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***Hold Your Horses: Temporal Multiplexity and Conflict Moderation in the  
“Palio di Siena” (1743-2010)***

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# ***Hold Your Horses: Temporal Multiplexity and Conflict***

## **Moderation in the “Palio di Siena” (1743-2010)**

### **Abstract**

The paper elaborates the concept of “temporal multiplexity”, defined as the overlaying of ties of different duration, such as transient employment and enduring organizational ties. This concept is instrumental in resolving long-standing challenges in network research, such as capturing the interplay between different levels of analysis or time horizons. This is made possible by longitudinal network and mobility data (1743-2010) from the “*Palio di Siena*”– the famous horse race in Siena, Italy. The outcome of interest is Palio-related collective violence. The analysis shows that relationally-loaded organizational ties of rivalry or friendship increase the likelihood of incidents, while mobility along the same lines reduces it. The results support sociological arguments that symmetrical social space of friendship or rivalry is conducive to conflict. Mobility is a factor of moderation – by connecting employers *within* the actor and transferring relational content between them, it creates misalignment between the assumption of a role and fulfillment of its expectations. Mobility relaxes the relational constraints of jockeys, reducing their compliance with aggressive demands. The uncertainty resulting from mobility may have a collective benefit that is ignored by employers – the moderation of conflict.

Keywords: temporal multiplexity, career mobility, networks, rivalry, alliances, conflict, history, Siena.

## Introduction

Representing the dynamic nature of relationships is essential in network research. Networks build up as layer upon layer, with past interactions enabling and constraining current exchanges (Kilduff, Tsai and Hanke 2006, Quintane and Carnabuci 2016). A key challenge in this regard is explaining how the temporal embeddedness of relations defines a dynamic social space, empirically capturing it through the sequence of relations over time (Moody, McFarland and Bender-deMoll 2005).

In this paper we posit multiplexity as instrumental in addressing this challenge. Multiplexity – the existence of “multiple bases for interaction” with network contacts (Wasserman and Faust 1994) is pervasive. Most relationships overlay exchanges in different domains, such as friendship between co-workers (Shipilov and Li 2012, Shipilov, Gulati, Kilduff, Li and Tsai 2014). Multiplexity is typically presented as a reinforcing factor – by adding depth to relationships (Smith and Papachristos 2016), it reduces their vulnerability to dissolution (Gould 1991, Kadushin 2012) and enhances network resilience (Kenis and Knoke 2002). But the emphasis on its reinforcing aspects may be theoretically and empirically constraining. As Kuwabara, Luo and Sheldon (2010) observe, the concept is theoretically richer than how it is generally used, inviting more attention to multiplexity as a process.

A valuable guideline in this regard is provided by Shipilov et al. (2014), referring to “temporal multiplexity” to denote the overlaying of relations over time. The assumption is that relational events have a residue that extends beyond their occurrence (Moody et al. 2005). For example, a personal tie resulting from a career move between two firms may lead to the creation of a buyer–supplier tie (Somaya, Williamson, and Lorinkova 2008). In the interpersonal context, “ghost ties” to individuals who have left an organization may exert long-lasting influence (Kilduff et al. 2006). What is common to these cases is the enduring influence of a past tie, even if formally dissolved. Past research suggests that the overlaying of ties of different duration may modify network processes and outcomes (Ahuja et al. 2012, Quintane and Carnabuci 2016), but provides little evidence for it. Accordingly, Shipilov et al. (2014: 455) call for research that explores how temporal multiplexity shapes behavior and illustrates the mechanisms involved in the dynamic overlaying of distinct types of ties. This is the objective that motivates our analysis.

