches from before you existed and will be here long after you are gone” (Roy & Kestern, 2007). Unlike some other nonessential but common qualities of rivalry (e.g., similarity, proximity), embeddedness is intrinsic to rivalry. It is at least part of what makes rivalry special.

Finally, it is worth highlighting that merely associating someone with competition is not sufficient for a rivalry by this definition. For example, many people might think of “competition” when they hear “Michael Jordan,” “Steve Jobs,” or “Vladimir Putin” without having ever been in real (or vicarious) competitions with those figures. These are not rivalries unless there is a basis for construing a relationship. The relational-schema definition makes clear that rivalry is more than associating a target with the idea of competition; it is associating self, other, and dyad with a history and expectation of competitive interactions. Our definition does, however, allow for the formation of vicarious rivalries, which we expect to have similar cognitive and behavioral effects. When an individual’s representation of self includes collective identities, that individual will construe the group’s competitions and its relationships as his or her own (e.g., Tajfel, 1982; Turner, Oakes, Haslam, & McGarty, 1994). This is why sports fans, for example, feel like they are a part of their team’s rivalries without ever stepping foot on the playing field (e.g., Cikara, Botvinick, & Fiske, 2011; Hastorf & Cantril, 1954; Xiao & Van Bavel, 2012). In this way, Larry Bird fans, PC aficionados, and patriotic hawks—because they have a basis for construing a vicarious relationship—may well feel rivalries with Jordan, Jobs, or Putin, respectively.

Empirical Approach to Rivalry

An aim of our empirical approach is to effectively capture the realistic complexity of rivalry, while also isolating the sense of embeddedness that we think drives some of the effects of rivalry. Many of the current studies compared the effects of thinking about idiosyncratically held rivals to the effects of thinking about closely matched incidental (or “nonrival”) competitors. To identify appropriate rivalries, we used an idiographic approach in these studies, allowing people to name their own idiosyncratic rivals. Following the tradition of close-relationships research, we assume that the relationship in all its complexity is socially meaningful and, therefore, of potentially important consequence. In line with work that examines the consequences of thinking about specific relationship partners, such as mothers, fathers, and academic advisors (e.g., Baldwin, Carrell, & Lopez, 1990; Fitzsimons & Bargh, 2003; Shah, 2003b), these studies examine the effects of thinking about rivals by activating the full, multifaceted social construct. At the same time, because rivalries emerge from particular circumstances, our work acknowledges that rivals will tend to differ from nonrival competitors on multiple dimensions (e.g., similarity, proximity) in addition to the sense of embeddedness that comes from shared history. To assess the relative contribution of embeddedness, we examined spontaneous mentions of shared history in a preliminary analysis; we examined self-report measures of the

experience of embeddedness in Experiment 1; we prompted people to think of competitors with whom they had a longer history or a shorter history in Experiment 2a; and we manipulated the sense of embeddedness directly in Experiment 3. Looking across these methods should provide a picture of potential real-world behavioral consequences of rivalry while also beginning to specify the psychological processes that are responsible.

Consequences for Goal Construal and Strategy Selection

People evaluate, choose, initiate, and pursue many of their goals in the presence of close others, with the support of close others, and with close others in mind. The overlapping importance of each in daily life occurs to such an extent that cognitive representations of goals are often a prominent aspect of a given relational schema (and vice versa; Baldwin, Carrell, & Lopez, 1990; Carver & Scheier, 1998; Fitzsimons, Finkel, & van Dellen, 2015; Kruglanski et al., 2002). Even the mere reminder of a given relationship can set in motion a variety of self-regulatory processes, such as activating goals and performance standards that are associated with that person (Shah, 2003a), triggering nonconscious pursuit of those goals (Fitzsimons & Bargh, 2003), and coloring one's appraisal of goals, including attainment expectations, value judgments, and reactions to progress (Shah, 2003b). If your Nana expects you to get good grades, for example, then merely thinking about Nana can cause you to feel more committed to academic achievement, to study harder when presented the opportunity, and to appraise academic success as a higher-value and more attainable goal. Thus, the mere activation of relational schemas can profoundly impact self-regulation. Self-regulation in competition and in goal pursuit more generally involves not only initiating and modulating effort, but also evaluating implications of attainment and choosing appropriate means and strategies. The current work explores implications for means and strategies.

Rivalry and Legacy Concerns

We hypothesize that reflecting on a rival can affect one's construal of relevant goals. If an intrinsic feature of rivalry is the sense of embeddedness, the sense that one performance opportunity is part of a larger narrative, then rivalry should arouse legacy concerns to a greater extent than should mere competition. This follows from projecting today's embeddedness into tomorrow: Just as past performances in this rivalry are still meaningful today, today's performance will still be meaningful in the future. Relative to the narrower, more immediate implications of an isolated competition, then, the implications of a rivalry contest should be construed as longer-term. A participant from one of our studies described this chain, explaining that it is important to beat his rival now because "The [rivalry games] are marked in bold in history." This comment reflects the increased awareness in rivalry that performance opportunities will be remembered, that they will become part of one's history. Therefore, we predicted that reflecting on a rivalry, versus reflecting on a mere competition, would increase legacy concerns.

Rivalry and Eagerness

Regulatory focus theory posits that "people represent and experience basic needs for advancement (*promotion concerns*) in an entirely different fashion than they do basic needs for security (*prevention concerns*)" (Molden, Lee, & Higgins, 2008, p. 170; Higgins, 1997, 1998). Within these two modes of self regulation, people focus on different incentives (gains and nongains when promotion oriented; losses and nonlosses when prevention oriented), and pursue their goals using different strategic orientations. The current work focuses on strategic orientation, asking when people will assume a more eager strategy, focused on advancement opportunities, and when they will assume a more vigilant strategy, focused on cautious avoidance of mistakes (Crowe & Higgins, 1997; Higgins, Chen Idson, Freitas, Spiegel, & Molden, 2003). For example, in preparation, the vigilant competitor would be focused on improving by minimizing his weaknesses, whereas the eager competitor would be focused on improving by bolstering his strengths (Higgins et al., 2003). When competition appears imminent, the vigilant competitor would cautiously delay initiation (perhaps to build up resources, learn more, or even to forestall competition altogether), whereas the eager competitor would readily engage. Once competition is underway, the cautious competitor would be vigilant about avoiding errors, whereas the eager competitor would rely more on instincts.

If rivalry activates legacy concerns as we expect, then we further expect rivalry to prompt a less cautious, more eager style of goal pursuit. We derive this hypothesis by generalizing from the demonstrated association between long-term (vs. immediate) thinking and a promotion (vs. prevention) focus (e.g., Joireman, Shaffer, Balliet, & Strathman, 2012; see also, Liberman & Trope, 1998; Trope & Liberman, 2003). For instance, based on the hypothesis that promotion-focus should predominate for temporally distant goals because it focuses attention on ideals rather than on security, researchers have demonstrated a link between temporal distance and regulatory focus (Pennington & Roese, 2003). In one study, students thinking about an upcoming exam were relatively more concerned with promotion than prevention when the exam was far off than when it was imminent. In another investigation, based on the complementary hypothesis that global processing fits a promotion-focus and local processing fits a prevention-focus, other researchers have demonstrated a link between processing breadth and regulatory focus (Förster & Troy Higgins, 2005). In one study from that line, participants who were induced to assume a global mindset were more comfortable making choices in a promotion-oriented than prevention-oriented manner (and vice versa, for those induced to assume a local mindset).

In our model, rivalry activates legacy concerns. These legacy concerns are a more abstract, temporally distant set of evaluative concerns than the concerns activated by mere competition. We therefore expect, given the match between temporal distance and promotion focus, that legacy concerns will promote the strategic inclination that goes along with a promotion focus, namely eagerness rather than vigilance (Crowe & Higgins, 1997; Higgins et al., 2003). When thinking of their rivals, rather than of their mere competitors, we expect people to focus on the ideal legacy they would want to leave behind, eagerly striving to advance, rather than cautiously protecting their standing.

No research that we are aware of has examined the role of legacy concerns in rivalry, nor has any work examined the specific self-regulatory strategies that rivalry invokes, but a couple of extant findings are consistent with the hypothesized relationship between rivalry and eagerness. For instance, effort increases that are associated with rivalry in a number of studies may well be, but are not conclusively, the result of eager rather than cautious strategies. Among these outcomes are pace in long-distance running (Kilduff, 2014, Study 2), which would seem to be hampered by a cautious, prevention-oriented approach, and blocked shots in basketball games (Kilduff et al., 2010), which are more aggressive and riskier than the cautious defensive strategy of trying to contest shots while avoiding fouls (see Toosi, Masicampo, & Ambady, 2014). Certainly, these outcomes are only suggestive of an eager rather than cautious approach, and our studies use tasks that can more clearly differentiate these goal-pursuit strategies.

Research Overview

To summarize, we propose that thinking about rivalry competitions, compared with thinking about nonrivalry competitions, involves the subjective perception that the competition is embedded in an ongoing competitive narrative. We further propose that the sense of embeddedness increases legacy concerns and leads to a less cautious, more eager style of goal pursuit (see Figure 1). We first present a preliminary analysis of accumulated free responses to the question of why it is important to win against a competitor who is either a rival or a nonrival. These data begin to address the presumed role of embeddedness and competitive narratives in rivalry (represented by the relationship between a' and a in Figure 1). Relying on the vicarious sense of rivalry experienced by National Football League (NFL) fans, Experiment 1 tested the relationship between rivalry and legacy concerns ($a \rightarrow b$) by comparing fans' expectations that a rivalry versus a nonrivalry game would become a part of their team's legacy. This study further examined the specific role of embeddedness in driving the effects of rivalry on legacy ($a' \rightarrow b$) by measuring the sense of embeddedness involved in the rivalry and nonrivalry games and examining it as a predictor of legacy concerns. Then, using first-person, interpersonal rivalries, Experiments 2a and 2b took a causal chain approach to investigate legacy concerns as a potential mediating variable between rivalry and eager strategy selection ($a \rightarrow b$ and $b \rightarrow c$). Experiment 2a prompted participants to think about one competitor with whom they have a long history and another competitor with whom they have a shorter history and compared the extent to which participants expected to care about competitions with each of those targets into the future. Experiment 2b then manipulated participants' thoughts about remembering competitions in the future and measured their preference for improving in the relevant domain through eager means or vigilant means.

