

FROM MONTAGUES TO CAPULETS: ANALYZING THE SYSTEMIC NATURE OF RIVALRY IN CAREER MOBILITY

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The paper proposes a systemic theory of rivalry that addresses a key limitation of past research by articulating how rivalry spreads across levels of analysis and between social domains. Shifting the perspective from what rivalry *does* to what it *prevents from doing*, we conceptualize rivalry as a system of relational constraints that extends beyond the level of direct rivals. Using qualitative and quantitative data on the mobility of jockeys in the Palio di Siena (1743–2011), the famous horse race in Siena, Italy, we document relational gaps in the mobility network—career moves that do not occur, even if expected on economic grounds. The analysis shows that rivalry constrains not only the moves to rivals but also to allies of rivals and rivals of allies. The effect becomes stronger over time, attesting that relational constraints persist in developed markets. Our fieldwork reveals that the constraining ability of rivalry is based on conformity to expectations of loyalty and adherence to group identities. The observed relational gaps are pertinent not only to scholarship on rivalry but also to mobility and network research.

Social structure is constituted of a nexus of collaborative and antagonistic relationships (Homans, 1950; Kilduff & Brass, 2010), yet scholarly interest remains concentrated on the former (Labianca & Brass, 2006: 597; Labianca, Brass, & Gray, 1998; Morrill, 1991). This has contributed to the flourishing of research on collaboration, but has had the unfortunate consequence of detracting attention from “rivalry”—enduring relationships of antagonism between actors. However, understanding rivalry is instrumental in achieving an accurate representation of social structure (Simmel, 1955) and of the functioning of markets and organizations (Kilduff, Elfenbein, & Staw, 2010).

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Scholarship on rivalry is relatively recent. Early studies highlighted the dyadic nature of interfirm competition (Chen, 1996; Chen, Su, & Tsai, 2007; Miller & Chen, 1994) without making a clear distinction between rivalry and competition. Kilduff et al. (2010) addressed this limitation, defining rivalry as a dyadic relationship of an actor with another actor, characterized by higher perceived stakes and psychological involvement. This line of research has contributed significantly to understanding the relationship between rivalry and competition, documenting the impact of rivalry on a range of behavioral outcomes (e.g., Kilduff et al., 2010; Kilduff & Galinsky, 2017; Kilduff, Gallo, Galinsky, & Reade, 2016).

However, the conceptualization of rivalry as a purely *dyadic* construct fails to do justice to its systemic features. As scholars have observed, relationships of antagonism are typically embedded in a broader network of collaborative ties (Labianca et al., 1998; Morrill, 1991). Dyadic rivalries between firms, marked by confrontation or legal disputes, spill over to other firms through strategic alliances (Sytych & Tatarynowicz, 2014) or through board interlocks (Hernandez, Sanders, & Tuschke, 2015). Furthermore, rivalries in one social domain

may affect outcomes and behaviors in another domain¹ (Kilduff et al., 2010: 963), such as through knowledge transfer (Agarwal, Ganco, & Ziedonis, 2009) or interpersonal competitive behavior (Grohsjean, Kober, & Zucchini, 2016). Such observations underlie the expectation that the sentiments and consequences of rivalry extend beyond the level of direct rivals. This expectation defines the objective of our paper: to advance a theory of rivalry that elaborates its systemic nature, as manifested in the spread of rivalry across levels of analysis and between social domains.

Shifting the perspective from what rivalry *does* (e.g., Kilduff et al., 2010) to what it *prevents from doing*, we conceptualize rivalry as a system of relational constraints that extends beyond direct rivals and beyond the domain in which the rivalry originated. We document the constraining capacity of rivalry in the labor market—a context where relational and institutional market constraints are attracting increasing scholarly attention (Chadwick, 2017; Mawdsley & Somaya, 2016: 101). By analyzing mobility networks (e.g., Shipilov, Godart, & Clement, 2017), we collect evidence on the systemic nature of rivalry in a three-stage process. The first stage is the identification of relational “gaps” in mobility networks—career moves that are expected to occur based on market considerations but remain unrealized. At the second stage, we show that these gaps extend beyond the focal dyad to adjacent network nodes through alliances. The third stage demonstrates that system-level factors, such as the degree of professionalization of the labor market, reinforce the constraining capacity of rivalry.

Our key contribution to rivalry scholarship (Kilduff et al., 2010; Kilduff et al., 2016) is in articulating and empirically testing the extended relational system that underlies rivalry. Integrating the interdependence between rivalry and alliance (Simmel, 1955; Sytch & Tatarynowicz, 2014), the paper shifts attention from the dyad to the system level, linking research streams on rivalry, networks, and career mobility. The identification of relational gaps in patterns of (non-)mobility contributes to our understanding of network dynamics (e.g., Ahuja, Soda, & Zaheer, 2012) by articulating a distinct type

of network constraint, based on rivalry (see Marsden, 1983), as well as to mobility research (e.g., Mawdsley & Somaya, 2016), by documenting a source of friction in labor markets that is irreducible to either institutional or relational factors.

The research context is the Palio di Siena, the world-famous horse race in Siena, Italy. The Palio is an appropriate context in which to study rivalry because of the complex system of formal alliances and rivalries between city neighborhoods that has existed for centuries (Dundes & Falassi, 1975). We reconstruct the networks of alliances and rivalries and the careers of all jockeys who have raced between 1743 and 2011. Combining extensive fieldwork and longitudinal quantitative data, our analysis attests to the systemic nature of rivalry, extending to network nodes adjacent to the rival dyads and affecting the trajectories of career mobility in developed labor markets.

THEORETICAL BACKGROUND

Scholarly interest in rivalry originated in research on market competition. Early work approached interfirm rivalry as a structural property of markets (e.g., Porter, 1980; Scherer & Ross, 1990), with competing firms depicted as anonymous actors (Porac, Thomas, Wilson, Paton, & Kanfer, 1995). Research has since shifted the level of analysis onto competitive actions between specific firms (Baum & Korn, 1999; Miller & Chen, 1994). Highlighting the dyadic nature of competition, these studies conclude that the intensity of competition depends on the degree of market overlap, resource similarity, and firm size. Subsequent work has posited that rivalry is more than mere competition for overlapping resources. Thus, controlling for objective factors of competition, Chen et al. (2007) demonstrated that the perceived significance of specific competitors increases the likelihood of competitive attacks and responses. Along similar lines, Livengood and Reger (2010) showed that an attack by a rival on a core identity dimension markedly raises the psychological stakes, making the response of the target more likely and more intense.

Further advancing the psychological approach, Kilduff and colleagues (2010) differentiated rivalry from competition in both theoretical and empirical terms. They conceptualized rivalry as a dyadic, personal relationship between actors, characterized by the heightened psychological stakes of competition. This line of work contributed markedly to our understanding of the structural antecedents of

¹ A “domain” designates a field of action dominated by a specific logic, such as market exchange, power, or social interaction (Bourdieu, 1983). We use the concept in a general sense to differentiate between relational domains (i.e., a social network) and economic domains (i.e., labor market).

rivalry (i.e., market similarity, geographic proximity, and history of interactions) and its behavioral outcomes, such as task performance, motivation, unethical behavior, and risk-taking (Kilduff et al., 2010; Kilduff & Galinsky, 2017; Kilduff et al., 2016; To, Kilduff, Ordoñez, & Schweitzer, 2018).

The dyadic focus in this literature facilitates the differentiation of rivalry from competition but also constrains the analytical scope of rivalry. Most importantly, it gives little attention to the observation that rivalry is embedded in networks of collaborative and antagonistic ties (Hernandez et al., 2015; Sytch & Tatarynowicz, 2014) that coexist and influence each other (Simmel, 1955). From this perspective, a comprehensive approach to rivalry should account for its *systemic* nature—how it affects relationships beyond the dyad and how it spreads across domains. Even if it is recognized that rivalry can spread from individuals to groups or from groups to individuals (Kilduff et al., 2010: 963), a theoretical framework of this process is still lacking.

A useful guideline in developing this framework can be found in political science, where rivalry research has deep roots (e.g., Diehl & Goertz, 2000: 132). Rivalry is defined as “a long-term hate-affair” (Maoz & Mor, 2002: 109)—a relationship characterized by considerable risk of conflict, where each side views the other as posing a significant threat to its interests. In this logic, rivalry constitutes an entity that transcends the intentions of the focal actors involved. Characterized by continuity and high intensity (Maoz & Mor, 2002), it tends to trigger automatic responses from the other side that are independent from individual attitudes.

Most pertinent to our framework is the observation that rivalry is not an isolated occurrence, but a part of a social system, in which rivals are connected *with* and *through* alliances (Diehl & Goertz, 2000: 20). Political scientists attribute a key role to the interdependence between alliances and rivalries in explaining the systemic consequences of rivalry. For instance, a rivalry between two states may diffuse to other states through alliances, creating relational gaps that reduce exchanges between factions (Diehl & Goertz, 2000: 20). These observations are the building blocks for an approach to rivalry that articulates its systemic features—how it becomes embedded in a broader network and how it spreads across domains.

A Systemic Approach to Rivalry

Starting with the observation that rivalry is not reducible to a dyadic relationship, we conceptualize

it as a relational system encompassing collaborative and antagonistic relationships surrounding the focal dyad. A basic assumption of our approach is that, to understand the systemic implications of rivalry, we need to consider the social structure and context where rivalry occurs. It is a core observation in sociological research that negative ties extend beyond the focal dyad (Gould, 2003). Because of its ability to spill over into adjacent relationships, rivalry can create social realities for other actors in the network (Simmel, 1955). From this perspective, rivalry constitutes a configuration of constraints that an actor encounters, makes sense of, and accommodates in her activity. These constraints affect the “boundary work” of actors (Gieryn, 1983)—the process of maintenance of social distance that serves to organize the network into a set of cliques.

Consider Shakespeare’s play *Romeo and Juliet* as an illustration (Shakespeare, 1623/2008). The story of forbidden love between two adolescents from the feuding families of the Montagues and Capulets in Verona is an indelible part of the legacy of Western civilization. Our interest lies not in the tribulations of love or the tragic denouement, but in how Shakespeare rendered the nature and consequences of the rivalry. The latter is portrayed as an antagonistic relationship between two families embedded in a social system, with consequences exceeding the intentions of the protagonists. The rivalry between the Montagues and Capulets organizes social interaction by constraining exchanges between the residents of Verona, affecting whom they are entitled to talk to, whom they should avoid, and the conditions under which they may seek contact with the rival. Furthermore, it spills over between domains, affecting opportunities for economic exchange or even for romantic involvement.