Our main contribution is in clarifying and extending the concept of temporal multiplexity to

facilitate its application in network and organizational scholarship. If prior definitions of temporal multiplexity refer to the influence of past (discontinued) ties on present ties at one level of analysis (e.g. Shipilov et al. 2014), we extend the concept to different levels of analysis (i.e. individual and organizational networks) and different time scales (i.e. different rates of tie formation and decay). Defining temporal multiplexity as the overlaying of relationships of different duration, we examine how the co-existence of transient employment relationships and enduring organizational relationships between employers affects a key relational outcome – the escalation of conflict. To this end, we use longitudinal network and mobility data from the “*Palio di Siena*”, the famous horse race in Siena, Italy. Held since the Middle Ages, the Palio features intense, long-lasting rivalries and alliances between city neighborhoods (Silverman 1979, Dundes and Falassi 1975). The careers of jockeys unfold through sequences of temporary moves that overlay personal ties onto organizational ties of alliance and rivalry.

The analysis of the overlaying of transient employment ties onto enduring organizational ties is important for two reasons. First, by featuring temporal discrepancies, it introduces tension and misalignment, allowing to better adapt the concept of multiplexity to conditions of uncertainty and risk (Smith and Papachristos 2016: 20). The results indicate that temporal multiplexity promotes the misalignment between the assumption of roles and the fulfillment of expectations associated with them, reducing the propensity to execute conflict-inducing demands that target a former employer.

Second, temporal multiplexity is useful in capturing multi-level dynamics, exemplifying the benefits of simultaneously considering processes at the individual and network level (Ibarra, Kilduff and Tsai 2005, Moliterno and Mahony 2011, Cattani, Ferriani and Lanza 2017). The analysis attests that the interplay between individuals and groups and between collaboration and antagonism is vital to understanding social systems (Simmel 1955, Ibarra et al. 2005). This interplay transpires in the finding that relationally-loaded organizational ties lead to the escalation of conflict, while career moves along the same lines have a tempering effect. What makes the domain of conflict appropriate to our research objective is its relational and multi-level nature – networks of social relations link macro-level conflict to local, individual interactions (Gould 2003, p. 151). Conflict is pervasive in business, ranging from litigation between firms, through “cutthroat” competition to public campaigns to forestall takeovers

(Granovetter 1985, p. 501). Mobilizing ties beyond the focal dyad (Sytych and Tatarynowicz 2014) and across levels of analysis (Grohsjean, Kober and Zucchini 2016) is crucial in forestalling the escalation of conflict between organizations.

### **Multiplexity and Conflict**

A basic sociological observation is that social conflict is a relational phenomenon (Simmel 1955, Collins 2012) emerging “*deterministically from the web of relationships governing social life*” (Gould 1999: 358). A key relational factor of conflict is the interdependence of collaborative and antagonistic relationships (Gould 2003). The complex, non-linear nature of this interdependence (Sytych and Tatarynowicz 2014) explains the difficulties in modeling the escalation of conflict from individual to collective levels – a theoretical problem with no straightforward solution (Gould 1999, 2000).

The nature of these difficulties can be illustrated through the operation of a core mechanism of conflict regulation, based on network multiplexity. There is evidence that by stacking different types of relationships, such as affective and professional ties, multiplexity provides a foundation for trust that can reduce uncertainty, increase reciprocity and mobilize collective action (Brass, Galaskiewicz, Greve and Tsai 2004, Kadushin 2012, Gondal and McLean 2013). By enhancing alignment between the interests of parties and between formal and informal networks, multiplexity reinforces conformity to exchange norms (Uzzi 1996, 1999) and to demands for collective solidarity (Gould 1991). If it succeeds at intimidating one’s adversaries into retreating, the mobilization of support may lead to the prevention of escalation of conflict (Granovetter 1985, Collins 2012, Gould 1999, 2000).

However, studies also demonstrate that by reinforcing relationships, multiplexity can be a factor of polarization, locking actors into fixed roles and imposing on them demands for collective solidarity (e.g., Padgett and Ansell 1993, Gould 1999). As Gould (1991) shows, the multiplexity of social networks can contribute to the escalation of collective violence, as it reinforces the loyalty of participants. In conditions of polarization, network multiplexity encourages the manifestation of collective solidarity, thereby reducing the ability of actors to deviate from role expectations that contradict their individual interests (Gould 1999, 2000). Thus, non-conformity to role expectations and demands for solidarity is an important precondition for de-escalation of conflict (Gould 2000).