Experiments 3–5 then tested the direct effect of rivalry on eager strategy selection. Experiment 3 used the context of the FIFA Women's World Cup to manipulate the extent to which fans thought of an important game as embedded in a shared history or not and then measured their interest in eager versus vigilant means ($a' \rightarrow c$). Experiments 4 and 5 asked participants to name and describe a rival or a nonrival competitor and then measured their actual use of an eager or vigilant strategy ($a \rightarrow c$). In Experiment

4, recreational athletes reflected on a rival or nonrival competitor and then decided whether to initiate a performance task (eager strategy) or practice more (cautious strategy). In Experiment 5, serious fantasy sports players reflected on a rival or nonrival competitor and then responded to word problems chosen so that an eager strategy would produce more errors. We also measured additional aspects of participants' feelings about the target in these studies, such as liking and respect, to assess as alternative mediators.¹

Preliminary Analysis: Shared History in Rivalry

Consistent with other relational views of competition, we recognize the role of shared history between an actor and a target in the development and formation of a rivalry. We go further than extant perspectives, however, by emphasizing that the shared history is important because it promotes the development of a competitive relational schema, which includes representations of past interactions. One property that should emerge from this cognitive arrangement is that people should perceive rivalry competitions, more so than nonrivalry competitions, as embedded within a competitive narrative. One effect of such a property would be that current competitions are seen to gain meaning from past competitions. If people do perceive rivalry as embedded, we might expect them to mention past competitions when describing why current rivalry (more so than nonrivalry) competitions are important.

To test whether this property manifests naturally in people's representations of rivals, we examined a collection of open-ended written responses to the question of why it is important to beat a competitor who is either a rival or nonrival. These responses were recorded in a series of experiments that we ran prompting NFL fans to either reflect on their favorite team's biggest rival or another talented competitor.² The NFL is an excellent context in which to study rivalries. Professional football has been the most popular spectator sport among Americans for 30 years and gains much of its popularity from the traditions that people have of watching with friends and family (Harris Interactive, 2014). Given this social importance, many fans experience a personal stake in the week-to-week and long-term successes and failures of their favorite teams. Many fans come to care about the rivalries that form over time and take pride (or shame) in the long-term legacy of their team. For example, one participant said he wanted his team to win against the rival this year, "so their fans will stop bragging about the Super Bowl win" against his team. Another participant referred more generally to "The history! The two teams have been

¹ Target sample sizes for individual experiments were each determined in advance of data collection based on considerations of participant availability, study design, and collection method. We report all data exclusions, all manipulations, and all measures for all studies. Datasets and unabridged materials for all studies are available online at <https://osf.io/a5u2d/>. For studies using data collected on Amazon Mechanical Turk (mTurk), we report the number of complete responses in the main text and elaborate on the data collection plan and procedures in Appendix A.

² Sample A ($n = 175$) completed an experiment designed to test the effect of rivalry on strength of motivation (Reinhard & Converse, 2015). Sample B ($n = 208$) was an earlier version of the current Experiment 1, which replicates Experiment 1 but with a less precise measure of legacy concerns. Their procedures were identical up to the point of the free-response item on which this analysis focuses.

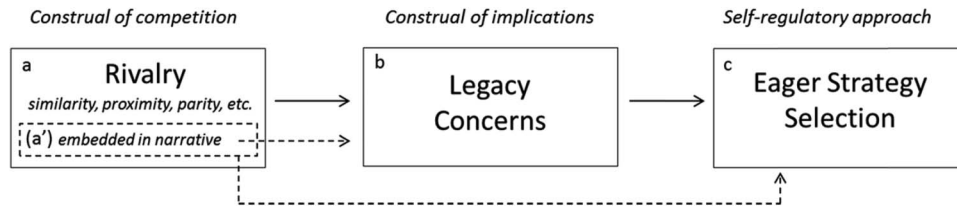


Figure 1. Proposed social-cognitive model of rivalry's effects on goal construal and strategy selection. *Note.* Box (a) represents rivalry as a multi-faceted independent variable. Properties inside (a) refer to qualities of a dyad that are assumed to be higher in rivalry than in mere competition, with box (a') representing one quality that is assumed to be uniquely characteristic of rivalry. Arrows represent hypothesized causal relationships with dashed-lines representing relationships assumed to be driven by a specific feature of the multi-faceted construct.

playing each other for years. . . ." To examine this more rigorously, we had coders determine which responses referred to shared history as one of the reasons it seemed important to beat the target team. We then compared these frequencies for rival versus nonrival targets.

Method

We originally designed these prompts not as measures, but as part of a manipulation procedure intended to increase reflection about a rival or nonrival target. Specifically, one step in the manipulation asked participants to describe their reasons for wanting to beat the target competitor. Informal examination of the responses revealed that many participants spontaneously referred to past contests as a reason for wanting to win current ones and this analysis provides a more formal test.

We advertised for both samples on Amazon's Mechanical Turk (mTurk), soliciting NFL fans to complete an online survey about "football knowledge . . . [and] everyday goals." The final sample included 351 participants (119 women, 231 men, 1 unspecified). All participants selected the name of their favorite NFL team and then answered a series of questions about their collective identity, loyalty, and length of time as a fan. The survey then diverged by condition. In the rival condition, participants selected the name of their team's "biggest rival in the NFL." In the nonrival condition, participants selected "4 talented teams that the [favorite-team] will play this season." We assumed participants would list the most accessible competitors first and that rivals would be the most accessible (Fitzsimons & Shah, 2008; Higgins, King, & Mavin, 1982). Therefore, we selected each participant's fourth-listed competitor to serve as the nonrival target.

Next, all participants responded to a series of football questions that we designed to increase their depth of reflection about the target team. They wrote down the name of the target team's best player and responded to a scale item asking how badly they wanted to win against that team. Next, they saw an image of the target team's logo and completed a free response question below it by describing what the games between the two teams are generally like, such as "the atmosphere," and "how the fans and players feel." Next, with the logo of the target team still displayed, they completed the focal measure of the current analysis. The prompt said, "Describe in a few sentences why it is important for you to beat the [target team]. The more details you give, the more we can learn about your competitive stance." Participants invoked a variety of reasons that referred to the objective stakes of the compe-

tion (e.g., "the [target team] is ahead in the standings"); intrinsic pleasure associated with winning (e.g., "a good feeling, [knowing] that your team did well"); social consequences for fans (e.g., "bragging rights"); dislike of the other team (e.g., "[They] are a dirty team! Their players take cheap shots . . ."); and, critically, shared history. We had coders indicate whether each response included a reference to shared history.

Response coding. Two independent coders, one who was blind to condition and hypotheses and one who was blind to condition, examined each response to determine if it did or did not refer to shared history as one of the factors contributing to the importance of future wins (1 = yes, 0 = no). This included references to a specific past meeting (e.g., the outcome of a specific game or series of games) and references to a general, shared history (e.g., traditionally competing to win the conference). It did not include references to one team's history if it was not shared history (e.g., "they're always good").

One unanticipated coding challenge emerged. Many responses simply invoked the rivalry by name (e.g., "It is important because they are our rival."). It is debatable whether to count these as mentions of shared history. Counting them as "no" seems illogical, but counting them as "yes" may border on tautological. Therefore, we present analyses using three different thresholds: a conservative threshold that codes these cases as "0," a liberal threshold that codes them as "1," and a compromise threshold that excludes them so they cannot inflate the numerator or the denominator. Coders agreed on 95.2% of decisions about whether a case met the conservative threshold and 94.0% of decisions about whether a case met the liberal threshold. For the cases on which coders disagreed, a third coder who was blind to condition but not to hypotheses cast the deciding vote.

Results and Discussion

In our focal analysis with the "compromise threshold," we excluded 33 responses from the rivalry condition and 14 from the control condition who referred to a "rivalry" by name (e.g., "It is important because they are our rival") but did not elaborate on the shared history beyond that. Among the remaining participants, 24.5% mentioned shared history in the rivalry condition, compared with 13.7% in the control condition, $\chi^2 = 5.72, p = .017$. This analysis makes no assumptions about how people are using the word rivalry and finds initial evidence that they are more likely to appeal to past contests as a reason for the importance of current rivalry contests than current nonrivalry contests.

For comparison, we then considered the data with no exclusions. Using the conservative criterion, in which referring to a rivalry without elaborating on aspects of the shared history is considered not to refer to shared history, 20.1% of participants in the rivalry condition mentioned shared history, whereas only 12.6% in the control condition did, $\chi^2 = 3.60, p = .058$. Finally, using the liberal criterion, in which referring to a rivalry is assumed to imply the presence of a shared history, the rate increases to 38.0% in the rivalry condition, compared with 21.0% in the control condition, $\chi^2 = 12.19, p < .001$. Thus, regardless of the assumptions one makes about what individuals mean when they invoke rivalry as a reason for the importance of a competition, these observations provide preliminary support for the assumption that rivalry involves a stronger sense of embeddedness than does mere competition.

When prompted to explain why it was important to beat a rival versus a nonrival competitor, participants were approximately twice as likely to spontaneously refer to a shared history. Although people use the word rivalry broadly in everyday life, this result reveals some common appreciation for the role of shared history. It supports the assumption that rivalries gain meaning in the present based on what happened in the past. This also supports the possibility that rivalry-related feelings of embeddedness could have consequences naturalistically, even when experimenters do not activate it by trying to measure it.

Notably, a nontrivial number of participants in the control condition referred to rivalries and shared history. Why would people refer to shared history in a nonrivalry condition if this is a definitive feature of rivalry? It could be because in everyday usage, the term rivalry is often used interchangeably with competition, or at least with important competitions, or because people are referring to less-established but developing rivalries. Alternatively, it might reflect noise in our procedure. Some participants may well have many rivals, leading some in our control condition to reflect on rivals even though our comparisons assume they are not. This source of error would, if anything, lead us to underestimate the effects of rivalry, a possibility that we consider in subsequent studies when possible.

Although the free-response result reflects people's natural understanding, we wanted to more rigorously measure perceptions of embeddedness. Experiment 1 examined embeddedness and legacy concerns in rivalry and nonrivalry matchups using self-report scales. It also measured participants' perceptions of similarity to, competitive parity with, and frequency of exposure to the target, allowing us to test if embeddedness predicts legacy concerns above and beyond other relational qualities that are common to rivalry.

Experiment 1: Rivalry, Embeddedness, and Legacy Concerns

We designed Experiment 1 to test whether rivalry competitions are perceived as more embedded in a competitive narrative than are nonrivalry competitions, and whether these perceptions of embeddedness predict legacy concerns beyond competitors' own perceptions of three previously established correlates of rivalry (similarity, parity, and exposure; Kilduff et al., 2010), which we refer to here as "common qualities." Given that outside markers of these qualities, including objective measures and third-party judg-

ments, tend to be higher for pairs of rivals than for pairs of nonrivals, it is likely that competitors themselves also perceive these qualities more strongly in their relationships with rivals. It is therefore important to test whether embeddedness emerges as an independent predictor.