As intuited by Shakespeare, the capacity of rivalry to organize social relations is based on the set of normative expectations associated with it. Rivalry is a source of behavioral rules that govern patterns of association and disassociation in social networks (Brubaker & Cooper, 2000). Essential in this process is what Labianca and Brass (2006: 597) defined as a “negative person schema”—a set of antagonistic feelings and behavioral intentions toward another person. As Wiseman and Duck (1995) demonstrated, the development of the negative schema and diffusion of hostility is a much faster process than the spread of positive sentiments. It tends to lead to the categorization of other people into coarse-grained categories, such as a “rival” or an “enemy.” These categories affect task-related (job performance,

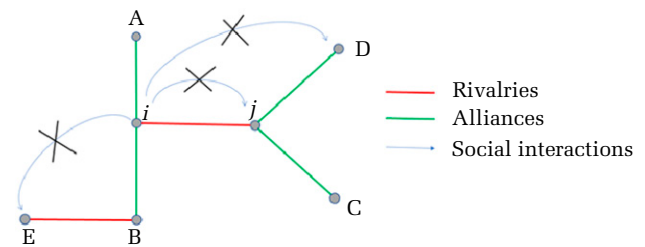
promotion) and socioemotional outcomes (attachment, turnover) by constraining both the creation and reproduction of social relations (Labianca & Brass, 2006). Rivalry is often associated with negative judgments that are embedded within an ongoing competitive narrative (Converse & Reinhard, 2016), which affect patterns of association and dissociation by strengthening reciprocal antagonisms and social divisions (Coser, 1956). Simple behavioral mechanisms propel this process, such as conformity to normative expectations and adherence to group identities (Gould, 2003).

As a system of relational constraints, rivalry is constituted through interactions and social exchanges (White, 1992). A fundamental function of this system is controlling the forms of social interaction that support alternative categories or identities (i.e., a neighbor or customer) to those involved in the rivalry (friend or foe). Rivalry structures interaction in ways that reduce the possibilities for actors to assume alternative grounds for action (White, 1992). This is manifested in the emergence of relational gaps, by reinforcing interaction with members of one's own camp and reducing or prohibiting interactions with members of the rival camp (Simmel, 1955). As Padgett and Ansell (1993) demonstrated in respect of Renaissance Florence, the rivalry between the families of the oligarchs (old elites) and the *popolani* (newly rich men) structured the marital and business networks in the city, creating a relational gap between the rival factions that only the head of the Medici family was capable of bridging. Rivalry spread beyond the families, affecting even those of little means, who had to choose which faction to side with or which one to turn to for favors. It also spread between domains—from political confrontation to economic exchange and marital networks.

Accordingly, we posit that the systemic nature of rivalry is manifested in its tendency to spread within and across domains. Rivalry is defined not only by the mutual antagonism, but also by the relational gaps it creates by constraining interactions between rivals and between their allies within and across domains. Rivalry operates as a discriminating mechanism that limits physical and social access (Marsden, 1983), maintained by conformity with the constraints in the boundary work of actors.

As an illustration, consider a case in which i and j , employed by the same company, see each other as rivals (Figure 1). That their mutual antagonism leads to the avoidance of social interaction is an example of a relational gap with consequences limited to the

FIGURE 1
A Systemic Approach to Rivalry



dyad. This is not the case when the gap extends to their friends in the workplace (A, B, C, and D) who become reluctant to interact with the rival of their friend. This situation still affects only one type of exchange—social interaction. The consequences would be more dramatic if enmity were to spill over into other domains, such as the circulation of information or opportunities for rotation of team members. Domains governed by professional conventions or a logic of market exchange should be resistant to relational constraints. Accordingly, the strongest test of the systemic nature of rivalry would be the identification of relational gaps beyond the dyad in domains governed by professional and market logics. In pursuit of such evidence, we turn to the city of Siena, where the rivalries between the city's neighborhoods have conditioned exchanges between them for centuries (Dundes & Falassi, 1975).

The Palio di Siena

The Palio di Siena is arguably the most famous horse race in the world. It originated in the 13th century, but the first Palio in the current format took place in 1656. The race is held twice a year, on July 2 and August 16. The Palio takes its name from the Italian word for banner, presented as a prize in tournaments organized in the Middle Ages. The race features 10 of the 17 city neighborhoods (*contrade*), selected by lot. It runs clockwise three times around the Piazza del Campo, Siena's main square. Nine horses are lined up at the start line in an order decided by lot, while the tenth horse waits outside. The race begins when the tenth horse enters the race; the first horse to cross the finish line is the winner. Victory brings about ubiquitous recognition in the city (Dundes & Falassi, 1975).

The complex nature and multiple cultural layers of the Palio have received ample attention by anthropologists (e.g., Silverman, 1979). There is wide agreement that the Palio is too serious, multidimensional,

and identity creating to be compared to sports (Drechsler, 2006: 118). The Palio constitutes the public arena in which the identity of each *contrada* is affirmed. The *contrada* is a basic unit of the Sienese social structure. It resembles a city state, with fixed territorial boundaries, a seat of government, and its own church, museum, hymn, motto, and patron saint. However, it is also an organization that owns real estate, collects membership dues, provides a range of services, and maintains a sense of accountability to members and a distinct identity by staging public events.²

The Palio di Siena is defined by a system of formally declared alliances and rivalries between *contrade*, which has been well documented over centuries (Dundes & Falassi, 1975). Both rivalries and alliances require a vote to be established and terminated. An alliance stipulates reciprocal obligations and the terms of mutual engagement. It is usually based on preexisting amiable relationships, implying preferential treatment in Palio-related pacts. A perceived violation of the terms of an alliance may lead to its termination. Rivalries involve, for the most part, neighboring *contrade*. Reasons for the formal declaration of rivalries include the betrayal of secret agreements, insults, or skirmishes between members. The *contrada* assembly votes a declaration of rivalry and notifies the other party, which can reciprocate the declaration.

Rivalries evoke strong emotions, featuring teasing of rival *contrade* members, petty border disputes, or provocative gestures against the rival's symbols. Defeating the rival is as important as winning the Palio; secret pacts, bribes of other jockeys, and constant surveillance of their own jockey are key parts of the race. Neutral *contrade* can be lured into a pact by cash or by exchange of services. Rivalries tend to be long lasting, but can be terminated following reconciliation efforts and a formal vote by both parties.

The Palio constitutes a "field"—a social space structured by logics of rivalry and cooperation, where actors share the same values (e.g., Bourdieu, 1983). It can also be defined as a "network domain" (White, 1992)—an interface between patterns of

relations and domain-specific stories, symbols, and expectations. Even if actors are not aware of the origin of a rivalry, many aspects of the social structure remind them of its intensity. Rivalry is encoded in cultural artifacts, in rhetoric and practices that favor certain behaviors and discredit others. It is given flesh by historical narratives (Converse & Reinhard, 2016) that permeate conversations in Siena. Memories of victories or bitter defeats, stories of cheating jockeys, or the ruses used to prevent one's rival from winning make up the experience of a Palio and convey rivalry as a topic of conversation for the citizens of Siena beyond the days of the race (Dundes & Falassi, 1975). These stories weave into daily discussions and activities, reinforcing the experience of rivalry by focusing effort before the race and the attention of spectators during the race. A vivid account of this experience is offered by Simonetta Losi, a member of Onda (Wave):

In a city and a region that is still prone to dualism and adverse factions, "they" represent the negative side of the coin, the dark pole, while we are the light, the positive face of the coin. Every time I see the Torre leading the race . . . I suffer. Even if I know it will not last long. (Filiani & Zaffaroni, 2002: 77)

Relations of rivalry and cooperation between neighborhoods structure opportunities for socializing. The *contrade* are the center of social life for their members: the Senese do not pick their *contrada*, they are born into it (Dundes & Falassi, 1975). The sense of belonging of members is cultivated by means of socialization practices since the day of birth. For example, on the days of the Palio, schoolchildren are separated, dressed up in the colors of their *contrada*, and brought to the race to support their jockey with songs and chants. It is also not unusual for husbands and wives to separate on the day of the Palio, returning to their *contrada* of origin. These practices maintain the salience of rivalry as a system of relational constraints.

We were able to witness social gatherings and conversations during our fieldwork in Siena. We attended six Palios and visited Siena eight times between 2013 and 2018, interviewing former captains, lieutenants, jockeys, experts, and *contrada* members.³ These interviews shed light on the social mechanism underlying rivalry. One example is an overheard complaint by a teenage girl, unable to see her boyfriend during the days of the Palio, as he

² The 17 *contrade* of Siena (and the animals or symbols with which they are associated) are as follows: Aquila (Eagle), Bruco (Caterpillar), Chiocciola (Snail), Civetta (Little Owl), Drago (Dragon), Giraffa (Giraffe), Istrice (Crested Porcupine), Leocorno (Unicorn), Lupa (She-Wolf), Nicchio (Seashell), Oca (Goose), Onda (Wave), Pantera (Panther), Selva (Forest), Tartuca (Tortoise), Torre (Tower), and Valdimontone (Valley of the Ram).

³ Details on data sources, informants, and interview coding is provided in the Methods section.

hailed from a rival *contrada*. Another example was provided by members of Selva, who shared the discomfort they experienced in the weeks before the Palio when visiting personal friends in the *contrade* of Chiocciola and Tartuca, both allied with Selva, but fierce rivals between them.

That rivalry constrains social interactions between neighborhood members and that it spills over through alliances is an accepted fact in Siena. What is more surprising to residents of Siena is that these constraints extend to domains governed by professional or exchange logics, such as the labor market for jockeys. In Siena, jockeys are mercenaries who provide their services to a *contrada* for a specific Palio. Jockeys cannot be members of any *contrada*—that is, while they might race for your *contrada* today, they may go to another one tomorrow (Dundes & Falassi, 1975). Upon completion of test races, the captains select 10 horses, assigned by lot to the *contrade* that take part in the race. Taking stock of the assigned horse, each captain selects a jockey. The jockeys are crucial to their hopes of winning; captains work year round to develop ties with them. However, captains can never be sure of the loyalty of the jockeys, whose careers reflect the patterns of labor markets where talent is scarce and competition for it is intense (e.g., Chadwick, 2017; Coff, 1997).

At the Palio, the stakes are high and winning is highly coveted, which is reflected in the aggressive contest for hiring the most talented jockeys or those capable of neutralizing rivals. The competition for talent is generally expected to undermine relational constraints in hiring (Arrow, 1973; Becker, 1971). Identifying gaps in hiring in a competitive market for talent would provide compelling evidence for the constraining function of rivalry. We expect this function to be reflected in three related patterns of relational gaps between rivals that spread beyond the rivalry dyad and that are reinforced in developed markets, where talent can move at will (Coff, 1997).

HYPOTHESES

Rivalry and Career Mobility

Our expectation is that rivalry constrains the ability of actors to freely choose their professional destination, privileging certain trajectories and discriminating against others. In labor markets, mobility between competitors is not a rare occurrence, even in the case of significant market overlap between past and current employers (e.g., Agarwal

et al., 2009; Campbell, Ganco, Franco, & Agarwal, 2012; Wezel, Cattani, & Pennings, 2006). The competition for talent encourages mobility (Gardner, 2005). In competitive markets, employees are expected to move to an employer that offers the best conditions, irrespective of their relationship with the current employer (Becker, 1971).