We suggest that one way to resolve this conundrum is by introducing mobility in a framework that is still focused on the overlaying of ties of comparable time horizons. To this end, we elaborate the concept of temporal multiplexity – the overlaying of transient employment relationships onto cooperative or antagonistic inter-organizational relationships. This type of multiplexity is distinct from the classic one, as it features discrepancies in the duration of overlaid relationships. As observed by Kuwabara et al. (2010), the tendency to examine ties of similar nature or duration in multiplexity accounts carries the risk of obfuscating possibilities for distinct types of relationships to combine and blend. We explore these possibilities by analyzing career mobility and the overlaying of transient employment onto enduring organizational relationships.

It is recognized in network scholarship that career mobility represents a key intersection of personal and organizational networks (Shipilov et al. 2014). Studies show that mobility creates short-term volatility in networks that is disruptive of routines (Broschak 2004, Wezel, Cattani and Pennings 2006), but may be beneficial in the long run by embedding the past employer in a mobility network, where information is shared more broadly (Dokko and Rosenkopf 2010, Shipilov et al. 2014). What is less recognized, however, is that by spanning personal and organizational networks, mobility also creates transient ties between organizations, providing an opportunity to understand how temporal discrepancies may create tension at the individual and organizational levels. We still have limited understanding of how ties at different levels of analysis or with different time scales (speed of evolution) coexist and influence each other.<sup>1</sup>

Mobility is a context that lends itself particularly well to representing the duality of network affiliation (Breiger 1974). When changing jobs, an employee creates a relationship between past and present employers. But a career move simultaneously connects employers *within* the actor, overlaying the new affiliation on top of the old one. This duality is illustrated in Figure 1. A triad is formed upon the completion of a career move, connecting the employee to both the current employer  $j$  (“present” personal tie) and the past employer  $i$  (“past” personal tie). Employers  $i$  and  $j$  may in turn be connected through an organizational tie (e.g., an alliance or a rivalry). The represented configuration of temporal

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<sup>1</sup> We are grateful to a reviewer for this observation and for focusing our attention on this aspect of multiplexity.

multiplexity features two types of temporal overlay: between personal and organizational ties (*a1* and *a2*) and between present and past personal ties (*b*). If in practice these are interwoven, it is important to differentiate between them for analytical purposes. In this framework the mobility of an employee connects her present to the past, but also overlays personal on organizational relationships (*a1* and *a2*). Hence, employees need to align past and current affiliations with the extant organizational relationship between employers.

-----*Insert Figure 1 here* -----

The triad represented on Figure 1 creates preconditions for misalignment between past and present affiliations, particularly when past and present employers are connected by a collaborative or antagonistic organizational tie. Situations of having a positive experience with a former employer, who is a rival of the current one or negative experience with a collaborator of the current employer are a source of tension for employees (Clark 1984, Conroy and O’Leary-Kelly 2014). Research attests that this kind of tension is not rare, and that success at managing multiplex ties requires reconciling conflicting role expectations that may foster misalignment between affective components of personal relations and the pursuit of instrumental goals (Verbrugge 1979, Ingram and Zou 2008).

Misalignment is generally presented in negative light, but in our study it is accorded a positive function as a factor of conflict de-escalation. The overlaying of career mobility on organizational networks may create tension between the demands of the employer and the interests of the employee, thereby reducing the “ecological control” (Padgett 1981) over individual behavior. We contend that the misalignment of interests has a positive function when serving to reduce role conformity – the probability that actors conform to role expectations when so demanded. As we intend to demonstrate, this misalignment makes actors less willing or less capable of implementing the conflict-inducing demands of their employers, thus reducing the likelihood of conflict.