Experiment 1, therefore, allowed us to test three predictions from our proposed model. We predicted that participants who reflected on games against rival targets, versus those who reflected on games against nonrival targets, would construe those games as more strongly embedded in an ongoing competitive narrative, consistent with the free-response measure described in the Preliminary Analysis. We further predicted that participants thinking about rivalry (vs. nonrivalry) games would be more concerned with how those games would reflect on them in the future, influencing their group's legacy. Finally, we predicted that the sense of embeddedness would predict legacy concerns independent of participants' own perceptions of similarity, parity, and matchup frequency.

Method

This experiment used a between-subjects design with participants randomly assigned to reflect on a rival or a nonrival competitor. Self-identified NFL fans recruited on mTurk completed the study online ($n = 202$). They began by following the previously described procedure: They selected their favorite NFL team, answered some background questions about that team, named their team's biggest rival (rivalry condition) or four talented teams their team would play this season (from whom we selected the fourth; control condition), and then responded to some questions about the target team that were designed to encourage reflection on the teams' competitive interactions.

Continuing from there, participants answered two sets of questions in counterbalanced order. One set included measures of perceived similarity ("Would an outside observer (like a sports announcer) say that the [favorite team] and the [opponent] are of similar status in the NFL?"; 1 = *not at all similar* to 7 = *very similar*);³ perceived competitive parity ("In general, how competitive are the games between the [favorite team] and the [opponent]?"; 1 = *not at all competitive* to 7 = *very competitive*); and perceived exposure frequency ("In general, how frequently do the [favorite team] play against the [opponent]?"; 1 = *not at all frequently* to 7 = *very frequently*). The other set of questions included a two-item measure of embeddedness (both on 7-point scales, with labels *strongly disagree*, *somewhat disagree*, *slightly disagree*, *neither agree nor disagree*, *slightly agree*, *somewhat agree*, *strongly agree*, coded from -3 to 3): "When I watch a game between the [favorite team] and the [opponent], the game feels in some ways connected to past games between the teams." and "When I watch a game between the [favorite team] and the [opponent], it feels like the newest chapter in a longer narrative."

³ The phrasing of the similarity question was intended to discourage motivated perception of dissimilarity (e.g., "We're nothing like those guys!"). We did this because a pilot study using a direct question ("In general, how similar are the [favorite team] to the [opponent]?") found virtually identical levels of perceived similarity across conditions, diverging from the finding that outside observers readily recognize pairs of rivals as more similar (Kilduff et al., 2010).

Next, participants completed the measure of legacy concerns, three statements (all on 7-point scales, $-3 = \textit{strongly disagree}$ to $3 = \textit{strongly agree}$) that each began with “Games against the [opponent] . . .”: “. . . contribute a lot to the legacy of the [favorite team] organization.”; “. . . may be remembered by the [favorite team] fans for a long time.”; and “. . . have the potential to become part of the [favorite team] history.” Finally, as a manipulation check, participants rated the extent to which they felt a rivalry toward the target ($1 = \textit{very weak or not at all}$ to $7 = \textit{a great deal}$). Participants also reported whether their favorite NFL team and the target team were scheduled to play this year (*yes, no, or not sure*). To assess the degree of unwanted error in the manipulation, we also asked participants in the control condition whether the target team was their team’s biggest rival (*yes or no*). Finally, participants reported their age, gender, and whether they had any comments about the survey (free response).

Results and Discussion

Supporting the effectiveness of the accessibility-based selection of a nonrival, participants in the rivalry condition rated the target team as more of a rival (see Table 1 for descriptive and inferential statistics for all comparisons in this paragraph).⁴ We next looked at the three common qualities of rivalry: similarity, parity, and exposure. Contrary to expectations, there was not a significant difference in similarity ratings between the rivalry and nonrivalry conditions, $p = .308$. Though we designed the question to reduce motivated reasoning by asking participants to take an outside perspective, this result seems to reflect some resistance to acknowledging that similarity. At the same time, it implies that any effects of rivalry on legacy concerns are unlikely to be attributable to differences in participants’ perceptions of similarity. More consistent with expectations, participants in the rivalry condition did report greater competitive parity between their own team and the rival than between their own team and the nonrival, as well as a higher frequency of competition against the rival than against the nonrival. To test our first prediction, we examined the 2-item composite embeddedness measure ($r = .60$). Participants who considered matchups against rivals reported a stronger sense that those matchups were embedded in an ongoing narrative than did participants who considered matchups against nonrivals, $d = .59$.

Turning to our second prediction, we examined the 3-item composite legacy-concerns measure ($\alpha = .89$). As predicted, participants in the rival condition had significantly higher legacy concerns ($M = 1.76$, $SD = 1.06$) than did participants in the nonrival condition ($M = 0.54$, $SD = 1.45$), $t(200) = 6.88$, $p < .001$, $d = .96$. Finally, we investigated the extent to which legacy concerns were predicted by perceptions of similarity, parity, exposure, and embeddedness. We conducted a hierarchical linear regression in which we first entered the three antecedents, and then entered embeddedness in the second step. In the first step, parity and exposure were significant predictors of legacy concerns ($\beta_{\text{parity}} = .47$, $t = 7.95$, $p < .001$; $\beta_{\text{frequency}} = .42$, $t = 7.83$, $p < .001$; $\beta_{\text{similarity}} = -.05$, $t = -.92$, $p = .36$). Adding embeddedness in the next step significantly improved the model, R^2 change = $.098$, $F = 46.61$, $p < .001$. When all four variables were included, embeddedness was the best predictor (see Figure 2). Competitive parity and frequency of exposure were both significant predictors, and perceived similarity was not significant.

Although we conceptualize the four measured qualities of rivalry as aspects of the construct itself—in other words, not as causal consequences of rivalry—we used a mediation model to determine to what extent those four qualities account for the categorical rivalry manipulation. For illustration, Figure 2 depicts the results obtained using the sequential steps method of Baron and Kenny (1986). At each step that involved the four qualities, they were entered as simultaneous predictors. To estimate the indirect effects, we conducted a bootstrapping analysis with 5,000 estimates for the construction of a 95% bias-corrected confidence interval (CI) of the indirect effect of target-status on legacy concerns via embeddedness and the other three common qualities (using the SPSS macro provided by Hayes, 2013; Preacher, Rucker, & Hayes, 2007). The CI did not include zero for the embeddedness composite $[.309, .560]$, parity measure $[.166, .407]$, or exposure measure $[.085, .272]$, suggesting significant indirect contributions of each. It did include zero for similarity $[-.089, .074]$, indicating lack of evidence to conclude that similarity is a mediator.

Together, the results of Study 1 support three predictions from our proposed model. First, consistent with the free-response data, they support the assumption that one property of the social cognition of rivalry is a sense of current competitions being embedded in an ongoing competitive narrative. Second, Experiment 1 provides initial evidence for our hypothesis that thinking about a rival stretches the perceived implications of a competitive outcome into the future. We found that participants viewed the implications of a rivalry (vs. nonrivalry) matchup as more related to their long-term legacies. Experiment 1 also helped to show that the shared history that is integral to rivalry can have unique effects beyond a variety of other predictors that covary with rivalry but that are not unique to it. Specifically, the degree to which participants viewed their matchups as embedded in the competitive narrative explained the relationship between rivalry and legacy at least as well as their perceptions of similarity, parity, and exposure. To be clear, this does not contradict previous findings about the integral role these three qualities play in rivalry (Kilduff et al., 2010), but it does rule out the possibility that the effects of thinking about a rival can be fully accounted for by individuals’ own perceptions of these qualities.

The next two experiments were designed to conceptually replicate and then extend these results. Experiments 2a and 2b used a casual chain approach (Spencer, Zanna, & Fong, 2005) to examine legacy concerns as a possible mediating variable between rivalry and eagerness in goal pursuit. In the context of individuals’ personal rivalries, Experiment 2a sought to replicate the relationship between rival targets and legacy concerns, and then Experiment 2b manipulated legacy concerns directly to test the hypothesized relationship between legacy concerns and an eager orientation to goal pursuit.

⁴ Fifteen participants from the control condition reported that the target opponent was in fact their team’s biggest rival on the dichotomous question. If we exclude those participants, the analyses do not change in meaningful ways.

Table 1
Experimental Results and Correlations Between Reported Rivalry, Similarity, Parity, Frequency of Exposure, and Embeddedness in Experiment 1

	Rivalry condition <i>M (SD)</i>	Control condition <i>M (SD)</i>	<i>t</i>	1	2	3	4	5
1. Reported rivalry	5.93 (1.26)	4.16 (1.85)	7.99***	—	.22**	.51***	.61***	.65***
2. Similarity	4.21 (1.69)	3.97 (1.73)	1.02	—	—	.47***	.23**	.22**
3. Parity	5.95 (1.27)	5.29 (1.30)	3.65***	—	—	—	.31***	.51***
4. Exposure	5.17 (1.39)	3.99 (1.59)	5.63***	—	—	—	—	.51***
5. Embeddedness	5.64 (1.03)	4.93 (1.39)	4.20***	—	—	—	—	—

Note. All *t*-tests are between subjects with *df* = 200.
 ** *p* < .01. *** *p* < .001.

Experiment 2a: Rivalry and Legacy Concerns

Experiment 2a used first-person rivalries to test the relationship between rivalry and legacy concerns. This study again used an idiographic approach, but avoided relying on people's lay definitions of rivalry to manipulate it by asking them to name a competitor with whom they have a long history of competition and another competitor with whom they have a shorter history of competition. We hypothesized that people would project that longer past history into the future. Specifically, we predicted that participants would have stronger expectations of caring about current competitions in the future when those competitions were against someone with whom they already had a long history of competition (i.e., a rival).

Method

This experiment used a within-subjects design, asking participants to reflect on one competitor with whom they had a longer history and another competitor with whom they had a shorter history. Participants responded to an mTurk advertisement for "a set of short surveys about what you find most interesting and valuable in day-to-day life." The final valid sample included 38 participants (25 women, 13 men).

The focal competition-related questions were presented within a longer survey that was ostensibly broader in scope, asking about a variety of goals and relationships. Participants learned from the opening instructions that we were interested in learning about why different domains that they cared about were important to them. The listed domains were *art goals, family relationship goals, health goals, personal improvement goals, professional goals, social relationship goals, spiritual goals, and sports goals*. We describe the procedure in terms of three sets of questions: domain questions intended to elicit a competitive domain, relationship questions intended to elicit names of a rival and nonrival competitor (without referring to them as such), and evaluation questions intended to measure legacy concerns in relation to each competitor.

The aim of the first set of questions was to get participants to choose a domain in which they were particularly competitive. There were eight domain questions in this set, all taking the same form. For example, the first filler question was, "In which area (among those listed) do you get the most JOY?" Participants chose one domain from a dropdown menu that included the eight categories listed above, as well as an option for "none." The focal question was, "In which area (among those listed) are you most COMPETITIVE?" Participants who answered "none" were funneled past the remaining focal questions by the computer program.