However, there are also reasons to expect that these relationships matter. In career mobility, personal and organizational networks intersect (Shipilov et al., 2017). This can be manifested as individuals assuming the relationships of their employers or as past affiliations continuing to exert influence over mobility choices after employment termination (Godart, Shipilov, & Claes, 2013). Consequently, actors may be reluctant to move to a rival even if an opportunity presents itself. As rivalry imposes binary categories imbued with negative sentiment toward the rival (Wiseman & Duck, 1995), affiliation with one side may make future affiliation with the other side less desirable. Such a move can be perceived as a breach of loyalty, violating expectations of compliance with group identities and adherence to categorical boundaries (Brubaker & Cooper, 2000; Coser, 1956). Actors may refrain from moving to a rival in anticipation of retaliation by the past employer (Marx, 2011).

This is reinforced by our fieldwork. When jockeys are affiliated with a *contrada*, they are expected to abide by a set of rules that govern their behavior. One of the key rules is that of loyalty or purity of affiliation. As Jockey #1 told us, “Loyalty, this is a good currency to have in Siena,” as it increases the chances of repeat employment in the Palio.⁴ One way in which loyalty is manifested is by maintaining distance from one’s rival by avoiding verbal or non-verbal communication (as a source of corrupting influence). The collection by employers of the mobile phones of the jockeys for the duration of the Palio and the constant monitoring of their whereabouts embodies this form of control. The expectation is not only that the jockey will not render any service to the rival during employment, but that he would also refrain from joining the rival after the end of

⁴ We masked the names of all our interviewees (e.g., “Jockey #1”). This was necessary because of the sensitive nature of some of their comments. Considering that many of the interviewees are still active in their roles, we preferred not to take the risk of potentially hurting their relationships with employers. We compiled a list with the names of all interviewees and submitted it to the editor in charge.

employment. No formal rule prevents such moves, but the informal expectation is explicit to jockeys.

Our fieldwork attests that moving to a rival is perceived as a normative violation. If the end of a contract allows the jockey to move to another employer, the decision to move to a rival is perceived as “disturbing, especially if there was a close relationship” (Expert #5, Palio expert). The jockeys are mindful of the ubiquity of this perception. In the words of Jockey #2, “When you share a dream with someone, you cannot share it with his rival. If two boxers are on the ring, either you take one side or the other, you cannot side with both.” The constraining power of rivalry was confirmed by a former jockey, Jockey #3: “If you are close to a contrada, and they have a rival, then of course it is a constraint [on where you can go].” Jockey #10 reasoned similarly: “I have no constraints. The only place where I cannot go is Valdimontone, because I was Nicchio’s jockey until a few Palios ago.”

The constraints are also recognized by employers. For Captain #5 (Pantera’s captain): “My contrada can hire anybody except for Giovanni Atzeni, who competed for Aquila [Pantera’s rival] last year.” Likewise, Captain #4, from Leocorno, stated: “We can hire anyone, except for the jockey that is close to our rival and that won the Palio with them in 2009, Andrea Mari.” Lieutenant #1, a former lieutenant of Giraffa, emphasized that, “when a jockey maintains a relationship with a contrada, there is an expectation for him not to go to its rival.”

Accordingly, we anticipate that the normative expectation of loyalty will constrain the mobility of jockeys by stigmatizing moves to rivals. The symbolic value of the move to a rival is considerable, as it ascertains the permeability of a categorical boundary in the labor market, which is maintained by rivalry.

Hypothesis 1. The existence of a rivalry between two organizations reduces the likelihood of a career move between them.

Rivalry, Alliances, and Career Mobility

We conceptualize rivalry not as an isolated occurrence, but as a system of constraints. As political scientists recognize, this system comprises the network of cooperative and antagonistic relations (Diehl & Goertz, 2000; Maoz & Mor, 2002). Dyadic rivalry spreads through alliances, triggering the formation of coalitions (Gould, 2003). Similarly, management scholars observe that rivalry is not confined to firms, but often extends to groups, connected by alliances (Gomes-Casseres, 1994).

We argue that the interdependence between alliances and rivalries reinforces constraints on mobility. Expectations of compliance to group identities extend to the coalitions around the focal dyad. Relational gaps expand beyond the dyad, reducing the probability of joining the ally of a rival or the rival of an ally. This observation is consistent with the concept of “balanced triads” (Heider, 1946) and the expectation of avoiding affiliation with enemies of one’s friends or friends of one’s enemies, to avoid experiencing split loyalties. Similarly, Sytch and Tatarynowicz (2014: 606) argued that “the formation of balanced dyads and the pull away from unbalanced dyads can pull the emergence of a segregated global network with two distinct segments: a collaborative and a conflictual one.” Our informants confirmed that the stigmatization of a move to a rival extends beyond the dyadic relationships, encompassing the rivals of allies and allies of rivals. Songs, pamphlets, nicknames, and public events are staged to reinforce bonding between allies and separation from the rival camp (Luchini, 2010). Jockeys are reluctant to cross fault lines because this can damage the relationships within their own camp and trigger collective retaliation (Luchini, 2010). Palio expert #1 gave the example of how Bruco lent its jockey to Tartuca, the rival of its ally Chiocciola. As a result of the perceived treachery, a brawl occurred in the square after the first trial, and the allied contrade put a formal end to their alliance. Another example was provided by Lieutenant #1, who described the complex decision confronting a jockey who has a long-term contract with Bruco but can race for another contrada when Bruco is not running or when it draws a weak horse:

Which are the two/three contrade where he has good relationships? Torre, Selva, Civetta, Montone [Valdimontone], and Tartuca. With Torre and Civetta, he has strong personal ties, so he cannot go to their rival, even if Bruco may have good relationships with Oca and Leocorno. So, he can’t go to Oca and Leocorno. And let’s say Montone is there, or Tartuca is there. These are currently rivals of contrade with an alliance with Bruco. So, the question is: what’s going to happen? If he conforms to the norms in Siena, he has only one or two places where he can go.

As these observations attest, rivalry is a system of constraints on the mobility of jockeys. The choices of jockeys are path dependent, as they need to pick a camp before deciding where they can go. In the words of Jockey #2, “If I run for the Black camp at one time, I won’t be the one that runs with the

White camp in the next round.” Similarly, Jockey #1 observed:

You won’t go to the other camp, to the rival or the contrada that is close to the rival. This is again because of the relationships you develop and the emotional bonds, you can’t go on one side and then on the other side.

Accordingly, we expect the emotional attachments mapping onto rivalry relationships to hinder the formation of unbalanced triads in mobility.

Hypothesis 2a. The likelihood of a career move between two organizations is reduced when one organization is a rival of the other’s allies.

Hypothesis 2b. The likelihood of a career move between two organizations is reduced when one organization is an ally of the other’s rivals.

Rivalry, Professionalization, and Career Mobility

Our model postulates that the relational constraints imposed by rivalry on mobility are systemic in nature. However, there are substantive reasons to expect the withering of the constraining ability. Scholarship observes that, as markets develop over time, their relational content tends to change (e.g., Polanyi, 1971). Development is reflected in related processes—competition increases, market infrastructure improves, frequency of exchanges augments, the level of uncertainty decreases, and information disseminates faster. One consequence of market development is the erosion of relational constraints and “irrational” biases (Arrow, 1973; Becker, 1971). Increasing market fluidity leads to stronger competition that increases talent mobility (Coff, 1997). If there is no limit to competition in a labor market, it should eliminate (or significantly reduce) the sources of hiring bias over time (Hirschman, 1977).

This leads to the expectation that jockeys in developed markets will be governed less by relational constraints and more by their self-interest, reflected in the willingness to move to whomever pays them the most. Some of our interviewees shared this observation. In the words of Captain #1, Giraffa’s former captain: “Nowadays, there is no legacy: we all run after the jockeys, they have the advantage. It is a market, a race before the race.” The proliferation of races in Italy (Fucecchio, Ferrara, Legnano, Asti) and the creation of a formally regulated professional category in the last century has pushed jockeys to identify less with an employer and pursue

opportunities more widely than before. As Captain #2, a former captain of Aquila, observed:

Previously, the relationship with the jockeys was much stronger. If a jockey runs for you and, after X Palios, he goes to your rival, this was a serious offence. Now, with jockeys who have reached very high levels of professionalization, this is happening more: the relationship may cool down somewhat, but it is not the scandal that it used to be. Now it happens, before it didn’t. It is less serious.

Additionally, a former jockey, Jockey #3, observed that, over the course of a jockey’s career, constraints apply less strictly—the more established the jockey, the less likely he is to conform: “After several years, then [joining a rival] doesn’t matter, you think only about the contrada that is employing you.”

However, other scholarly accounts and interviews lend credence to the opposite expectation. For example, economic sociology demonstrates that relational factors are not eliminated by market forces (Granovetter, 1985; Uzzi, 1997). That constraints endure is also observed in labor markets—constraints on employee mobility allow firms to capture value from top performers (Campbell, Kryscynski, & Olson, 2017: 345). While some jockeys consider moving to a rival, others, “because of ethics or gratitude for what winning in a contrada may have meant, decide to make a different choice. I prefer the latter” (Captain #3, former captain, Valdimontone). Similarly, Captain #2 noted that:

It’s a free market, but, within it, you try to develop a strong relationship with a jockey so that he will not go to your rival. These ties are cultivated throughout the year. With professionalization, [the jockey] has become more independent. But these relationships matter to him, too.

Professionalization was often invoked in our interviews as a system-level force that structures the development of the jockey labor market. Professionalization is the process by which an occupation transforms itself into a profession. It involves establishing qualifications, a professional body to oversee the conduct of members, and clear demarcation of the qualified from the unqualified (Abbott, 1988). The possession of a socially validated body of codified knowledge (or professional human capital) is what differentiates professionals from laypeople (Eyal, 2013; Mayer, Somaya, & Williamson, 2012). Professionalization establishes the credentials of members, ensuring conformity to key normative expectations by way of qualification and control (Abbott, 1988).

We suggest that professionalization reinforces conformity to informal regulations, such as the expectation of loyalty or purity of affiliation. The goal of professionals is not simply achieving high performance, but improving their professional standing and reputation (Hilgartner, 2000). One of the principal ways to do so is by abiding by the conventions of rivalry, even at the risk of foregoing a lucrative offer by rivals. Prior #1, a former *priore* of Selva, noted, “Not all jockeys are like that [driven by money]. Some good ones are not that focused on playing the game; they see things from the standpoint of a jockey, not a moneymaker.”