These expectations are aligned with the view that behavior is shaped by the structural context within which individuals are embedded, but also by idiosyncratic cognitions and memories (Ibarra et al. 2005). Networks exist simultaneously as layers of relations and cognitive constructs, constituted in the minds of individuals as memories of past states and hopes of future states (Emirbayer and Mische 1998). In this logic, the past and present have a cognitive link – the history of networks is retained in

the selective memories of its members, which conditions network-level outcomes (Kilduff et al. 2006). This link is manifested when connections to past nodes continue as an active force within the network, even after the end of the relationship (Ibarra et al. 2005, Kilduff et al. 2006). For example, ties to past employers may continue exerting influence after the termination of employment (Godart, Shipilov and Claes 2014). As scholars observe, career mobility is rarely unproblematic; the process of “becoming an ex” is not a matter of adapting to a clear role, but a process of negotiation or reconciliation between work-related identities (Ebaugh 1988, Ibarra 2003). These transitional states represent a valuable source of insights for scholarship on networks (Ibarra et al. 2005).

The concept of temporal multiplexity is well-suited to these transitional states. Its significance lies in providing a concise representation of the dynamic and multi-level nature of networks. These are inherently related – as Kozlowski and Klein (2000) note, time is an important, but still underdeveloped component of multilevel models. In this light, the analysis of temporal multiplexity can be valuable in identifying how bottom-up effects of career mobility impact higher-level outcomes. As an illustration of the potential of this approach, we develop a set of expectations in the context, mixing theoretical insights and field evidence to elucidate how career moves along relational lines moderate the conflict-inducing demands derived from enduring inter-organizational relationships of rivalry and alliance.

### **Context**

The *Palio di Siena* takes place twice a year (July 2<sup>nd</sup> and August 16<sup>th</sup>), featuring ten horses and riders, representing ten of the seventeen neighborhoods (“contrade”) in Siena<sup>2</sup>. The race circles three times the tuff-covered Piazza del Campo, lasting for about ninety seconds. The Palio can be traced back to the early 13<sup>th</sup> century, even if it is generally acknowledged that the first modern Palio took place in 1656. A second Palio in the year was added in 1701, while in 1729, the city’s governor, Violante of Bavaria, issued a decree restricting to ten the number of participating contrade and defining formal boundaries for all contrade. For each Palio, the seven contrade that did not take part in that month of

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<sup>2</sup> The contrade are: Aquila (Eagle) Bruco (Caterpillar) Chiocciola (Snail) Civetta (Owl) Drago (Dragon) Giraffa (Giraffe) Istrice (Porcupine) Leocorno (Unicorn) Lupa (She-Wolf) Nicchio (Seashell) Oca (Goose) Onda (Wave) Pantera (Panther) Selva (Forest) Tartuca (Tortoise) Torre (Tower) and Valdimontone (Ram).

the previous year are automatically included and three more are chosen by lot. This Palio format has remained unchanged ever since, which is why we had the 1730s as a starting point for data collection.

The first major event in the Palio is the *tratta*, the choosing of the horses. Horses are offered by private owners and are selected by the neighborhood captains after trial races. Upon selecting ten horses, a publicly-held lottery assigns them to *contrade*. After the lottery, the captains select the jockey competing for their neighborhood through negotiation. The jockey has only a few days to practice with the horse, during six trial races. The race is preceded by a pageant, the *Corteo Storico*, featuring flag wavers in medieval costumes. Nine horses are lined up at the start line in an order decided by lot, while the tenth horse (*rincorsa*) waits outside. The race begins when the *rincorsa* starts his run and the front rope holding the horses is dropped. The first horse to cross the finish line is declared the winner (even if it does so without its jockey) and the *contrada* is awarded a banner of painted silk (the Palio).

The *contrade* were originally designated in the Middle Ages to supply troops to the military companies hired to defend Siena from nearby city-states. The *contrada* is a basic unit of Siena's social structure – a tight-knit local community with established territorial boundaries, a seat of government, its own church, museum, hymn, motto, patron saint; it owns property, collects membership dues and organizes diverse social activities. A Senese does not join a *contrada* but is born into it. The *contrada* is the center of social life for its members. As a combination of a mutual aid society and a social club (Dundes and Falassi 1975) it cuts across economic and social barriers – the shoemaker socializes with the factory owner. Each *contrada* has a distinct identity that it imparts to its members, conveyed through its symbol animal, colors and songs. A sense of belonging is cultivated in a *contrada* member through various socialization practices since the day of birth.