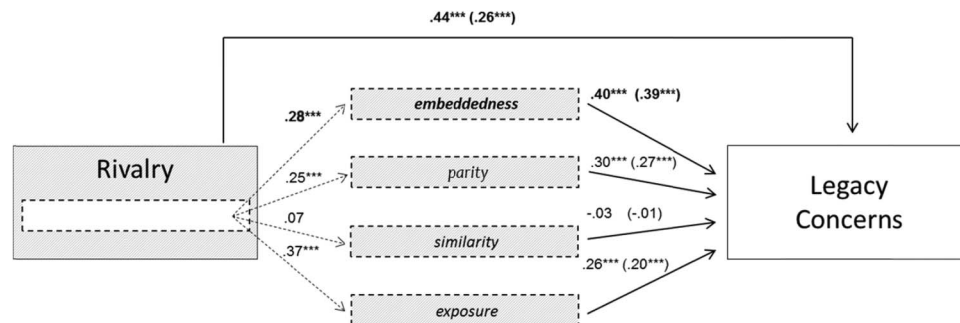


Figure 2. Mediation analysis (Experiment 1): Perceptions of embeddedness, more than other qualities of rivalry, including parity, similarity, and exposure, mediate the effect of thinking about a rival or nonrival target on legacy concerns. Embeddedness, parity, similarity, and exposure are considered qualities of the independent variable of rivalry (versus mere competition), not causal consequences. All four qualities were entered as simultaneous predictors. Numbers are standardized β s. Numbers in parentheses are standardized β s when dummy-coded condition and qualities are entered as simultaneous predictors. *** *p* < .001.

The aim of the second set of questions was to get participants to name an individual with whom they had a long history of competition and another individual with whom they had a shorter history of competition with the chosen domain. Instructions at the beginning of this set emphasized that participants should indicate if a specific relationship did not come to mind for any question by writing “n/a.” We wanted to decrease any pressure to make up a competitive relationship where none existed, thus avoiding unnecessary error variance in the subsequent measurement. There were six questions in this set with similar form. For example, one filler question in the set was, “You said that you get the most joy from [spiritual goals]. Who are two friends that you would most like to share this joy with?” The first focal question was, “You said that you are the most competitive in [professional goals]. Please name someone with whom you have a long history of competition in [professional goals].” The second focal question was, “Now, please list a second competitor with whom you have a relatively shorter history of competition in [professional goals].” Participants who did not list a specific individual for each of these two questions were excluded from analysis.

The aim of the third set of questions was to measure legacy concerns associated with the longer-term and shorter-term competitor. There were six questions in this set. For example, one filler question in the set was, “Please rate your agreement or disagreement with the following statement. When I have a joyful experience with [target], it brings us closer together.” Seven response options ranged from *strongly disagree* (coded as -3) to *strongly agree* (coded as 3). The two focal questions, the dependent measures, used the same scale and appeared in counterbalanced order: “I am likely to remember my current competitions with [long-term competitor] {short-term competitor} well into the future.” (Presentation order was counterbalanced, but did not have effects and is not discussed further.) Participants then reported their age and gender.

Results

Participants identified a diverse set of competitive domains (39% professional goals; 24% sports goals; 16% personal improvement goals; 3% to 8% all others, except spiritual goals, 0%). Consistent with the proposed model, participants indicated higher expectations of remembering their current competitions in the future when those were against competitors with whom one already shared a long history ($M = 1.71$) than when they were against competitors with whom one shared only a short history ($M = 1.00$), $SD_{diff} = 1.54$, $paired-t(37) = 2.84$, $p = .007$. Perhaps reflecting a process of projecting today’s shared history into the future, this result suggests that legacy concerns are stronger in rivalry contests than nonrivalry contests. Next, we examined whether those legacy concerns operate like other long-term (i.e., abstract) considerations in stimulating a more promotion-oriented regulatory focus toward goal pursuit.

Experiment 2b: Legacy Concerns Promote Eager Over Vigilant Strategies

Experiment 2b tested the hypothesis that activating legacy concerns would shift one’s regulatory orientation toward eager rather than vigilant strategies. We used a procedure that overlapped

substantially with that of Experiment 2a, first eliciting a domain of particular competitiveness. We manipulated legacy concerns in that domain by asking some participants, but not others, to consider whether they would remember those competitions into the future and whether the outcomes might become part of their personal history. We then measured preferences for an eager versus vigilant strategic approach, using a measure that we created based on an established regulatory fit induction procedure. The original procedure either induced an eager strategy of improvement by instructing participants to think about what positive aspects they would add to an experience or induced a vigilant strategy of improvement by instructing participants to think about what negative aspects they would eliminate from an experience (Higgins et al., 2003, Study 5). We turned this into a measure by asking participants to choose which of the two improvement strategies they preferred to pursue in their competitive domain.

Method

This experiment used a between-subjects design. Participants were randomly assigned to choose an improvement strategy when they had legacy concerns active in mind or when they did not. As in Experiment 2a, participants responded to an mTurk advertisement for “a set of short surveys about what you find most interesting and valuable in day-to-day life.” The final valid sample included 80 participants (42 women, 38 men).

This survey was presented in the same format as the survey used in Experiment 2a. Participants first answered the same eight domain questions, designed to elicit a choice of a competitive domain to be used later. From there, we introduced a simple order manipulation to activate legacy concerns for some participants. Participants randomly assigned to the legacy concerns condition next saw two questions meant to activate their concerns about future consequences of competition in the chosen domain. They indicated their level of agreement with two statements, “I am likely to remember my competitions in [professional goals] well into the future,” and “My current competitions in [professional goals] have the potential, in the long run, to become a part of my personal history.” These participants then responded to the dependent variable: “When it comes to [professional goals], are you more focused on . . .” *improving by adding to my strengths* (the eager strategy) or *improving by minimizing my weaknesses* (the vigilant strategy). Participants in the control condition completed the dependent measure first, followed by the legacy concerns questions. Participants then reported age and gender.

Results

Similar to Experiment 2a, participants were most likely to identify professional goals as the domain in which they were the most competitive (31%), followed by sports goals (28%). Personal improvement goals and health goals were the next most popular choices (14% each). All other goals were identified by 1% to 5% of participants.

As predicted, those participants who had just considered their legacy were more likely to choose an eager strategy for improvement (76.2%) than were participants who had not thought about this yet (52.6%), $\chi^2(1, N = 80) = 4.87$, $p = .027$, $\phi = .25$. This result suggests that the long-term future orientation of legacy

concern increases preferences for an eager goal-pursuit strategy relative to a vigilant goal-pursuit strategy. Viewed in conjunction with Experiment 2a, these results demonstrate a plausible link between rivalry and eagerness through legacy concerns: When we led participants to think about rivalry competitions, they were more concerned with how those competitions would reflect on them in the future (Experiment 2a), and when we led participants to be more concerned with how their competitions would reflect on them in the future, they exhibited a stronger preference for eager strategies of improvement (Experiment 2b).

The results presented to this point help to support each of the assumptions that we relied on to generate the hypothesis that rivalry would increase eager strategy selection. The Preliminary Analysis and Experiment 1 support the idea that rivalry contests involve a sense of embeddedness that may drive the effects of invoking rivalry. Experiments 1, 2a, and 2b further support the plausibility of a causal chain from rivalry to legacy concerns to eagerness. Experiments 3, 4, and 5 investigate the potential direct effect of rivalry on strategy selection.

Experiment 3: Awareness of Shared History Increases Interest in Offense Over Defense

The aim of Experiment 3 was to hold the target competitor constant and manipulate rivalry by changing the sense of embeddedness directly. From a practical standpoint, this is a difficult experimental manipulation to execute in most competitive settings. Interest and knowledge tend to correlate. Most people who are invested in a particular competition would know if there was a shared history with some competitor. This makes it hard to experimentally decrease the sense of shared history for that population (because the schema would come to mind automatically), or to experimentally increase the sense of shared history (because they would not be convinced). On the other hand, targeting people who are not invested would not be worthwhile because they would not care whether there was a shared history or not. An ideal sample for manipulating shared history would be a group who is highly invested in some competition but not very knowledgeable about it. The 2015 FIFA Women's World Cup Final between the U.S.A. and Japan provided such an opportunity.

In the United States, the Women's World Cup attracts a lot of attention, interest, and excitement, but media reports and polling data suggest that the typical fan is not particularly knowledgeable about the sport or its history. For example, 2014 polling about the Men's World Cup found that 86% of Americans reported knowing nothing or only a little bit about that soccer tournament, the world's most prestigious soccer event (Ipsos Poll Conducted for Reuters, 2014). However, despite the lack of domestic knowledge about the world's most popular sport, 26.7 million U.S. viewers watched the Women's World Cup final. It is, therefore, likely that many of the people who would watch the game were emotionally invested in the outcome, but without much knowledge about the team's history. Also convenient for our purposes, there was quite a good history between the two teams, making for a plausible rivalry. The U.S.A. had lost to Japan in the most recent World Cup Final, 4 years earlier, but had bounced back 1 year later and beat them in the gold medal game at the Olympics. The design of the study, then, was to remind half of the participants of U.S.A.'s shared history with Japan, but not to remind the other half of

participants. We did not expect this manipulation to work on the more knowledgeable soccer fans, but we did expect it to increase a sense of shared history, and thus a sense of rivalry, among the average fan.

A tenet of regulatory focus theory is that "those focused on promotion versus prevention should show a special interest in, and sensitivity to, information that is particularly relevant for advancement versus security" (Molden, Lee, & Higgins, 2008, p. 174). Consistent with this claim, studies have shown, for example, that people engage in more thorough processing of persuasive messages that fit their own chronic regulatory focus (Aaker & Lee, 2001; Evans & Petty, 2003). Combining this reasoning with the more general principle that accessible goal knowledge automatically attracts attention (e.g., Aarts, Dijksterhuis, & De Vries, 2001; Moskowitz, 2002), we hypothesized that soccer fans would show more interest in eager or vigilant soccer strategies depending on whether they were thinking of shared history.

Basic soccer strategy maps well onto the strategic inclinations of regulatory focus. Very generally, teams can have more players positioned toward the offensive side of the field, an eager strategy that prioritizes creating opportunities to score (i.e., pursuing scored goals and avoiding missed opportunities to score); or teams can have more players positioned toward the defensive side of the field, a cautious strategy that prioritizes securing one's side of the field against the other team's attack (i.e., avoiding surrendered goals and pursuing stifling defense; see Yen, Chao, & Lin, 2011 for a similar conceptualization in baseball). Here, we operationalized "special interest" in an eager versus vigilant strategy as the amount of time participants spent looking at a description of the standard offensive and defensive formations the United States Women's National Team had been using throughout the World Cup. We predicted that participants would look relatively longer at an offensive formation than a defensive formation when they had thought about shared history than when they had not. We also included an explicit judgment item, asking participants how offensively or defensively they would balance the U.S.A. strategy, to test whether the interest effect also manifested on a more deliberate strategic decision.