These considerations point to a twofold historical development—that is, greater freedom for jockeys in choosing their employer because of market competition, but also increasing pressure on jockeys to comply with unwritten norms. This was articulated aptly by Captain #6, a former captain of Nicchio:

The regulations that cumulated over time increased individual freedom on the one hand, but also increased the number of constraints [on jockeys]. The Palio is evolving toward a model less unpredictable, less surprising, more constrained than what we were used to before.

As an illustration, consider the real-life situation invoked by Lieutenant #1, a former *mangino* (lieutenant) of Giraffa: “If I pay you 100,000 euros for a [special] service, then you cannot go to the rival in the next race. [Jockey X] did it, and then he complains that the contrada retaliated on him with [Jockey Y]!?” In this view, the elevated monetary compensation of a professional jockey makes him not less but more accountable to his employer for breaching informal rules of conduct, invoking the possibility of punitive action. Accordingly, we expect that rivalry asserts itself against system-level forces that threaten to erode it by reinforcing relational gaps in mobility networks. This expectation is formalized as follows:

Hypothesis 3. The negative effect of rivalry on career mobility (Hypothesis 1) becomes stronger with the development of markets.

METHODS

Data Collection and Analysis

Our quantitative analysis draws on historical data on the Palio from the archives of the municipality of Siena and of individual neighborhoods by Orlando Papei (2015) and Sergio Profeti (2015), as well as

from books recording the races over the last three centuries (Filiani & Zaffaroni, 2002, 2003; Giannelli & Picciafuochi, 2006; Lombardi, 2002; Luchini, 2010). For the analysis of mobility, we reconstructed the career moves of 480 jockeys between 1743 and 2011. The quantitative data complement the qualitative evidence collected during our visits in Siena. We conducted 36 interviews with active and retired jockeys, captains, *priori*, lieutenants, contrada members, and Palio experts. Lasting between 30 and 90 minutes, the interviews were recorded and transcribed. We also obtained the text of 75 interviews conducted between 2012 and 2014 by a local journalist who was permitted to interview all jockeys and captains before each Palio.⁵ These interviews offered valuable insights into the inner workings of the Palio.

The study’s interviews were conducted according to established procedures (e.g., Miles & Huberman, 1984). We asked broad questions on the careers and hiring of jockeys and on the role of rivalries and alliances in Siena. Using the data analysis software QSR NVivo, we first open coded instances in the data where informants referred to rivalry, its nature, and implications for the Palio. Informants explained what rivalry meant to them, providing anecdotes as illustration. We found that most informants focused on what rivalry prevented them from doing, rather than on what rivalry enabled. The novelty of this observation in research on rivalry encouraged us to pursue this direction further. The refined axial coding provided better understanding of the relational constraints imposed by rivalry in labor markets, guiding our theory development and helping validate our measures and modeling approach in the quantitative analyses.⁶

⁵ Quotes by Captain #4, Jockey #10, and Captain #5 come from the journalist’s archive; all the other quotes in the present paper come from the interviews we conducted.

⁶ This study evolved in parallel with another study (Operti, Lampronti, & Sgourev, 2018) that used some of the data featured here. That paper focused on an unrelated outcome (collective violence at the Palio), and showed that organizational ties of rivalry and friendship increase the likelihood of incident occurrence, while mobility along these lines reduces it. The two studies differ in two key respects. First, regarding the unit of analysis, the present paper focuses on mobility at a dyadic level, while the other study explored conflict at the organization level. Second, this paper analyzes the antecedents of mobility, while the other one looked at the consequences of mobility, consistent with the assumption that mobility is both a product and a factor of relational processes (Shipilov et al., 2017).

Variables

Our unit of analysis was the neighborhood-dyad year. For each pair of contrade in each year t , our outcome of interest was the jockey mobility network. The dependent variable $Move_{ijt}$ took the value of 1 if at least one career move was observed from contrada i (sender) to contrada j (receiver) in year t . Six structural variables were included in the model. Our key independent variable $Rival_{ijt}$ was set to 1 if a formally declared rivalry between contrada i to contrada j existed in each period t , and 0 otherwise. Likewise, the variable $Ally_{ijt}$ was set to 1 if a formally declared alliance between contrada i to contrada j existed in year t , and 0 otherwise. To measure *Allies of Rivals* $_{ij}$ in a given period t , we multiplied the rivalry network by the alliance network. To identify *Rivals of Allies* $_{ij}$ in a given period t , we multiplied the alliance network by the rivalry network. Going back to the example provided in Figure 1, red ties represent Rivalries, while green ties represent Alliances. A tie going from i to C (or D) represents an Ally of Rival configuration, while a tie going from i to E represents an instance of a Rival of Ally configuration. All matrices were directed and nonsymmetrical. Our models also included the variable Ally of Ally, derived from the alliance network, and the variable Rival of Rival, derived from the rivalry network.

Our field interviews suggested two related ways to capture the development of the jockeys' labor market over time. The first was the number of horse races in other regions, as an extension of the Senese labor market. A circuit of races is a precondition for the professionalization of jockeys by generating sufficient demand to allow them to focus on racing full time. Based on interviews, we identified four races—in Asti, Ferrara, Fucecchio, and Legnano—that opened their doors to jockeys in Siena, granting them legitimacy and further remuneration opportunities. These races have historical roots, but have been discontinued multiple times over the centuries.⁷ Our first measure of *Professionalization* $_t$ counts the number of alternative historical horse races each year that employ jockeys from Siena.

Second, our informants highlighted the importance of regulatory changes affecting the labor market. The

rulebook of the Palio originated in 1721, and was revised in 1796, 1836, 1841, 1852, 1906, and 1949. Based on expert evaluation (Martinelli, 2008), we identified four regulatory dimensions of jockeys' activity: eligibility restrictions based on age limits, permission of kinship ties between participants, jockeys' personal liability, and the obligations for the employment of jockeys to be listed in a formal register. Our second measure of *Professionalization* $_t$ uses the count of active regulatory constraints on jockeys' activity. The introduction of regulations and safety procedures reflects the institutionalization of races. Safety is paramount when jockeys are accountable for their performance and the race is their main source of income. Injuries and incidents can have major consequences by preventing the monetization of one's performance.

As suggested by previous research (Kilduff et al., 2010), we controlled for market competition via performance dissimilarity. The variable *Performance Gap* $_{ijt}$ stands for the difference in victories between contrada i and contrada j in a given year t . We also accounted for *Competitive Overlap* $_{ijt}$ —the number of races in which contrada i and contrada j competed against each other (they were randomly selected as one of 10 contrade participating in a Palio) over the last five years. During the last two centuries, four contrade received the honorary title of “Nobile (Noble) Contrada,”⁸ as a recompense for military or political achievements. Honorary titles are historically related to the social prominence of a contrada. We used the conferral of such titles to control for *Status Differences* $_{ijt}$ in a given pair of contrade. *Status Differences* $_{ijt}$ was coded -1 when a jockey moved from a contrada i with an honorary title to a contrada j without one, coded 0 when a move occurred between contrade of equal status, and 1 in the case of a move from a low-status to a Noble contrada. We constructed a network of geographic proximity to control for the role of shared geographical borders. Each dyad-level variable was set to 1 if contrada i and contrada j shared a geographic border, and 0 otherwise. To control for the multitude

⁷ The palio in Asti was discontinued between 1863 and 1929 and between 1939 and 1966. The palio in Legnano was introduced in its current format in 1935, discontinued in 1939, and revived from 1952. The palio in Ferrara had medieval origins, but was relaunched in its current format in 1933, then discontinued in 1939, and revived from 1969. The palio in Fucecchio was launched in 1982.

⁸ Nicchio received the title of Nobile contrada in 1844 for the contribution of its people to the battle of Montaperti; Bruco received it for its contribution to the battle of Croce del Travaglio (1369); Oca received it in 1846, for the battles of Montemaggio, Montaperti, and the Medicean siege (1552–1555). Aquila was ennobled in 1536 by Charles V of Hapsburg. Noble titles correlate with the size of the contrada and were generally conferred to the wealthier neighborhoods in Siena (Barbarulli & Leoncini, 2017).

of factors that influence the state of the Senese labor market from year to year, we included a set of dummy variables for each year in our sample (2011 was the omitted year). We do not report the coefficients for the year fixed effects due to space constraints, but they are present in all models.⁹

RESULTS

Dyad-Level Analyses

Our data set featured 46 instances of alliance formation and 33 of alliance termination between 1743 and 2011. In this period, 11 rivalries were formed and six were terminated. The average duration of a rivalry was 125.8 years and of an alliance was 141.2 years (the year 2017 was the right-censoring point). As these numbers suggest, the rate of alliance and rivalry formation was relatively low, even if a modest increase was visible in the last century.

Direct moves between rivals were a rare occurrence. If the total number of career moves in our sample was 3,072, only 2%¹⁰ occurred between rivals. The mean probability of a move was 6.4%. Figure 2 provides preliminary evidence for our arguments, overlaying a plot of the current rivalry and alliance networks with the mobility network in the time window of 1962–2011. Cumulated moves between rivals are almost nonexistent, as demonstrated by the limited overlap between blue and red lines. The figure also reveals limited overlay between alliances and mobility, particularly in the presence of unbalanced triads. Most career moves occurred between neutral contrade and were not embedded in relational configurations.

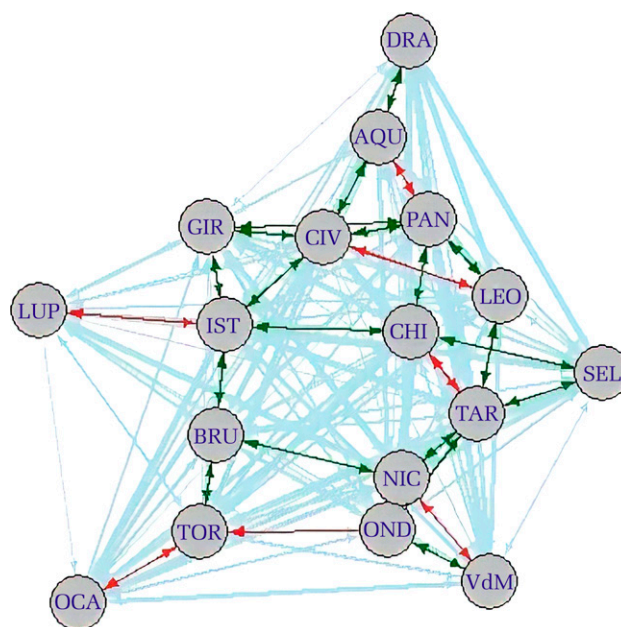
Table 1 presents the correlations and descriptive statistics.¹¹ Multicollinearity is not a concern, as attested by a maximum mean variance inflation

⁹ In the validity section, we present results from additional models capturing alternative drivers of mobility identified in past research. Some of the factors typically related to career mobility do not apply in our context. For example, comobility or turnover trends do not appear in the Palio because the jockey is the only actor who can move freely between contrade (all others are assigned to their contrada by birth). We thank an anonymous reviewer for encouraging us to clarify this point.