The Palio constitutes the public arena in which the identity of each *contrada* is affirmed. There is wide agreement among residents and researchers that the Palio is too serious, multi-dimensional and identity-creating to be compared to sports (Drechsler 2006: 118). It is an ever-present topic for the Senese and the focal point of *contrada* activity, especially as the summer approaches. It resembles a Carnival – the period when disruption and competition are admitted to a greater degree than during the rest of the year (Warner 2004: 154).

The system of alliances and rivalries is vital to understanding the principles governing the contest on the race track. Unlike in sports, alliances and rivalries in the Palio are formally declared, requiring a vote by the members of each *contrada* to be both initiated and terminated. Their origin lies in the political agreements between city-states in medieval Italy (Silverman 1979)<sup>3</sup>. Rivalries are long-standing and intense, involving mostly adjacent *contrade*. They are fundamental to the identity of each *contrada*. The retired Jockey#3 told us that: “*I still remember the first time I was employed by Aquila, they took me to Pantera and told me – this is our rival, this is the first thing you should know*”.<sup>4</sup> Alliances are pacts between neighborhoods, featuring obligations, such as regular visits and display of the flag of the ally during festivities. An alliance implies preferential treatment in Palio-related agreements between *contrade*. Another informant, Lieutenant#1, explains: “*alliances are typically enduring relationships, long lasting and sealed in the 18<sup>th</sup> or 19<sup>th</sup> century. Because they are old, they are typically deeply felt by the people*”.

The Palio is a competition carried out through tactics of negotiation. The failure of one’s rival is celebrated almost as joyfully as one’s own victory, while *contrade* not participating in the race or those assigned a weaker horse, do their utmost to thwart the participating rival. Each *contrada* devises a strategy for facilitation and obstruction executed through complex dyadic arrangements (*partiti*). Deals include, for example, pulling or pushing other jockeys, whipping another horse or impeding the start of a rival. Formal regulations exist, but in reality, few things are forbidden. Jockeys use a range of means to disrupt the movement of other horses or to obstruct other jockeys. In conditions where rival *contrade* hinder each other by any means, conflictual episodes on and off the race track are inevitable. These incidents may not have the same intensity as those of medieval family feuds, but on occasions they approach that level, with outbreaks of violence between members of rival *contrade*

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<sup>3</sup> Many rivalries date back centuries – for example, archival evidence attests that the rivalry between Torre and Oca dates back to July 26<sup>th</sup>, 1671; while the antagonism between Chiocciola and Tartuca can be traced to a dispute that occurred on July 27<sup>th</sup> 1686 (Dundes and Falassi 1975: 51).

<sup>4</sup> We masked the names of all our interviewees (e.g. Jockey #1). This is 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 damaging relationships with employers. We compiled a list with the names of all our interviewees and submitted it to the editor in charge.

(Dundes and Falassi 1975: 50). In the words of Silverman (1979: 419) the Palio is a “*form of regulated conflict that is structured like a game*” – a social system where the threat of conflict is ever present.

### **Jockeys’ careers in Siena**

Whether this threat is realized depends critically on the jockey – his cooperation in implementing the strategy of the *contrade* is essential. It is a peculiar aspect of the Palio that the success of pre-race arrangements hinges on the loyalty of an outsider. Jockeys are mercenaries, hired to represent a *contrada* for a specific Palio. However, they are also expected to behave as if they *were* members of the *contrada* for the duration of this Palio *only*.

This contradiction represents a fundamental source of uncertainty: when a *contrada* hires a jockey, it can never be certain of his commitment, as he may offer his services to the highest bidder or collude with other jockeys to rig the race.<sup>5</sup> This uncertainty is inherent in “principal-agent” configurations, where the inability of principals to monitor agents creates incentives for them to further their own interests or disobey orders (Erikson and Bearman 2006). The main problem in the “principal-agent” literature concerns the incentives and monitoring systems needed to ensure alignment between the “public” and “private” interests of agents (Jensen and Meckling 1976, Carlos and Nicholas 1993). We are interested in a related, but distinct problem – how the misalignment between these interests regulates conflict in the race.