Method

This experiment used a 2 (condition: history vs. control) \times 2 (formation: offensive vs. defensive) \times 2 (order: offense first vs. defense first) mixed design with repeated measures on the second factor. We recruited self-reported U.S.A. soccer fans from mTurk in the hours leading up to the 2015 FIFA Women's World Cup Final between the U.S.A. and Japan, for a survey about "soccer knowledge and interest and how you think about and pursue your own everyday goals." We received one hundred forty-four valid responses (60 women, 84 men).

To ensure participants had the goal of wanting the U.S.A. to win the game, we first asked participants what outcome they hoped for in the championship game (*Japan win*, *U.S.A. win*, or *do not care*). To boost the cover story, we then asked participants whether they planned to watch the championship game on TV (*Definitely yes*, *maybe*, *probably not*, or *definitely not*). We then randomly assigned participants to one of two conditions: the history condition reminded participants of the previous history between the U.S.A. and Japan teams and suggested that the players were motivated by

that history; the control condition omitted the history information and suggested that the players were focusing only on the here and now.

In the history condition, we first asked participants whether they were aware that the U.S.A. had lost to Japan in the previous World Cup by going to penalty kicks after a tied 2–2 game, and then asked whether they were aware that the U.S.A. beat Japan 2–1 in the Gold Medal game in the Olympics the following year. Then, participants read that, “These players want to avenge their loss from the 2011 World Cup and prove that their 2012 Olympic gold medal was deserved,” and indicated whether they agreed with such a mindset. Finally, to encourage reflection and enhance the manipulation, we asked participants to write about their “own thoughts regarding this rivalry-focused mindset.”

In the control condition, we did not present the history information. To try to suppress reflection about the long-term implications of a potential World Cup championship, we indicated that, “Many of the players from the USA are talking about how they need to block out everything except this single game. Past games do not matter and they should not be thinking about the long-term implications of the win. All that matters is this one chance to win a World Cup,” and indicated their agreement with such a mindset. Participants then wrote about what their “own thoughts were regarding this focused mindset.”

From there, the history and control conditions converged again. As a manipulation check, participants rated the extent to which the rivalry aspect of the game was important (*not at all important, a little important, somewhat important, very important, or extremely important*; coded 0–4). We then presented the looking-time task. Participants read the intentionally ambiguous instruction, “The United States has used different formations throughout the World Cup. Please check them out.” Next, on separate pages of the survey, we presented a graphical representation and short explanation of the primary offensive formation (4–3–3) and primary defensive formation (4–4–2) that the U.S.A. had used throughout the World Cup (created using screenshots from Andrews, Das, Parshina-Kottas, Saget, & Ward, 2015). They were labeled at the top as “the offensive formation” and “the defensive formation,” respectively. The presentation order was randomized, and the computer recorded, without participants’ awareness, the number of seconds they spent examining each of the two pages (e.g., Visschers, Hess, & Siegrist, 2010). Next, participants reported how they wanted the U.S.A. to balance their strategy for the upcoming game toward an offensive or defensive style on a 201-point sliding scale, –100 to 100, with markers at –80 (*extremely defensive*), –40 (*somewhat defensive*), 0 (*completely balanced*), 40 (*somewhat offensive*), and 80 (*extremely offensive*). Participants then reported their age and gender and a variety of background questions intended to provide us some descriptive information about the sample’s soccer interest and knowledge. (Appendix B provides more descriptive information.) The knowledge screening question was included in this section, asking participants to rate their own knowledge about women’s soccer relative to the typical American sports fan (7-point scale, *much less, somewhat less, slightly less, average, slightly more, somewhat more, much more*, coded –3 to 3).

Results and Discussion

Supporting the effectiveness of the manipulation, participants who had been reminded of the shared history reported that rivalry was a more important aspect of the focal game ($M = 3.72$, $SD = .91$) than did participants who had not been reminded ($M = 3.14$, $SD = .99$), $t(141) = 3.66$, $p < .001$.⁵ Among the 68.1% of participants who reported having average or below knowledge about women’s soccer, the manipulation was effective, $t(95) = 3.44$, $p = .001$, but averaged across the remaining 31.9% who reported above-average knowledge, it was not effective at traditional levels of significance, $t(44) = 1.22$, $p = .23$.⁶

Because the timing data were right skewed, we used a natural log transformation to increase normality and capped a remaining outlier at 3 SDs above the mean. To examine whether participants spent more time looking at the offensive versus defensive formations, we ran a 2 (condition: history vs. control) \times 2 (formation: offensive vs. defensive) \times 2 (order: offense first vs. defense first) mixed analysis of variance (ANOVA) with repeated measures on the second factor. We conducted the focal analysis using data from the participants who were average or below average on soccer knowledge. Critically, there was a significant two-way interaction between formation type and condition, $F(1, 94) = 6.19$, $p = .015$ (see Figure 3).⁷ Paired- t tests showed that participants in the history condition spent significantly more time looking at the offensive formation than the defensive formation, $paired-t(45) = 3.75$, $p = .001$. In the control condition, there was not a significant difference between the offensive and defensive formation, $paired-t(51) = 0.58$, $p = .562$. There was also a significant main effect of formation type, such that participants spent significantly more time looking at the offensive formation compared with the defensive formation, $F(1, 94) = 8.31$, $p = .005$, and a significant three-way interaction between condition, formation type, and order $F(1, 94) = 6.49$, $p = .012$. The latter shows that the Condition \times Formation interaction was stronger when the defensive set was displayed first (see Figure B1 in Appendix B).

We next tested whether the effect also manifested in explicit strategy recommendations and found that recommendations on the 201-point scale were essentially identical in the history condition ($M = 31.61$, $SD = 39.30$) and control condition ($M = 31.37$, $SD = 29.75$), $t < 1$. More generally, looking time did not relate to recommendations, with a looking-preference score (calculated as the difference between offensive looking time and defensive looking time) showing no correlation with recommendations, $r(97) = -.13$, $p = .22$. In summary, we found that participants who were led to view a competitive matchup as more of a rivalry

⁵ Degrees of freedom differ across some secondary analyses because one participant did not provide a rivalry rating, one participant did not provide a strategy decision, and offensive looking time was not recorded for one participant (with above-average soccer knowledge).

⁶ Across the full sample, regressing rivalry importance on dummy-coded condition (history = 1, control = 0), knowledge, and their interaction, yields a significant positive effect of condition ($\beta = 0.72$, $p < .01$), knowledge ($\beta = 0.29$, $p < .05$), and a marginally significant interaction ($\beta = -0.49$, $p < .10$).

⁷ The interaction remains significant when also including participants who reported slightly more than average knowledge (knowledge ≤ 5), $F(1, 118) = 4.36$, $p = .039$, and becomes marginal when including the next level of knowledge. In the full sample, the critical two-way interaction is nonsignificant, $F(1, 139) = 2.54$, $p = .114$.

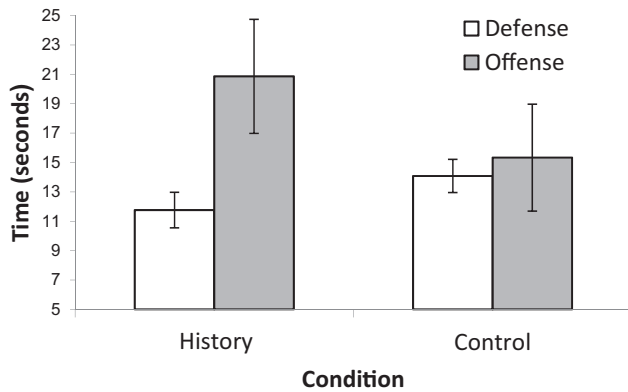


Figure 3. Time spent viewing the offensive and defensive soccer formations as a function of awareness condition (Experiment 3). *Note.* Statistical analyses were performed using log-transformed data, but results are presented here in raw seconds (capped at 3 *SDs* from the mean) for ease of interpretation. Error bars represent *SEs*.

(vs. those who were not) were relatively more interested in learning about an offensive formation than a defensive formation, but this relative interest did not affect their strategic recommendations. In hindsight, it is not surprising that interest did not correlate with preference in this case because the formation descriptions we used included positive and negative information. For example, the defensive formation “stifled . . . opponents,” but also “left the United States farther to go when it . . . shifted into attack” (Andrews et al., 2015). Increasing the interest in a given formation, in other words, could have led to increased or decreased evaluations of that formation depending on whether the pros or cons were more compelling.

In any event, Experiment 3 demonstrates that a sense of rivalry—even holding the target competitor constant—can affect individuals’ interest in eagerness-related strategic information relative to vigilance-related strategic information. Experiments 4 and 5 continue to investigate the direct effect of rivalry on strategic preferences, but move to a more naturalistic manipulation of rivalry, in which participants reflect on a rival or a nonrival competitor. The final two experiments also investigate behavioral responses that would follow from a more eager or vigilant strategic inclination to determine if rivalry does in fact influence consequential goal-related decisions.

Experiment 4: Reflecting on Rivals Reduces Practicing

We designed Experiment 4 to examine whether reflecting on rivals would promote a preference for eagerly initiating, rather than cautiously delaying, goal pursuit. Specifically, we assessed whether individuals presented with a performance opportunity would jump immediately to the testing phase or would accept an opportunity for additional practice. The vigilant and cautious approach to a novel, nondepleting task (like the one we used) would be to practice first, whereas the eager approach would be to jump right in to the performance. We predicted that participants who had just reflected on competitions against personal rivals, versus those who reflected on competitions against nonrival competitors, would be more likely to take the eager rather than cautious approach.

Experiment 4 also extends the investigation of the direct effect by moving from a population of fans vicariously involved in rivalries to the competitors themselves. For this study, we recruited recreational athletes and asked them to reflect on rival or nonrival competitors who they face in their chosen pursuits.

Method

Participants responded to an mTurk advertisement for recreational athletes to participate in a survey about social interaction and personal goals; 200 self-identified recreational athletes (50 women, 150 men) completed the study for pay.

Participants first answered two questions about their background in the chosen domain, including the number of teams they play on per year and the sports in which they are involved. Next, participants completed the reflection manipulation. Participants in the rival condition wrote the name of their “biggest rival” and participants in the nonrival condition listed four successful competitors, from whom we selected the fourth. All participants then reported on the number of years they had been competing against the target (free response), their desire to beat the target (7-point scale, 0 = *not at all* to 6 = *very badly*), and a short open reflection about why they wanted to beat the target. Participants then learned that there would be more questions about the target later, which we included so the target would remain active in mind when participants were confronted with the dependent measure.