¹⁰ Even if we normalize the frequency of the moves by the number of moves that could have occurred in a race (given the set of participants drawn from the lot), only 3% of all career moves occur between rivals.

¹¹ All tests presented and discussed in the Results section are two tailed.

FIGURE 2
Alliance, Rivalry, and Mobility Networks
(1962–2011)



factor of 1.81 (Belsey, Kuh, & Welsch, 1980). We estimated the probability of a move within a dyad as a function of covariates of interest, using a dyad-level panel fixed-effects logit model with year dummy variables.¹² The choice of a fixed-effect panel model was based on a Hausman (1978) test, according to which the null hypothesis that the dyad-level effects are adequately captured by a random-effects model was rejected, $\chi^2 = 352.54$, $p < .001$. The results are presented in Table 2. Model 1 is the baseline model. Of the traditional measures of competition, such as performance difference and competitive overlap, only the latter has a significant effect on the likelihood of a move. The more often two contrade compete against each other in races, the less likely a jockey is to move from one to the other. This attests to the role of competition in labor markets (Porter, 1980; Scherer & Ross, 1990). The coefficient associated with status differences is positive, although not

¹² A likelihood ratio test was used to compare the goodness of fit of a model that included only two sets of contrada fixed effects and a model that included dyad-level fixed effects. The results indicate that including dyad fixed effects brings about a statistically significant improvement in the model fit, $\chi^2(238) = 561.64$, $p < .001$. In addition, a set of Chow tests indicated that a panel model should be preferred to a pooled model.

TABLE 1
Descriptive Statistics and Bivariate Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Move													
2 Rival	-0.02												
3 Ally	0.01	-0.06											
4 Rival of Ally	-0.01	-0.02	0.01										
5 Ally of Rival	-0.00	0.06	0.00	0.03									
6 Ally of Ally	0.00	0.03	0.11	0.03	0.02								
7 Rival of Rival	0.01	-0.01	0.09	0.01	0.03	0.03							
8 Shared Border	0.01	0.19	0.03	-0.00	0.02	0.03	-0.03						
9 Professionalization	-0.00	0.05	-0.05	0.07	0.07	-0.05	-0.02	-0.00					
10 Competitive Overlap	-0.00	0.02	0.02	0.02	0.02	0.02	0.03	-0.01	-0.07				
11 Performance Gap	0.00	-0.01	0.00	0.04	-0.06	-0.00	-0.06	-0.00	-0.00	-0.00			
12 Past Mobility	0.01	0.11	0.03	0.07	0.08	0.01	0.03	0.04	0.44	0.06	-0.01		
13 Status Gap	0.00	0.00	-0.00	0.00	0.01	0.00	0.06	-0.00	0.00	-0.00	-0.11	-0.00	
Mean	0.06	0.03	0.20	0.09	0.10	0.13	0.01	0.23	1.27	3.51	0.00	6.00	0
SD	0.24	0.18	0.40	0.29	0.29	0.34	0.08	0.42	1.27	1.44	10.70	4.65	0.54

Notes: $n = 44,196$ dyad-year observations. All correlations greater than .013 are statistically significant at $p < .01$.

TABLE 2
Main Results: Panel Logit Estimates with Dyad Fixed Effects

	Model 1	Model 2	Model 3	Model 4	Model 5
Rival		−1.01*** (0.22)	−1.02*** (0.22)	−0.69** (0.26)	0.17 (0.43)
Rival × Professionalization				−0.22* (0.11)	−0.47** (0.16)
Ally of Rival			−0.21* (0.09)	−0.22* (0.09)	−0.22* (0.09)
Rival of Ally			−0.17 [†] (0.09)	−0.19* (0.09)	−0.20* (0.09)
Ally	0.13 (0.10)	0.01 (0.10)	−0.00 (0.10)	−0.02 (0.10)	−0.03 (0.10)
Ally of Ally	−0.06 (0.06)	−0.05 (0.06)	−0.06 (0.06)	−0.05 (0.06)	−0.05 (0.06)
Rival of Rival	−0.11 (0.36)	−0.15 (0.36)	−0.13 (0.36)	−0.11 (0.36)	−0.12 (0.36)
Professionalization	1.99*** (0.36)	1.99*** (0.36)	2.01*** (0.36)	2.02*** (0.36)	2.03*** (0.36)
Competitive Overlap	−0.03* (0.02)	−0.03 [†] (0.02)	−0.03 [†] (0.02)	−0.03 [†] (0.02)	−0.03 [†] (0.02)
Performance Gap	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)
Past Mobility	−0.27*** (0.01)	−0.26*** (0.01)	−0.27*** (0.01)	−0.27*** (0.01)	−0.27*** (0.01)
Status Gap	0.09 (0.08)	0.09 (0.08)	0.09 (0.08)	0.09 (0.08)	0.09 (0.08)
Dyad fixed effects?	Y	Y	Y	Y	Y
Year fixed effects?	Y	Y	Y	Y	Y
Log likelihood	−9172.50	−9159.91	−9155.48	−9153.14	−9150.59
Wald χ^2	706.44	731.62	740.48	745.14	750.25
Observations	44,196	44,196	44,196	44,196	44,196
Number of dyads	272	272	272	272	272

Note: Standard errors in parentheses.

[†] $p < .10$

* $p < .05$

** $p < .01$

*** $p < .001$

significant at conventional levels, suggesting that moves tend to occur from lower-status contrade to higher-status ones. Interestingly, past mobility has a negative effect: the greater the number of past moves between two contrade, the lower the probability of a future move. This implies that the mobility network is relatively dynamic.

As our substantive interest is in the systemic properties of rivalry, we did not theorize about the mobility effects of alliances or ally-of-ally configurations. The coefficients in Model 1 reveal that interorganizational collaborative agreements are not a factor of increased mobility. Reinforcing the qualitative evidence collected in our fieldwork, the results indicate that status does not significantly affect the jockeys' career decisions. The critical role of professionalization is confirmed; the count of other

races employing jockeys from the Palio di Siena has a significant positive association with the likelihood of a career move, $\beta = 1.99$, $p < .001$. This corroborates the pattern identified in past scholarship, where the development of markets is associated with increasing mobility (e.g., Coff, 1997; Polanyi, 1971).

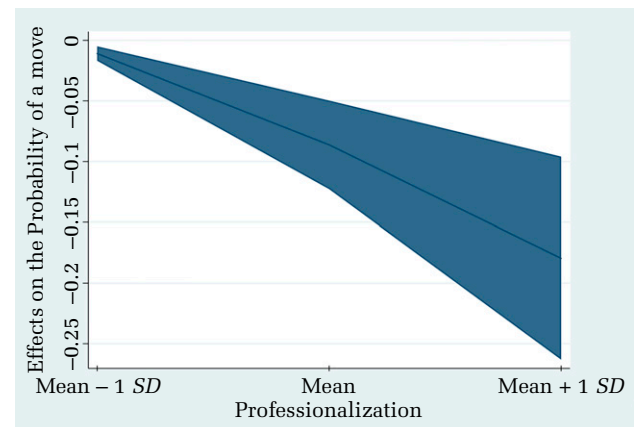
Model 2 introduces our first covariate of interest, the existence of a rivalry between contrade. The results support Hypothesis 1. The effect of rivalry on the probability of a career move is negative and significant, $\beta = -1.01$, $p < .001$. The odds of a move for pairs of rival contrade over the odds of a move for the reference group is 0.36—that is, the odds of a move between rivals are lower by 64% compared to the reference group. These results provide evidence that rivalry constrains career mobility in a significant manner, forcing actors to adapt to structural constraints.

The second set of hypotheses concerned the systemic implications of rivalry. Hypothesis 2a predicted that the likelihood of a career move between two contrade would be reduced when one is a rival of the other's allies. The results are in line with this expectation—the odds of a move to a rival of an ally is 0.84 of the odds for the control group. The effect is marginally significant in Model 3, $\beta = -0.17$, $p < .10$, odds ratio (OR) = 0.84, and is significant at conventional levels in Model 4, $\beta = -0.19$, $p < .05$, OR = 0.83. Hypothesis 2b predicted that the probability of a career move between employers would be reduced when one is an ally of the other's rivals. Model 3 provides evidence in this respect, $\beta = -0.21$, $p < .05$. Based on Model 4, the odds of a move to a rival of an ally is 19% lower compared to the odds of the control group. The evidence is relatively weaker compared to that for the other hypotheses (also confirmed by the sensitivity analyses). Our fieldwork suggests that this may be due to the emergence of unbalanced triads in the first decades of the 20th century that may have affected career trajectories. However, the alignment between qualitative and quantitative evidence collected through different methods and the size of the estimated effects strongly suggests that relational constraints extend beyond the focal dyad.

Hypothesis 3 articulated the effect of system-level constraints on the rate of between-rival moves. To test this hypothesis, we interacted the Professionalization and Rivalry variables. The results in Model 4 confirm that the constraining effect of rivalry is moderated by the degree of market maturity, $\beta = -0.22$, $p < .05$; that is, professionalization reinforces adherence to conventions, such as the expectation of not moving to a rival of the past employer. To facilitate the assessment of the magnitude of moderation, Figure 3 illustrates the average marginal effect of rivalry on the probability of a career move. Holding the professionalization variable at its mean, rivalry reduces the probability of a career move by 8.6% (compared to the baseline of no rivalry). At high levels of professionalization (mean + 1 *SD*), rivalry reduces the probability of a career move by 17.9%, while at low levels of professionalization (mean – 1 *SD*), it reduces the probability of a career move by only 1.1%.

Model 5 replicates the analysis using an alternative type of labor market constraint: the number of regulatory restrictions on jockeys. The results provide further evidence that the effect of rivalry becomes stronger when labor markets become more institutionally regulated, $\beta = -0.47$, $p < .01$, which is in line with Hypothesis 3.

FIGURE 3
Average Marginal Effects of Rivalry at Different Levels of Professionalization (with 95% CIs)



Note: The plotted value is the discrete change in the probability of career mobility (with CI) for dyads marked by rivalry, at different values of professionalization (base level = no rivalry).

Additional Analyses

We tested the robustness of the results in additional analyses, presented in Table 3. First, we tried alternative measures for some of the key constructs in the study. Our operationalization of *Performance Gap* is rooted in the study's context: in the Palio, the key goal is winning; those who place second are often suspected of treachery and even mocked as if they lost the race. However, one may argue that dyads in which neighborhoods repeatedly compete neck and neck to the finishing line develop stronger competitive pressures than dyads whose race outcomes are not closely matched. To address this concern, in Model 6, we also controlled for *Performance Gap* by counting the cumulated number of races where contrada *i* and contrada *j* occupied the first and second positions. The results reproduce the findings seen in Model 4. Mobility is reduced between rivals, $\beta = -0.69$, $p < .01$, between rivals of allies, $\beta = -0.19$, $p < .05$, and between allies of rivals, $\beta = -0.21$, $p < .05$. The results also corroborate our third hypothesis that the effect of rivalry is more pronounced at high levels of professionalization, $\beta = -0.22$, $p < .05$. We also replicated the analyses by replacing the rivalry dummy with the strength of rivalry, measured through the logarithm of the duration of rivalry between contrade (Model 7). The results support Hypothesis 1, $\beta = -0.25$, $p < .001$, and Hypothesis 3, $\beta = -0.05$, $p = .05$. The results on reduced mobility between rivals of allies, $\beta = -0.19$, $p < .05$, and allies of rivals, $\beta = -0.22$, $p < .05$, are in line with our Hypothesis 2.