The commitment of jockeys is expressed in two principal ways – in trying hard to win and in fulfilling their employer’s demands. In the words of Jockey#2: “*Every jockey, when he wears a contrada’s uniform, acts in the interest of the contrada, which gives him orders to follow and guarantees. The jockey follows the orders.*” Another former jockey, Jockey#5, told us that “*you cannot be a jockey in Siena if you do not know how to handle relationships with contrade and you are not ready to do whatever [the contrade] ask you to do*”.

As *contrade* try to optimize the fit between jockey and horse, jockeys regularly move between *contrade*. Therefore, careers constitute a sequence of short, but emotionally intense relationships between *contrade* and jockeys, where past and future employment co-exist in temporal proximity. In

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<sup>5</sup> Not surprisingly, the Sienese refer to the Palio line-up as ‘*I dieci assassini*’ or “the ten killers”.

the words of Jockey#6: *“Everybody believes in you, from the child to the 90-years old. They are good at instilling in you a strong motivation, without too much pressure. When you wear that uniform, you are one of them.”* As Dundes and Falassi (1975: 72) observe: *“...in past years [the jockey] may have represented other contrade and in future years he may likewise represent other contrade. But for this [Palio] all of the hopes of the contrada rest with him.”*

The same source documents the weight of expectations on jockeys, and the discontent provoked by the perceived lack of effort or suspected non-compliance with orders. In their fleeting nature and short duration, employment spells are reminiscent of weak ties, but on the core dimension of emotional intensity (Granovetter 1973) they are “stronger” than weak ties. As confirmed by our fieldwork, employment relationships often become overlaid with social content that endures even after the end of the relationship. Jockey#2 told us that during his career he has *“developed personal friendships [with his employers] that are very important still nowadays”*. Another Jockey (#9) states in an exchange with a journalist: *“I follow the race even when I am not part of it, and I go and chat with contrada members of Oca and Lupa. I have strong ties with these contrade.”* As these statements illustrate, within circuits of professional mobility some contrade matter more than others to a jockey. As Jockey#1 explained to us, a jockey tends to have *“tighter relationships with 3-4-5 contrade that are the reference point”*. The emotional “load” of these ties and memories of positive experiences with a contrada may influence his actions toward that contrada when the jockey is representing *other* contrade. In our interviews, employers referred to these situations pejoratively as jockeys’ *“wearing another uniform underneath”* – a metaphor for the process of overlaying that we defined as “temporal multiplexity”.

This overlaying tends to be perceived as negative by captains as it may interfere with the execution of their strategic plans. Lieutenant#1 articulated this concern well: *“Typically the interests of the jockey and of the contrada are well aligned, so there is no problem to deal with. However, when the relationships of the jockey and the relationships of the contrada are not aligned, things become more complex [to manage]”*. These circumstances pose challenges for captains but may be advantageous to jockeys. For example, in celebrating his win in the race, Jockey#6 thanked *“...those who have been close to me in the past, even amongst the contrade that unfortunately did not run this*

*year, but that stay close to me – I thank them too, because [my win] is also thanks to them.*” As this statement implies, past affiliations endure well after their termination. Employers are apprehensive of the “shadow of the past”, cast by past relationships and experiences of jockeys. The next section establishes the theoretical significance of this overlaying process, linking it to the rate of occurrence of Palio incidents. Our key insight is that the uncertainty resulting from career mobility may have a collective benefit that is ignored by the employers – the moderation of conflict.