To bolster the relevance and value of the upcoming performance opportunity, a visual search task, we asked participants to describe “how sharp vision, quick thinking, and good decision-making/problem-solving are important to success in sports.” Participants then encountered the critical decision:

You will only be able to complete the visual test once and then your score will be set.

You do have the option to complete a practice trial before you are tested. This may help familiarize you with the task, the correct way to respond, and generally get you ready for the test.

Would you like to practice first or get started right away?

The response options were “*Test me now!*” which we considered to be the eager option, and “*I will complete a practice trial first,*” which we considered to be the cautious option. To be consistent with the cover story, we then administered the practice task (as appropriate) and the test. Participants then completed additional background and experience questions (Appendix C for details and additional results).

Results and Discussion

A chi-square analysis revealed that participants were marginally more likely to skip the practice opportunity in the rival condition (66%) than in the nonrival condition (53%), $\chi^2(1, N = 200) = 3.43, p = .064, \phi = .13$. Notably, our control condition relies on the chance that people would be unlikely to list a major rival fourth on their list of competitors. To check this, at the end of the survey we asked participants in the nonrival condition if they considered their named target to be their biggest rival. Surprisingly, 34 (out of

94) participants said “yes,” perhaps reflecting a sample-bias of highly competitive participants with many rivals or a tendency for some participants to have named multiple individuals from the same rival team for the four-competitor prompt. Although we are reluctant to discard this many participants from analysis, it is worth noting that the predicted effect is stronger when omitting them: Skipping in the nonrival condition drops from 53% to 42% and the effect size increases, $\chi^2(1, N = 166) = 9.30, p = .002, \phi = .24$. These results support the eagerness prediction, showing that rivalry promotes eagerness even when a vigilant approach would be worthwhile. As elaborated in [Appendix C](#), skipping decisions could not be explained by other measured qualities of the relationship.

Experiment 4 provides initial evidence that merely thinking about a rival can directly impact the style of an individual’s goal pursuit through his or her strategy selection. We see this as a compelling demonstration of the regulatory shift because the strategy that rivalry promoted is one that would, if anything, be expected to hinder performance. Participants had the option to gain experience and get ready for the testing phase, and yet they were less likely to take that opportunity after thinking about rivals than other nonrival competitors. We designed Experiment 5 as a conceptual replication. Once again, we measured participants’ behavior on an individual task in which the eager approach and cautious approach would produce clearly different outcomes. Whereas Experiment 4 pitted these approaches against each other with an explicit decision, Experiment 5 relied on a task where the dominant style would emerge in a less controlled fashion.

Experiment 5: Reflecting on Rivals Increases Spontaneous Responding

We recruited serious fantasy-sports players to participate in the experiment. These players select teams of real professional athletes and get points based on the athletes’ real-life statistics. They often play in multiyear leagues, allowing rivalries to develop. To gain competitive advantage, some players, including those we recruited, pay for professional assistance. These players are highly invested and motivated to do well. It is important to recognize that although these players are focused on sports, their actual task is analytical decision-making, not athletic performance.

We chose to measure performance on a task that requires the same kind of careful, deliberate thinking that participants would need to put to use in their own competitive domain of fantasy sports. This made for a strong test of the regulatory-shift hypothesis because the eager style that is hypothesized to dominate in rivalry contexts would actually undermine performance on the task. Specifically, we administered the Cognitive Reflection Task (CRT; [Frederick, 2005](#)). The CRT consists of word problems with an intuitive, but wrong answer that people tend to give when they respond spontaneously. With a bit of reflection, most people can inhibit these wrong answers and identify the correct answer. Therefore, higher performance would be indicative of a more cautious approach to the task whereas lower performance would be indicative of a more eager approach. We, therefore, predicted that rivalry would hinder performance on this particular task.

Method

A professional fantasy-sports analyst advertised our study through his company’s weekly newsletter and on his professional social media accounts, asking for volunteers to complete an online study about “competition in fantasy sports.” For this special sample and recruiting opportunity, we wanted to field as many responses as possible. We let the study run for 3 days after the announcement went out and 107 fantasy-baseball players (2 women, 105 men) responded. Participants were entered into a gift-certificate lottery as compensation.

First, participants answered some domain-background questions. In the rival condition, participants wrote the name of their “biggest rival.” In the nonrival condition, participants wrote the names of four successful competitors, and we selected the fourth as the nonrival target. In both conditions, participants indicated the number of seasons in which they had competed against the rival, how badly they wanted to win against the rival (0 = *not at all* to 6 = *very badly*), and then described in a few sentences why they strive to beat the target. They learned that there would be more questions about the target later. To bolster the relevance and value of the upcoming task, participants wrote a few sentences describing “how statistical analysis, careful reasoning, and good decision-making/problem-solving are important to success in fantasy sports.” Participants then advanced to the CRT. Instructions indicated that the problems varied in difficulty and were potentially predictive of fantasy-sports performance. After the CRT, participants completed additional relationship-experience and domain-background questions (see [Appendix C](#)).

Results and Discussion

As predicted, participants in the rival condition made more errors ($M = 1.64, SD = 1.13$) than did participants in the nonrival condition ($M = 1.17, SD = 1.13$), $t(105) = 2.12, p = .036, d = .41$.⁸ These results support our hypothesis that reminders of rivals increase eagerness, in this case leading to spontaneous responding that hindered performance. This effect provides more direct evidence that rivalry increases eagerness, even for tasks in which a cautious approach would have improved performance. The effect was not explained by the mere length of the rivalry, the actor’s desire to beat the competitor, the actor’s disliking or respect for the actor, or the actor’s outside friendship with the actor (see [Appendix C](#)).

One alternative interpretation of these results is that rivalry hindered performance by causing participants to “choke,” either because they were experiencing too much pressure or arousal after thinking about rivals or because they were cognitively distracted by doing so ([Beilock, Kulp, Holt, & Carr, 2004](#); [Triplet, 1898](#); [Zajonc, 1965](#)). Theoretically, this is an unlikely explanation for our effects because the CRT was originally designed to require deliberation without being too difficult ([Frederick, 2005](#)) and choking only occurs on difficult tasks. However, we conducted a follow-up

⁸ We also conducted the analysis controlling for age because we had a 70-year age-range and age in adulthood is negatively associated with various cognitive processes relevant to CRT performance (e.g., [Mata, Schooler, & Rieskamp, 2007](#); [Salthouse, 1996, 2004](#); [Shamosh & Gray, 2008](#)). When controlling for age (itself a significant predictor, $F(1,100) = 4.95, p = .028$), the effect remains significant, $F(1, 100) = 5.27, p = .024$.

experiment with the CRT to assess this empirically ($n = 81$ after discarding 17 participants who did not complete the test or reported having previously seen the questions). Our manipulation in this follow-up relied on three common ingredients of high-pressure situations, namely monetary incentives, social incentives, and social evaluation (Beilock et al., 2004). In our low pressure group, participants completed the three-item CRT and then sealed their answers in an envelope to be evaluated later. In the high pressure group, participants learned that the experimenter would “grade” the test in front of them (social evaluation), and that they would receive \$5 for themselves (monetary incentive) and \$5 donated to the American Cancer Society (social incentive) if they received a perfect score. If poor performance is the “dominant” or distracted response to the CRT, the high-pressure group should do worse. As we expected, however, there was no evidence of decreased performance in the high-pressure group. In fact, participants in the high-pressure group showed a trend of performing better ($M = 1.55$ errors, $SD = 1.24$) than participants in the low-pressure group ($M = 2.00$ errors, $SD = 1.16$), $t(79) = -1.69$, $p = .096$, $d = 0.37$, casting further doubt on the alternative interpretation of these results.

In summary, Experiment 5 provided a second demonstration that thinking about rivals versus mere competitors encourages individuals to subsequently pursue their own personal goals in a more eager than cautious manner. In this experiment, competitive individuals who invest time and effort analyzing data and making careful decisions to outsmart their fellow competitors actually made more thoughtless mistakes on a reasoning task after having been reminded of their biggest rivals. This was not because they choked; it was simply because they were too eager to stop and check their work. Though rivalries may be able to improve performance relative to mere competition by increasing motivation and effort (Kilduff, 2014; Reinhard & Converse, 2015), they can also undermine performance by leading to suboptimal strategy selection.

General Discussion

When strangers or acquaintances work together to further the goals of one or both members of the dyad, we say they are cooperating. If that pattern of supportive behavior becomes regularized and the dyad develops a shared cooperative history, we would then say they have a relationship. Former acquaintances have become “significant others.” An emerging relational view of competition, to which the current work seeks to contribute, acknowledges a parallel form of relationship development in competitive settings. When strangers or acquaintances work against each other to further one’s own goals at the expense of the other, we say they are competing. If that pattern of competitive behavior becomes regularized and the dyad develops a shared competitive history, we would then say that they have a relationship. Former acquaintances have become rivals. Though this relational layer of competition has been relatively neglected by social science research, and by psychological research in particular, it appears to be of great importance to decision making, goal pursuit, and performance.

In the current work, we hypothesized that rivalry, compared with mere competition, affects how people think about the implications of their goals and, consequently, the strategies that they

choose for pursuing them. We derived these hypotheses from novel theorizing about the underlying social cognition of rivalry. Specifically, we suggested that rivalry is defined by a competitive relational schema that involves interconnected representations of the self, the target, the dyad, and their shared competitive history. We hypothesized that activating these relational schemas by reminding participants of rivalries (vs. nonrivalry competitions) would set in motion a chain of self-regulatory processes: The actor views imminent competitions as embedded in a broader competitive narrative, views the imminent outcome as relevant to her legacy, and shifts her regulatory orientation toward advancement and eagerness.

Results from seven studies support the main predictions from our proposed model. Examining a large set of open-ended responses, we found that football fans were more likely to appeal to a shared history to explain the importance of beating a rival (vs. nonrival) team. In Experiment 1, fans who were reflecting on their NFL rivalries viewed those contests as more embedded in a competitive narrative than did fans who reflected on other important games. Fans who were reflecting on rivalry contests were also more likely to view those contests as relevant to their organization’s long-term legacy. In Experiment 2a, we replicated this latter result in the context of interpersonal rivalries. Individuals expected to remember their current competitions more in the future if they were competitions against a rival rather than against a mere competitor. Experiment 2b completed the proposed causal chain by demonstrating that individuals who had legacy concerns active in mind, versus those who did not, were more likely to want to improve using eager rather than vigilant means. The first three studies therefore established that rivalry, compared with mere competition, involves an increased sense of embeddedness and legacy concerns, and that legacy concerns, in turn, promote a regulatory-shift toward eagerness.