TABLE 3
Additional Analyses: Panel Logit Estimates with Dyad Fixed Effects

	Model 6	Model 7	Model 8	Model 9
Rival	−0.69** (0.26)	−0.25*** (0.08)	−0.69** (0.26)	−0.63* (0.27)
Rival × Professionalization	−0.22* (0.11)	−0.05* (0.03)	−0.23* (0.11)	−0.24* (0.11)
Ally of Rival	−0.21* (0.09)	−0.22* (0.09)	−0.22* (0.09)	−0.16 [†] (0.09)
Rival of Ally	−0.19* (0.09)	−0.19* (0.09)	−0.19* (0.09)	−0.18 [†] (0.10)
Ally	−0.02 (0.10)	−0.03 (0.10)	−0.03 (0.10)	−0.07 (0.11)
Ally of Ally	−0.05 (0.06)	−0.05 (0.06)	−0.05 (0.06)	−0.05 (0.07)
Rival of Rival	−0.11 (0.36)	−0.11 (0.36)	−0.11 (0.36)	−0.10 (0.36)
Professionalization	2.01*** (0.36)	2.03*** (0.36)	2.02*** (0.36)	1.05*** (0.16)
Competitive Overlap	−0.03 [†] (0.02)	−0.03 [†] (0.02)	−0.03* (0.02)	−0.04* (0.02)
Performance Gap	0.01 (0.03)	0.00 (0.01)	0.00 (0.01)	0.01 (0.01)
Past Mobility	−0.27*** (0.01)	−0.27*** (0.01)	−0.27*** (0.01)	−0.29*** (0.02)
Status Gap	0.07 (0.08)	0.09 (0.08)	0.09 (0.08)	0.08 (0.10)
Hiring contrada recent win			0.23*** (0.06)	0.20** (0.07)
Hiring contrada nonna			0.21* (0.09)	0.18 [†] (0.10)
Captain Experience Gap				−0.01* (0.00)
Captain Win Record Gap				−0.03 (0.08)
Dyad fixed effects?	Y	Y	Y	Y
Year fixed effects?	Y	Y	Y	Y
Log likelihood	−9153.29	−9149.04	−9144.10	−7978.70
Wald χ^2	744.84	753.36	763.23	552.40
Observations	44,196	44,196	44,196	37,810
Number of dyads	272	272	272	272

Note: Standard errors in parentheses.

[†] $p < .10$

* $p < .05$

** $p < .01$

*** $p < .001$

Second, we addressed factors that prior research identified as potential drivers of career mobility. Model 8 accounts for differences in the incentives offered by the hiring contrada. Because of the nature of our research context, we cannot directly observe differences in the remuneration of jockeys between contrade or examine their impact on mobility. However, our fieldwork highlighted two scenarios under which a hiring contrada is likely to offer substantial premiums: when the contrada is the “nonna”

of the race, or the one with the longest nonwinning span, and when the hiring contrada has won the last Palio and is pursuing a “cappotto,” or a sequence of two wins in a row. Accordingly, we constructed two dummy variables, *Hiring Contrada Nonna_j* and *Hiring Contrada Recent Win_j*, to identify prospective employers along these lines. The results confirm that mobility occurs in the direction of employers that provide higher economic incentives because they face a long spell without winning, $\beta = 0.21$, $p < .05$,

or when the hiring contrada pursues two wins in a row, $\beta = 0.23$, $p < .001$. Nonetheless, the results corroborate the evidence presented in Table 2.

Given that career moves may be determined by differences in the recruitment capabilities of captains, we added to Model 9 two additional captain-level controls: a variable labeled as *Captain Experience Gap_{ij}*, which is the difference in tenure between the captain of the past employer (sender) and future employer (hiring), and the variable *Captain Win Share Gap_{ij}*, indicating the difference in the proportion of Palios won by the sending and hiring of a captain before a race.¹³ Our results, reported in Model 9, reveal that career paths typically feature movement from contrade with experienced captains to newly elected captains, $\beta = -0.01$, $p < .05$. While this result may initially seem surprising, we believe it reflects the willingness of jockeys to create bonds and demonstrate loyalty to captains that can bolster their employability in the long run. Overall, this corroborates the view of the Palio as a social system that rewards conformity to normative expectations. The other variables do not have a bearing on mobility paths. With respect to our hypotheses, rivalry decreases the odds of a move, $\beta = -0.63$, $p < .05$, particularly at high levels of professionalization, which is in line with our third hypothesis, $\beta = -0.24$, $p < .05$. With respect to second-order rivalry effects (Hypothesis 2), the observed effects are weaker than in Model 4, $\beta = -0.16$, $p < .10$, for Ally of Rival and $\beta = -0.18$, $p < .10$, for Rival of Ally.

We employed alternative estimation methods for two reasons. First, the interpretation of interaction effects in nonlinear models may be problematic when several fixed effects are included. Hence, we estimated a linear regression model with a comparable fixed effect structure (Model 10; see Table 4). This specification lends support to Hypotheses 1 and 3; rivalry decreases the odds of a career move, $\beta = -0.03$, $p < .01$, and it does so even more significantly at high levels of professionalization, in line with Hypothesis 3, $\beta = -0.01$, $p < .05$. We found weak support for Hypothesis 2b, $\beta = -0.01$, $p < .10$, while Hypothesis 2a was not supported. Second, there is a potential concern that the selected panel logit specification does not allow for clustering of standard errors—that is, it does not account for the nonindependence across observations for each actor and/or dyad. To address this, we estimated a pooled logit model with double clustered observations by

the sending and hiring contrada (Model 11; see Table 4), using a widely employed technique in finance research (Petersen, 2009). Once again, rivalry decreases the odds of a career move, $\beta = -0.75$, $p < .01$, particularly at high levels of professionalization (Hypothesis 3), $\beta = -0.22$, $p < .05$. With respect to second-order rivalry effects (Hypothesis 2), the observed effects are weaker than in Model 4, $\beta = -0.21$, $p < .10$, for Ally of Rival and $\beta = -0.18$, $p < .10$, for Rival of Ally.¹⁴ Finally, we used a conditional logit with observations clustered at the dyad level. Again, the results are in line with our hypotheses and field evidence. Rivalry decreases the odds of a career move, $\beta = -0.69$, $p < .01$, especially at high levels of professionalization, $\beta = -0.22$, $p < .05$. Mobility to allies of rivals (Hypothesis 2b) is also reduced, $\beta = -0.22$, $p < .05$, while we find weaker support for Hypothesis 2a, $\beta = -0.19$, $p < .10$.

Modeling Mobility Networks using Stochastic Actor-Oriented Models

The use of a fixed effect logit model is commonplace in network dynamics research (e.g., Powell, White, Koput, & Owen-Smith, 2005). However, dyads in networks are connected to each other via different paths. This poses the problem of autocorrelation—when observations for actors are not independent over time or in space (Leenders, 2002) in ways going beyond within-actor or within-dyad dependencies (addressed by Model 11 and 12). To address this concern, we used statistical methods designed to model longitudinal network data, known as “stochastic actor-oriented models,” using the package rSiena (Snijders, Van de Bunt, & Steglich, 2010).

Actor-based models of network change build on several key assumptions. First, they assume that changes in interorganizational ties are a discrete outcome of a continuous-time Markov chain. Hence, the method is more appropriate for representing states than events (i.e., career moves). Event networks can be aggregated over (nonoverlapping) time windows to obtain “state-type” networks. Second, these models are actor oriented, assuming tie

¹³ Captain data are available from the beginning of the 19th century. Hence, the sample is reduced to 37,810 dyads.

¹⁴ In unreported analyses, we estimated a Poisson model and a rare-event logit model, as is common in political science (King & Zeng, 2001), aggregating the data into 50-year windows. The use of time windows reduced the number of dyads with no mobility events and allowed us to better capture the historically enduring properties of mobility exchanges. Both types of analyses returned results well aligned with those presented in the paper.

TABLE 4
Alternative Model Specifications

	Model 10 (Linear probability model)	Model 11 (Pooled logit with double clustered SE)	Model 12 (Conditional logit with SE clustered by dyad)
Rival	−0.03** (0.01)	−0.75** (0.26)	−0.69** (0.23)
Rival × Professionalization	−0.01* (0.00)	−0.22* (0.11)	−0.22* (0.10)
Ally of Rival	−0.01 [†] (0.00)	−0.21 [†] (0.12)	−0.22* (0.11)
Rival of Ally	−0.01 (0.00)	−0.18 [†] (0.11)	−0.19 [†] (0.11)
Ally	−0.00 (0.01)	−0.14 (0.17)	−0.02 (0.13)
Ally of Ally	−0.00 (0.00)	−0.03 (0.08)	−0.05 (0.07)
Rival of Rival	−0.00 (0.02)	−0.08 (0.48)	−0.11 (0.43)
Professionalization	0.06*** (0.01)	0.36 (0.35)	2.02*** (0.37)
Shared border	0.07* (0.03)	1.14*** (0.28)	dropped dropped
Competitive Overlap	−0.00 [†] (0.00)	−0.03** (0.01)	−0.03 [†] (0.02)
Performance Gap	0.00 (0.00)	−0.00 (.)	0.00 (0.01)
Past Mobility	−0.01*** (0.00)	−0.22*** (0.05)	−0.27*** (0.02)
Status Gap	0.01 (0.00)	0.12*** (0.02)	0.09 (0.11)
Dyad fixed effects	Y	Y	Y
Year fixed effects	Y	Y	Y
Constant	−0.08*** (0.02)	−1.89 (1.46)	
R^2 (or pseudo R^2)	0.02	0.05	0.04
Log likelihood		−9752.00	−9153.14
Wald χ^2			65626.41
Observations	44,196	43,866	44,196
Number of clusters (sender)		17	
Number of clusters (hiring)		17	
Number of dyads	272	272	272

Note: Robust standard errors in parentheses.

[†] $p < .10$

* $p < .05$

** $p < .01$

*** $p < .001$

formation and dissolution to reflect the “choice” of an actor (i.e., to form a tie with an employer). In our context, the objective function underlying this choice can be interpreted as an attempt to reduce the cost when the realized pattern of exchange is inconsistent with the constraints imposed by a rivalry. Contrade cannot directly affect the exchanges between other dyads, but can reduce the occurrence of “inconsistent” patterns by adjusting their moves in response to surrounding ties. Our model captures

changes in consolidated mobility patterns between contrade, allowing for the identification of relational gaps in the mobility networks.