Experiments 3–5 then demonstrated that rivalry can have a direct effect on participants’ own goal pursuit. In Experiment 3, when shared history was active in mind for soccer fans, making the contest seem like more of a rivalry, those fans paid more attention to eager, offensive strategies than to cautious, defensive strategies. Experiments 4 and 5 then examined strategic behaviors. In Experiment 4, recreational athletes who thought about a rival, versus those who thought about a nonrival, were more likely to skip the cautious opportunity to practice in favor of the eager opportunity to perform right away. Finally, in Experiment 5, we found that fantasy sports players who thought about a rival were more likely to make mistakes on a series of logic problems that required cautious, deliberate thinking (the very skill that those participants need in their own competitions).

More specifically, a number of findings supported the idea that the cognitive consequences of shared history are at least partially responsible for the effects of rivalry. The most direct evidence comes from Experiments 1 and 3. In Experiment 1, embeddedness was a strong predictor of legacy concerns even when other common but not essential qualities of rivalry—including perceived similarity, perceived competitive parity, and perceived exposure—were included as predictors. In Experiment 3, we held the target competitor constant and manipulated embeddedness directly by making participants aware of a shared history or not and found that it affected goal-directed attention. Additional, though weaker, support for this claim comes from a series of null moderation and

mediation results in Experiments 4 and 5, in which we also measured a variety of “simple” covariates of rivalry, including disliking and respect, none of which accounted for the regulatory-shift effects of rivalry.

One open question concerns the extent to which strategy-selection effects are mediated by legacy concerns. Experiment 2b demonstrated that legacy concerns can increase eagerness over vigilance, confirming that the indirect path is plausible. However, Experiments 3–5, which documented the effects of rivalry on strategy, did not assess legacy concerns. Given this empirical gap and the observation that relationship schemas can influence regulatory focus directly (Shah, 2003b, Study 3), one possibility is that the rivalry schema has some direct influence of its own, and that strategy selection and legacy concerns are relatively independent consequences of rivalry. It is also quite plausible that future research will identify additional mediating paths between rivalry and goal pursuit. Empirically, the effects of rivalry on embeddedness and on legacy concerns were quite strong, whereas the effects of rivalry on strategy were more modest. Thus, empirically and theoretically, there is a good chance that other processes are operating on strategy as well. For instance, rivalries might tend to be more aspirational, reflecting upward social comparisons, leading people to think about ideals rather than oughts (Garcia, Tor, & Schiff, 2013; Seta, 1982). Additionally, awareness of outside observers might play a role. If rivalries attract more outside attention than mere competitions—as at least every producer of sports commercials seems to believe—then rivalry could operate in part through audience effects on goal pursuit (Rhea, Landers, Alvar, & Arent, 2003). As rivalry research increases and becomes more integrated, it will be of interest to more closely examine the potential interrelations between these various outcomes and correlates of rivalry, including those that have already been identified, such as effort, goal construal, and strategy selection, and others that are likely to follow.

Splitting Versus Lumping: Strengths of the Social-Cognitive Approach to Rivalry

Rivalry is not a convenient experimental construct because of its complexity. Rivals naturally differ from nonrivals in many ways. On average, they are more similar to the self. On average, they are more familiar to the self. On average, they are more evenly matched with the self. And the list likely goes on. At the same time, whatever it is that people recognize and treat as rivalry seems to predict competitive behavior above and beyond what can be predicted by merely relying on these basic qualities as simultaneous predictors (Kilduff, 2014; Kilduff et al., 2010). One general possibility, of course, is that some useful basic predictors have been so far neglected and that adding them one by one would explain all of the variance of rivalry, eliminating the need for the more complex construct. Even if this were true, we would argue that this does not capture what rivalry really means. After all, rivalry does vary as a meaningful, holistic construct in the real world. Sometimes people are competing against rivals and sometimes they are competing against mere competitors. Sometimes people are thinking about rivals and sometimes they are not.

We suggest that our social-cognitive approach is a useful way to deal with this tension between splitting rivalry into its constituents and lumping it into one complex construct. The relational-

schema definition of rivalry accommodates the many representations, qualities, and properties that make up rivalry as a whole. This perspective, therefore, helps to advance and clarify conceptualizations of rivalry that were formerly hampered by the inclusion of consequences in the definition itself. Specifically, the relational schema incorporates the representations of self, target, dyad, and their shared competitive history with the accompanying qualities of each. At the same time, it highlights at least one aspect of rivalry that is a unique property of the full relational schema: the sense of embeddedness. In other words, individuals' impressions that rivalry competitions are embedded in an ongoing competitive narrative follows directly from the cognitive structure of relational schemas. When rivals come to mind, past competitions will come to mind, and this creates the sense of connection or embeddedness. Past research set the stage by showing that there was something more there than had been explained, and the current research points to embeddedness as at least part of what that is. Moreover, our studies show that this property of rivalry has some explanatory power. It is at least part of what causes people to become concerned with legacy in the context of rivalry, which in turn can affect their strategy selection.

More generally, our social-cognitive perspective fits well with the relational perspective on which it is based (Kilduff et al., 2010), and, we would argue, provides a more general framework that may be able to coherently organize the antecedents, consequences, and cognitive content of rivalry. For instance, the schema view helps to explain why the identified antecedents of similarity, parity, and exposure promote rivalry. Any variable that increases social-information processing about a competitor should increase the likelihood of a competitive relational schema (i.e., a rivalry) developing. For example, the initial theorizing about parity as an antecedent of rivalry was based on the observation that close contests are more likely to elicit counterfactual thoughts and strong emotional reactions (Kahneman & Miller, 1986; Medvec, Madey, & Gilovich, 1995; Medvec & Savitsky, 1997; see Kilduff et al., 2010, pp. 948–949). This increase in social-information processing about interactions with the target is precisely what gives rise to the formation of a developed relational schema (Baldwin, 1992). This generalization can be useful in at least two ways going forward. First, it may help to identify other factors that contribute to rivalry. For example, the distinctiveness of a competitor's tactics may increase the likelihood of rivalry formation because expectancy-violating behaviors are difficult to explain and therefore promote continued reflection (Hastie, 1984; Kahneman & Miller, 1986; Sanna & Turley, 1996). Second, it helps to explain why the amount of exposure on its own does not fully predict rivalry. Two teams or individuals could have had hundreds of past competitions, but if none of them were particularly notable, then rivalry might not develop at all. Conversely, rivalries can sometimes form quickly. One or two extremely notable matchups that prompt a lot of reflection may be enough to seed a full-blown rivalry.

On the consequences side, legacy concerns could potentially be a common mechanism for a number of apparently independent consequences of rivalry. We have demonstrated here that legacy concerns can potentially shift strategy selection, presumably because of the association between construal and regulatory focus (Förster & Troy Higgins, 2005; Joireman, Shaffer, Balliet, & Strathman, 2012; Pennington & Roese, 2003). Increased legacy

concerns may also play a role in diverse outcomes such as increasing effort on difficult tasks or taking pleasure in a rival's failure. When people think of their goals at a higher level of construal, or when they think of their legacies more specifically, they are more likely to accept immediate burdens in return for long-term gain (Fujita, Trope, Liberman, & Levin-Sagi, 2006; Zaval, Markowitz, & Weber, 2015). Perhaps this is why people are more willing to incur the short-term cost of effort investment in the presence of a rival. With regard to the second possibility, research has shown that fans take some pleasure when a rival fails, even against a neutral third party (Cikara, Botvinick, & Fiske, 2011). To the extent that individuals are concerned about maintaining their legacy relative to the rival, the rivals' failures may be viewed as an equally effective step toward improving their own relative status. If future work on rivalry converges on a common definition of the term, then such possibilities can be explored.

Implications for Competition

A resurgence of interest in the psychological aspects of competition has stimulated recent discussions of the relevant dimensions and determinants of competitive behavior. In particular, Garcia, Tor, and Schiff (2013) have explicated the interaction of situational and individual factors that trigger social comparison and competition. Their emphasis on Person \times Situation interactions in competition complements Murayama and Elliot's (2012) typology of trait competitiveness (the person's perceptions), environmental competitiveness (the competitiveness implied by the situation), and structural competition (how the actual competition is set up). Complementing and extending seminal work from the relational approach (Kilduff et al., 2010), our analysis highlights that competitiveness can also reside within a dyad. Pairing an individual (or group) with the right rival competitor might prompt a level of competition above and beyond what is explained by a combination of the individual's tendency to perceive a situation as competitive, the competitive nature of the situation, and the way in which the competitors and goals are structurally linked in the interaction. In short, relationships matter too. All of the structural features of a competition could remain the same—and even the subjective perception of those features could remain the same—and competitive behavior might nonetheless change according to one's relationship, or lack thereof, with the competitor. Furthermore, the effects of rivalries might even manifest outside of competition. Consistent with this idea, our results are examples of cases where merely thinking about a rival affected personal goal pursuit outside of competition.

The social-cognitive and relational perspectives provide the beginnings of a bridge between the psychological analysis of rivalry and analyses rooted in business and political science (e.g., Chen et al., 2007; Colaresi, Rasler, & Thompson, 2008). In these contexts, relational histories are likely to be a central issue in decisions about resource investment for constructive as well as retaliatory purposes (Giardini & Conte, 2015; Henrich et al., 2006; Porter, 1980). If psychological research on competition were to consider only isolated interactions between strangers, much of the generalizability to real conflict would be lost. In both business and politics, competitors quite often know each other. In some cases, they know each other all too well.

For example, researchers have estimated that two-thirds of interstate crises in the 20th century can be traced to a small handful of specific interstate rivalries (Colaresi & Thompson, 2002). Worldwide, most nations do not have problems with most other nations. Instead, a few entrenched rivals seem to be causing most of the geopolitical strife. Thus, even when scaled up to the level of nations, conflict is often embedded in important ways within ongoing narratives, and ignoring these narratives may seriously distort understanding of competitive interactions (Thompson, 1995). Understanding the goal-pursuit and decision making processes of the decision makers in these conflicts (and of the constituents they represent) is one way that psychological analysis can contribute to the understanding of larger group processes and, in turn, to potential conflict resolution.

Implications for Relationships, Motivation, and Performance

More generally, the current work may broaden the discussion about how significant others and personal goals are cognitively and behaviorally interconnected. The cognitive links between significant others and goal pursuit have been well explored, and the different ways that relationship partners affect the activation, selection, appraisal, and pursuit of goals continue to be elucidated (e.g., Fitzsimons, Finkel, & van Dellen, 2015; Fu & Markus, 2014; Przybylinski & Andersen, 2012; Shah, 2003a, 2003b; Savani, Morris, & Naidu, 2012; Vohs & Finkel, 2006). Typically, the significant others who have been considered are those who generally facilitate one's goals, either through their support, their expectations, or their example. The current work demonstrates that others who are significant for their repeated attempts to block one's goals are also important in this regard (see also Chartrand, Dalton, & Fitzsimons, 2007). The opposite causal direction, from goals to relationships, has recognized this balance, noting that goals can affect how supporters are viewed (Converse & Fishbach, 2012; Fitzsimons & Fishbach, 2010; Fitzsimons & Shah, 2008) as well as how competitors are viewed (Brown, 1995; Esses, Jackson, & Armstrong, 1998; Jackson, 1993; Sherif, 1966), but the examination of relationships' effects on goals has largely focused on supportive relationships.

Finally, from a practical standpoint, these results suggest that invoking rivals may indeed have motivational consequences, but how those translate to performance will depend critically on whether eagerness or vigilance is a more appropriate approach. Recent research has demonstrated that adding rivalry to competition increases intentions to pursue a personal goal and ramps up activity on an effort-based task (Kilduff, 2014; Reinhard & Converse, 2015), but the current work balances this perspective by showing that adding rivalry to competition also increases spontaneous responding and a propensity to skip preparation opportunities. To the extent that many coaches, leaders, and team members invoke rivalry to increase motivation with the intent of improving performance, this suggests that they should also consider the potential effects on style of goal pursuit. Those who want eager, promotion-oriented action should do just fine invoking rivalries, but those who desire a more cautious approach may want to draw attention to competitors with less history. Rivalry can increase

motivation and effort compared to mere competition, but it can also promote reckless behavior and thoughtless mistakes.

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Appendix A

Data Collection Plans and Procedures for Studies Using Amazon Mechanical Turk (Preliminary Analysis, Experiments 1–4)

Preliminary Analysis

Twenty-seven participants opened the study link but did not finish. Five participants did not respond to the question of interest or provided obvious nonsense responses.

Experiment 1

We aimed for 200 complete responses and received 202. Forty-one individuals opened the study link but did not finish: 21 in the control condition, 10 in the rival condition, and 10 before having been assigned to condition.

Experiment 2a

Aiming for a yield of 40 valid responses after excluding participants who were not competitive in any of the listed domains or who did not have both a longer-term and shorter-term competitor, we aimed for 60 completed surveys and received 63. Ten participants were redirected out of the survey because they reported not being competitive in any of the listed domains and 15 participants could not name both a longer-term and shorter-term competitor and thus had to be excluded. Twenty-seven individuals opened the study link but did not complete it.

Experiment 2b

We aimed to collect 80 valid responses (i.e., responses from people who indicated a competitive domain) and achieved that by

fielding 86 complete surveys. Thirty-two individuals opened the study link but did not complete it. Thirty-one of them dropped out before assignment to condition.

Experiment 3

We aimed to collect 200 complete responses, but wanted to ensure that the survey was closed before the official broadcast television coverage for the World Cup Final began (because this could provide knowledge that would interfere with our study). Therefore, we closed the study 20 min before television coverage began, with 164 complete responses. We excluded 13 participants who contradicted the eligibility requirement by reporting that U.S.A. soccer was “not at all important” to them ($n = 8$) or that they wanted the U.S.A. to lose the game ($n = 5$), and 7 participants who skipped the essay portion of the manipulation. Four individuals opened the study link but did not complete it.

Experiment 4

We aimed to collect 200 complete responses. Eighty-nine individuals opened the study link but did not complete it: 42 in the control condition, 29 in the rival condition, and 18 before being assigned to condition. One individual officially finished the survey, but provided nonsense responses throughout and was treated as an incomplete response.

Appendix B

Additional Measures and Analyses From Experiment 3

After providing their preference for the U.S.A.’s strategy for the upcoming game, all participants indicated whether, *before completing the study*, they had been aware that (a) U.S.A. lost to Japan in the last World Cup, or (b) that U.S.A. beat Japan the following year for the gold medal in the Olympics. Supporting the plausibility of our manipulation, among the low-knowledge portion of the sample (knowledge <5), only 44% of participants reported that they were aware of the previous World Cup outcome and only 27% were aware of the Olympics outcome.

Those numbers most likely overestimate the proportion who truly knew about those outcomes (because once they had heard it as part of the question, participants may have thought they knew it all along), but even if it is not an overestimate, everyone who had the knowledge did not necessarily have that knowledge accessible when they responded to the dependent measure. In contrast, every participant in the history condition would have had that knowledge in mind at the time of the dependent measure.

(Appendices continue)

Finally, to check the assumption of high general interest, participants reported whether they had been following the 2015 FIFA Women's World Cup (5-point scale: *not at all, a little, casually, pretty seriously, or very seriously*), $M = 3.04$, $SD = .86$; how important this particular team is relative to their interest in other sports teams (5-point scale: *not at all, slightly important, moderately important, important, or extremely important*), $M = 3.28$, $SD = 1.61$; and how much they are impacted by the team's outcomes (5-point scale: *not at all, slightly, moderately, strongly, or very strongly*), $M = 2.57$, $SD = 1.35$.

Additional Results: Looking-Time Data

We decomposed the significant three-way interaction between condition, formation type, and order (see Figure B1). Specifically, there was a significant interaction between condition and formation type when the defensive formation was displayed first, $F(1, 43) = 9.01$, $p = .004$, but no significant interaction when the offensive formation was displayed first $F(1, 51) = .003$, $p = .959$.

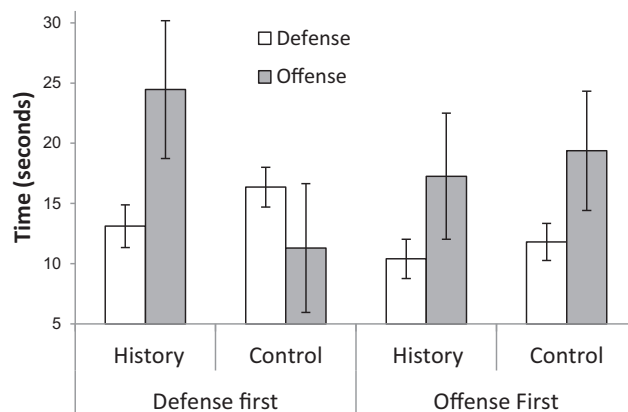


Figure B1. Time spent viewing the defensive and offensive soccer formations for the history and control conditions by order of seeing the defensive or offensive formation first. All statistical analyses were performed using log-transformed data, but results are presented here in raw seconds (capped at +3 SDs above the mean) for ease of interpretation. Error bars represent SEs.

Appendix C

Additional Measures From Experiments 4 and 5: Items and Results

Items

After the dependent measure, participants in Experiments 4 and 5 completed a number of additional measures that we included to explore alternative explanations of the predicted effects. Participants reported how much they disliked the target competitor (reverse-coded: 1 = *strongly dislike* to 5 = *strongly like*), and how much they respected the target competitor (1 = *strong disrespect* to 5 = *strong respect*). They indicated whether they were currently in a league with the target (*yes/no*). They described the closeness of their relationship with the target outside of the focal competitive domain (items paraphrased: 1 = *do not know each other at all*, 2 = *acquaintances*, 3 = *friends, not close*, 4 = *close friends*, or 5 = *among my best friends*). In Experiment 4, participants also indicated how many fantasy teams they typically manage in a given year (free-response; first item following dependent measure).

Additional Results From Experiment 4

To test if the number of sports that a recreational athlete plays moderated the effect of rivalry awareness on strategy selection, we conducted a binary logistic regression, regressing skipping decisions (0 = *practice*, 1 = *initiate*) on condition, number of sports, and their interaction. We found no evidence of moderation by number of sports, Wald's $\chi^2 < 1$, $p = .43$.

Table A1

Correlations Between Relationship Measures and Behavioral Outcomes in Experiments 4 and 5

Relationship-experience measure	Experiment 4		Experiment 5	
	N	Correlation with skipping practice	N	Correlation with CRT errors
1. Seasons against target	199	.03	91	.10
2. Want to beat target	198	.02	107	.13
3. Disliking	200	.08	106	-.11
4. Respect	200	.03	107	.03
5. Outside relationship	200	.03	106	.14

Note. Ns differ because participants did not respond to some questions; dfs were adjusted accordingly. In Experiment 4, all $ps > .25$. Skipping-practice measure coded as 0 = *practice*, 1 = *initiate*. In Experiment 5, all $ps > .15$.

To test if the effects of rivalry are stronger (or weaker) for participants who take their sports more seriously, we conducted a second binary logistic regression, regressing skipping decisions (0 = *practice*, 1 = *initiate*) on condition, level of seriousness, and their interaction. We again found no interaction, Wald's $\chi^2 < 1$, $p = .33$.

(Appendices continue)

We next examined the relationship questions (seasons against the target, desire to beat the target, disliking, respect, closeness of outside relationship) as possible mediators of the rivalry effect on strategy decisions. None correlated with skipping (Table A1).

Additional Results From Experiment 5

We explored whether the effects of rivalry reflection depended on a player's depth of involvement in fantasy sports. First, we regressed CRT errors on number of leagues, a dummy-coded condition variable, and their interaction, and found no evidence of

moderation, $\beta = .04, p = .83$. (The preceding analysis excluded 15 nonresponses and 1 nonsense response.) Next, we ran the same regression using seriousness as the potential moderator (excluding 1 nonresponse), and again found no evidence of moderation, $\beta = .64, p = .20$. We also examined whether the relationship questions predicted errors and found no significant correlations (Table A1).

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***Psychological Bulletin* Call for Papers: Replication and Reproducibility: Questions Asked and Answered via Research Synthesis**

The primary mission of *Psychological Bulletin* is to contribute a cohesive, authoritative, theory-based, and complete synthesis of scientific evidence in the field of psychology.

The editorial team is currently interested in the contribution of meta-analysis and systematic reviews to answering questions about the replication and reproducibility of psychological findings. This call is designed to encourage authors to consider the degree to which multi-study primary research papers, systematic replications efforts (e.g., Open Science Framework and Many Labs Replications), and meta-analysis can contribute to substantial psychological knowledge.

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We invite authors to submit single papers that address a clearly defined question related to replication and reproducibility of psychological findings using systematic-review or meta-analytic perspectives. Purely methodological papers, such as tests or criticisms of particular approaches, or commentaries on replication and reproducibility, are not appropriate for *Psychological Bulletin*. Primary-level research reports are also outside of the interest domain of *Psychological Bulletin*. Examples of possible manuscripts include but are not limited to meta-analyzing replication efforts, comparing evidence from different replication methods, synthesizing models of replication determinants, meta-analyzing predictors of questionable research practices and retraction, and comparing methods to gauge publication bias.

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