To obtain “state-type” networks, we aggregated career moves using five time-windows of 50 years: 1762–1811, 1812–1861, 1862–1911, 1912–1961, and post-1961. We then normalized the count of moves, obtaining a z score between −1 and 1. We dichotomized each mobility network, using 0 as a threshold—that is, the standard model was developed for a binary,

directed, one mode network. The process yielded five 17×17 mobility networks representing our dependent variable. We then generated the independent variables using the same time windows. Tie formation in a mobility network is expressed as a linear combination of three classes of effects: individual, dyadic, and structural (Snijders et al., 2010). Our individual and dyadic effects were the same as those featured in Table 2. Structural effects allowed us to control for endogenous mechanisms of network evolution and better account for the nonindependence of dyads. The choice of the effects in the model reflects best practices in the field (Snijders et al., 2010) as well as our knowledge of the context.

The results are reported in Table 5. The convergence of the estimation algorithm was very good for all models, with the t statistics for all parameters below 0.1, the accepted convergence threshold in rSiena. The parameter estimates provide a model for the rules governing the dynamic change in the network (Snijders et al., 2010). The parameters specify the frequency with which an actor can change their status quo in the mobility network in

each time window. That they are increasing over time in a nonmonotonic fashion provides evidence for accelerated mobility, which is in agreement with our predictions.

The degree (density) parameter is significant and negative, suggesting that actors are generally reluctant to form new ties. This finding is common in network evolution models, and implies, in our study's context, that actors do not benefit from forming random mobility ties to other contrade that are not a part of a local structure. As degree-related effects are assumed to be the driving force in network dynamics (either as triad-level effects or as structural proxies for actor covariate effects, such as actor status or prominence), they should feature in all models as control mechanisms (Snijders et al., 2010). The positive and significant effect of out-degree popularity implies that the contrade involved in mobility networks as senders are more likely to receive incoming ties. The nonsignificant Reciprocity parameter indicates that exchanges between employers are not governed by reciprocity expectations. Contrade abstain from reducing mobility exchanges to proximate others, as shown by a negative transitive ties effect and a negative effect of the number of actors at Distance 2. Overall, the structural effects suggest that tie formation in mobility networks is driven by a market logic and not by social conventions, such as reciprocating an incoming tie or exchanging within narrow circles. The effect of the other control variables reinforces our confidence in the modeling strategy. Consistent with the models presented in Tables 2 to 4, the effect of Competitive Overlap is negative and significant, attesting to a reduced exchange propensity between close competitors. We also find that Geographic Proximity increases the likelihood of mobility, replicating a well-established finding in network research. The finding that status has no effect on mobility is not surprising; status effects may be partly captured by the parameter Outdegree Popularity.

Concerning the main parameters, the effect of Rival is negative and significant, $\mu = -0.395$, $p < .05$, indicating that an actor has a lower propensity to create a mobility tie with a rival. This confirms the existence of relational gaps in mobility networks, controlling for the local structure. The effect of Rival of Ally is negative and weakly significant, $\mu = -0.161$, $p < .10$, lending moderate support to Hypothesis 2a. The effect of Ally of Rival is in the expected direction but is not significant. To validate Hypothesis 3, we tested if the constraints imposed by rivalry are homogeneous over time, using the function *sienaTimeTest*. The results allow us to reject the null hypotheses, thus attesting to time heterogeneity. If considering the entire time

TABLE 5
Longitudinal Analysis of Mobility Networks Using
Stochastic Actor-Oriented Models

	Estimate	SE	<i>t</i>	<i>p</i> value
Rate (t_1 – t_2)	14.86	3.25		
Rate (t_2 – t_3)	26.26	7.63		
Rate (t_3 – t_4)	20.10	6.63		
Rate (t_4 – t_5)	22.18	7.56		
Density	–0.78	0.23	–3.32	.000***
Reciprocity	0.13	0.11	1.19	.235
Transitivity	–0.27	0.16	–1.67	.096 [†]
Number of Actors at Distance 2	–0.16	0.06	–2.48	.013*
Indegree Popularity	–0.07	0.04	–1.48	.139
Outdegree Popularity	0.17	0.05	3.65	.000***
Geographic Proximity	0.19	0.09	2	.046*
Ally	0.03	0.09	0.34	.732
Ally of Ally	0.19	0.05	1.92	.056 [†]
Rival	–0.39	0.18	–2.14	.032*
Rival of Rival	0.10	0.24	0.41	.685
Ally of Rival	–0.06	0.09	–0.7	.487
Rival of Ally	–0.16	0.09	–1.76	.079 [†]
Competitive Overlap	–0.02	0.01	–2.41	.016*
Performance Gap	–0.00	0.00	–0.6	.548
Status Gap	0.01	0.09	0.09	.928

Notes: All convergence t ratios < 0.1 . Overall maximum convergence ratio = 0.25.

[†] $p < .10$

* $p < .05$

** $p < .01$

*** $p < .001$

frame of 250 years, the chi-squared statistic for the Effect-wise joint significance tests is 6.4, $p = .081$. However, focusing only on the differences in effects over the last three windows, the difference in one-step indicators is highly significant, $p = .04$ and $p = .027$. Figure 4 plots the distribution of the rivalry parameter over time. Corroborating Hypothesis 3, the negative effect of rivalry is greater in the period post-1961, characterized by the highest level of professionalization in our data.

DISCUSSION AND CONCLUSIONS

This paper advances a theory of rivalry that articulates its systemic nature and implications. Its key contribution is in broadening the scope of rivalry research by extending beyond the level of the dyad. Addressing a well-recognized limitation in rivalry scholarship (Kilduff et al., 2010: 963), we theorized rivalry as a system of relational constraints that spreads within and across social domains. We document the spillover of rivalry in the domain of career mobility—a context in which the relational and institutional impediments to mobility are attracting increasing scholarly attention (Chadwick, 2017; Mawdsley & Somaya, 2016: 101).

Our main finding is the identification of relational gaps in mobility networks that extend beyond the focal dyad. This finding reinforces the observation that relational factors may constrain market exchanges, to the effect that certain resource flows tend not to occur despite the presence of interests that encourage them (Marsden, 1983). The occurrence of relational gaps in the labor market derives from normative expectations of loyalty and purity of affiliation with employers, and from the reluctance of

jockeys to violate these expectations and the categories associated with rivalry.

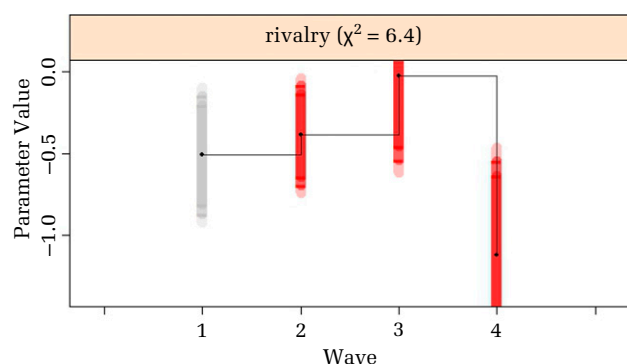
The analysis provides evidence that relationships of rivalry constrain not only moves to rivals but also those to allies of rivals and rivals of allies. Consistent with the concept of “balanced triads” (Heider, 1946), jockeys are reluctant to join the rival of an ally or ally of a rival of their employer, confirming that rivalry spreads to network nodes adjacent to the focal dyad. This finding attests that relationships of rivalry and friendship coexist and influence each other (Hernandez et al., 2015; Sytch & Tatarynowicz, 2014). This interdependence is a source of relational constraint, reducing the social space where rivals can exchange or negotiate. It constitutes a key reason why rivalry is irreducible to individual interests or dyadic ties (Gould, 2003).

Anchored in negative personal sentiments and judgments, antagonism can spread quickly beyond personal relationships (Gould, 2003). The coagulation of a system of relational constraints is based on the establishment of binary categories (Wiseman & Duck, 1995) and the enforcement of rules that govern patterns of association and disassociation in networks. Rivalry is encoded in cultural artifacts, in practices that encourage certain behaviors and sanction others, or in historical narratives that permeate daily conversations and that differentiate between “us” and “them.” If prior research identified behaviors, narratives, and strategies (Converse & Reinhard, 2016; Kilduff et al., 2010; Kilduff et al., 2016) associated with dyadic rivalry, we document similar mechanisms at the group level.

The systemic nature of rivalry is also illustrated by its endurance in developed labor markets. Our fieldwork and analyses indicate that the constraining power of rivalry became *stronger* with market-level factors, underlining the enduring role of relational factors in markets (e.g., Granovetter, 1985; Uzzi, 1997). This finding can also be interpreted as evidence that professionalization reinforces conformity to norms (Abbott, 1988; Mayer et al., 2012), such as the expectation of respecting an employer by not joining a rival. As professionals, jockeys balance the economic benefit of employment by a rival with the threat of stigmatization as a “traitor” for ignoring basic rules for (dis-)association.

If allowed by formal regulations in the context of an aggressive war for talent, the move to a rival (or its allies) is widely perceived as a betrayal. This stigmatized move is at the heart of a system of constraints that has endured over centuries by adjusting to a changing context. This adjustment is reflected in the

FIGURE 4
The Effect of Rivalry over Time (Stochastic Actor-Oriented Models)



simultaneous increase of mobility due to professionalization and its decrease within orbits of rivalry. Barriers to mobility were reinforced in some places but attenuated in others. This tendency was confirmed in our interviews, pointing to increasing discretion of jockeys and tightening constraints over their career trajectories.¹⁵

These mechanisms help us understand how rivalry extends beyond the level of direct rivals. The identification of career moves that are expected to occur but do not is relevant not only to rivalry scholarship but also to network research. Our emphasis on factors that prevent tie formation is in line with prior work examining restricted access in market exchange (Marsden, 1983) or conceptualizing “forbidden triads” in social exchange (Granovetter, 1985). However, the concept of “relational gap” introduced in this paper is more general in nature and has the advantage of applying across levels of analysis. Scholars tend to assume that the absence of connectivity in social networks is due to a lack of interest or awareness, or to limited opportunities to collaborate (Ahuja et al., 2012; Salancik, 1995). We show that missing ties in one domain may stem from a system of relational constraints in another domain. This idea can be easily adopted and further developed in network scholarship.

The analysis also contributes to mobility research (e.g., Godart et al., 2013; Mawdsley & Somaya, 2016; Shipilov et al., 2017) by identifying structural conditions leading to constraints in labor markets, which are irreducible to individual features, market characteristics, or status differentials. Our study responds to the call for closer attention to labor market frictions that constrain talent mobility (Campbell et al., 2017). Numerous studies attest to the loss of competitiveness that firms experience when they lose talent to a rival (e.g., Campbell et al., 2012; Wezel et al., 2006). The documented ability of rivalry to constrain employee mobility contributes to sustained performance by enabling firms to capture value from their employees. In theoretical terms, our analysis encourages the

integration in mobility studies of relational factors derived from the social structure of markets. The traditional emphasis on individual-level mobility predictors in strategic human capital research tends to overshadow the systemic features of mobility. The individual decision to change employers is embedded in a social structure, reflected in the interdependence between individual decisions (Sgourev & Zuckerman, 2011), but also in constraints over mobility emanating from structural configurations and not from individual or market attributes.

Within rivalry scholarship, our work not only extends the scope of rivalry but also offers an alternative behavioral model. The emphasis is not on what rivalry *does* (e.g., Converse & Reinhard, 2016; Kilduff et al., 2010) but on what it *prevents from doing*. This is anchored in an analytical tradition that attributes a greater role to blocking than enabling action in social organization (e.g., White, 1992). The framework of “structuration” (Giddens, 1984) posits the recursiveness of social life, where structure is both a medium and outcome of reproduction of practices. Actors, embedded in structure, draw upon their knowledge of that context when they act, and their action is then manifested in structure. Our model deviates from such recursiveness, as it postulates the *lack* of action as the link between actors and structure. In this logic, rivalry is defined not by what actors do but what they fail to do. Merely by abstaining from crossing enemy lines, jockeys validate social boundaries. We propose that blockage and conformity are fundamental to understanding rivalry—why it diffuses or endures even when actors lack an explicit intention to do so.

This mechanism has implications for the possible sources of change. The potential for change in rivalry is inherent in the dilution of blocking mechanisms (White, 1992), either via alternative channels for exchange or environmental shocks that interfere with the endogenous mechanism. Establishing weak ties between rivals, through mobility or other exchanges, facilitates information sharing (Ingram & Roberts, 2000) and reduces the fragmentation based on collective solidarity. This is confirmed in a related study, which demonstrated that the career mobility of jockeys is associated with a lower probability of incidents that involve past and present employers (Operti et al., 2018). Grohsjean et al. (2016) provided similar evidence from the National Hockey League. Given that the probability of an incident is highest between rivals, mobility between rivals can serve as a conflict mediator, which contributes to reducing competitive tension. However,

¹⁵ This development is also reflected in the negative effect of past mobility in our models. That past mobility reduces future mobility suggests that the network is more dynamic than what can be expected based on the relational structure in the Palio. This may be partly due to randomness-enhancing practices, such as selecting participants and assigning horses by lot. Whether by design or chance, the Palio has achieved a balance of stable and transient exchange flows—stable between allies or rivals and transient between neutrals.

as our analysis demonstrates, it is precisely this type of move that rivalry discourages most actively. Relational gaps matter the most when occurring at critical junctures in the social structure.

Generalizability, Limitations, and Future Research

The validity of our results is bolstered by the alignment between fieldwork and quantitative analysis. The findings agree with observations made by contrade members, experts, and jockeys expressed not only in the interviews we conducted but also in those completed by a third party with no research agenda. However, the unique nature of our research context raises the issue of the generalizability of the findings. The generalizability of our findings is bolstered by anecdotal evidence for relational gaps in mobility networks in other contexts. For example, the rivalry between the Catholic “Celtic” and Protestant “Rangers” clubs in Glasgow, Scotland, is described as the most intense in football. Its intensity is reinforced by the fact that the rivalry crosses religious, economic, and political lines. Since its beginning in 1888, only 19 players have played for both clubs, and, of these, just seven have moved directly between the clubs in 128 years. Remarkably, the frequency of moves declines dramatically after the Second World War; only five players have played for both clubs in the 1945–2016 period, and none of them has moved directly between the clubs.¹⁶ The rarity of the moves and their declining frequency in the period when the league became more established and players were better remunerated reproduces the pattern in the Palio. Another relevant observation is the tendency for companies to sponsor both teams, to preclude the boycott of their products by fans of the other team. Thus, CR Smith put its name on the jerseys of both clubs in 1984, with NTL in 1999 and Tennent’s Lager in 2010 doing likewise. These companies recognized what we observed in the Palio—that constraints related to rivalry can spread from sports to markets.

Rivalry is not restricted to professional sports or competitive races. As Kilduff et al. (2010, 2016) have emphasized, business rivalries (between firms or employees vying for promotions) might be even more powerful than sports rivalries since sports rivalries are based on a few encounters per year, while business rivalries tend to be marked by elevated levels of physiological activation, with potentially harmful

health effects. There is little to suggest that business rivalry evolves in a different manner from that highlighted in this paper. Consider the rivalry between Boeing and Airbus. We discovered that, out of 100,000 Boeing employees and 40,000 Airbus employees on LinkedIn, only 240 have worked at both companies, representing less than 0.2%. This attests to a very low level of cross-mobility, even in a quasi-duopoly.

For further insight, we interviewed a contact with 10 years of experience with one of these companies. She attested to the overall reluctance of employees to consider moving to the rival, even in locations where noncompete clauses are not binding (e.g., California) or in functions (e.g., commercial, environmental impact) that do not require the signing of noncompete clauses. Our informant told us that she “would never move to [the rival],” even if it were economically tempting. In her own words:

Personally, the thought of working for them ... I [would] feel like a traitor, I would rather go back to my company in another function. There is some loyalty. Because of what I received from [the past employer], I can’t go to [the rival]. But people do move to competitors, like Company A or Company B; we even partner with them.

She put us in touch with other employees from the same company who expressed a similar sentiment. One of them summarized the distinction between rivalry and competition in terms of mobility as follows: “Industry rivalry is between Boeing and Airbus; but talent competition is between Boeing and Company A.” Even if these are not systematic data, they are in agreement with our main findings.

There is evidence that firms are more likely to terminate or avoid both direct and indirect board interlocks with their rivals (Hernandez et al., 2015) and that relational gaps extend to the collaborators of rival firms. Replicating the analysis in other business contexts will allow establishing the generalizability of what we observed in the labor market for jockeys.¹⁷

¹⁶ Data on Glasgow’s “Old Firm” derby was retrieved from Wikipedia at https://en.wikipedia.org/wiki/Old_Firm (accessed November 8, 2018).

¹⁷ In the automotive industry, General Motors’ network of partners, which includes Toyota, Isuzu, Suzuki, and Saab, competes globally with a group of Ford partners, consisting of Nissan, Mazda, Kia, and Jaguar. In the airline industry, three major groups of airlines can be identified: One World, Star Alliance, and Sky Team. Gomes-Casseres (1994) has suggested that firms belonging to each group can mobilize their network against their rival. Our informant at Boeing indicated that she would be very surprised to see overlap in the allies and suppliers of Boeing and Airbus. She would consider a move to Boeing suppliers, but not to companies tied to Airbus.

Future research should investigate how rivalry conditions a broad set of outcomes, including patterns of collaboration, performance, strategy, and behavior. The social dynamic of diffusion through collaborative ties, and the resulting polarization underlying the effects of rivalry, are general in nature and are expected to occur systematically across and within organizations, applying to both interpersonal and interorganizational relations. We invite scholars to further explore whether some of the direct consequences of rivalry identified in past studies, such as enhanced motivation and performance or unethical behavior, extend beyond direct rivals through collaborative ties.

With respect to the scope conditions of our findings, we expect that the pertinence of the substantive conclusions of the study is related to the intensity of rivalry. Our results are likely to hold better in social contexts where relationships of rivalry are long lasting and established, as observed in the *Palio*. A key condition for the emergence of a relational system of constraint is that there is a credible threat of sanctioning and that the cost of treason (i.e., interacting with or engaging in a transaction with a rival of your friend) is relatively elevated. For rivalry to act as a social regulator in the described manner, there needs to be well-defined organizational or professional boundaries, so that behavior that deviates from rivalry-related expectations can be sanctioned through status loss, career damage, or ostracism. The observed effects of rivalry are likely to vary in magnitude in young versus established and in fragmented versus concentrated industries, or in labor markets where crossing firm boundaries is not perceived as an important event with implications for professional identity. As our evidence suggests, professional regulation reinforces the constraining power of rivalry, as it increases the stakes of competition and the power of sanctioning.

The main limitation of our study is the unavailability of data on the remuneration of jockeys, as contracts between captains and jockeys are kept resolutely secret. Hence, we used proxies to account for differences in resource endowments between contrade, along with dyad fixed effects, controlling for unobservable time invariant differences in contrade resource endowments, and year fixed effects, controlling for changes in market opportunities and rewards. Future studies should explore in more depth the interplay of relational constraints and market incentives in labor markets.

Because of our theoretical focus and data limitations, we did not explore individual-level factors

that determine differences in the propensity to move to a rival. Future research should explore variation across actors—that is, why some and not others move to a rival. We also encourage analyses of other types of market exchange than mobility. Our conceptual model can be further tested by identifying relational gaps in networks of email exchanges, casual talk, or co-attendance at third-party events, among others. We also recommend using experiments to document with greater precision the consequences of rivalry beyond the focal dyad.

Managers are more accustomed to hearing about the advantages of alliances than those of rivalry, but our research suggests that rivalry can be a source of competitive advantage when it serves to hinder the mobility of high-performing employees or to strengthen relational factors in highly competitive markets for talent. By bolstering identification with an employer vis-à-vis rivals, rivalry affects career trajectories in ways that can yield performance benefits to firms in the form of stronger commitment and higher retention rates, facilitating the accumulation of tacit knowledge and preventing the leakage of firm-specific information to a rival through mobility.

Managers need to be aware of both the opportunities and threats associated with rivalry. If constraints on mobility facilitate the retention of employees, they may also make it more difficult to recruit from a rival employer, resulting in higher-than-the-market-rate job offers. A different threat is presented by the tendency of personal rivalries to escalate and spill over into domains of professional activity, thereby penalizing firm performance. The capacity of rivalry to diffuse within groups and across domains warrants the attention of managers, as it requires appropriate intervention to preclude the spillover of rivalry into adjacent social relationships or into work-related tasks.

Past scholarship suggests that cooperating with one's competitors is possible, and even desirable under some conditions (Ingram & Roberts, 2000). Emerging concepts, such as "coopetition," suggest that cooperation with one's competitors can be a potential source of competitive advantage. One can extend this reasoning to rivalry, arguing that cooperation should be even more advantageous when contributing to closing relational gaps. However, our theoretical framework and presented evidence imply that the logic of "coopetition" has limited relevance to rivalry. A principal requirement for pursuing cooperation between opponents is the accumulation of relational content, which is actively discouraged in rivalry by the system of relational constraints. Of

course, the very rarity of career moves between rivals enhances their value as a potential mediator. Yet another reason to wish that Romeo and Juliet's romance had had a happier ending.

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