## **Hypotheses**

### ***Relationally-loaded ties and conflict escalation***

In conceptualizing relational factors of conflict regulation, scholars differentiate between two types of ties – relationally-loaded and neutral<sup>6</sup>. The former are enduring ties characterized by their “embedded” nature and emotional intensity (Granovetter 1985, Uzzi 1997). They are typically symmetrical, based on friendship or antagonism (Simmel 1955). Observations across contexts attest to the link between relational symmetry and the likelihood of conflict, which tends to occur between people connected to one another (Cosser 1956). Thus, Gould (2003: 86) documents a strong association between symmetry in a dyad and the likelihood of a dispute.

This association is easily identifiable in the case of relationships of rivalry. Rivalry is marked by intense competition for resources (Kilduff, Elfenbein and Staw 2010). One of the captains we interviewed attributed the occurrence of incidents in the July 2015 Palio to the presence of seven contrade with at least one rival on the race track. According to him, such high density of mutual antagonism creates an environment that is propitious to incidents. He also remarked that escalation was likely to spill over into the following Palio – *“We will have nine rivals [on the race track] and each will devise imaginative ways to block or harm one’s rival [in August]. This is how the Palio works and how it should be”*. An informant interviewed in August 2017 confirmed that a contrada can be targeted by a rival even when the rival is not participating in the race: *“Tomorrow, Nicchio is doing something [to prevent Valdimontone from winning]: they will go to another contrada and offer an*

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<sup>6</sup> This distinction maps onto the classic dichotomy between “embedded” and “arm’s length” ties (Granovetter 1985). Neutral ties designate a connection between parties that is devoid of strong relational content. This can be a market exchange, an acquaintance or, as in our case, it may refer to the link created between two (non-rival and non-allied) contrade when a jockey moves from one to the other.

*amount to make their horse collide with that of Valdimontone*". Jockeys that we interviewed confirmed that rivalries are conducive to violence. For example, Jockey#5 told us that "*Rivalries influence what contrade ask you to do. Because when you go on the race track, and the rival is there, you are asked to do different things, not only to win*". The propensity of rivalry to lead to incidents may handicap jockey performance – two star jockeys we interviewed recognized that they try to steer clear of rivalries in their choice of employer, to increase their chances of winning the race.

The role played by cooperative ties in conflict is more contested in the literature (e.g., Collins 2012, Gould 2003). In disputes actors tend to call on their allies as a way of demonstrating that they are not alone. Reliance on allies may succeed in forestalling escalation when interpreted as a clear demonstration of intent, conveying the message that violence will be collective (Gould 1999, 2000). In this perspective, alliances can prevent the escalation of conflict when serving as a credible signal to adversaries of broader involvement. But the mobilization of allies can also have the inverse effect<sup>7</sup>, when the demonstration of group solidarity is not deemed credible or when it encourages the other side to retaliate by mobilizing its own allies (Gould 2003). As sociological research attests, conflict propagates through chains of social relations, when actors mobilize their alliances, forcing neutrals to pick sides and escalating tension (Collins 2012).

We expect that the second scenario is more likely to occur in our context, as adversaries are familiar with each other and as information asymmetries conducive to intimidation are attenuated in a race that is regularly contested. Our fieldwork suggests likewise: only one informant recalled a case where the activation of an alliance of four contrade prevented a brawl to escalate by withdrawing three horses and jockeys from the race in response to threats by a rival to the administrator of the race. Consistent with past studies (Gould 1999, 2000, Collins 2012), we argue that the risk of involvement in an incident augments with the number of one's allies, as it makes it more likely that a contrada *would* have to intervene on behalf of one of them in display of solidarity. As Bearman (2003) points

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<sup>7</sup> The complex, non-linear dynamic of escalation of conflict articulated in Gould (1999, 2000, 2003) can be summarized with an example. A street-wise kid knows not to pick on those with extended families, including brothers or cousins, as this increases the probability of running into trouble with another member of the family. However, it also means that for any family member the probability of running into trouble is overall greater, because of the necessity to intervene on behalf of other members. Hence, alliances can both prevent incidents, when intimidating others into backing off in disputes, but also encourage them when these become collective.

out, it is the “stickiness” of these relationships that predisposes to conflict – the fact that one is locked into a fixed position or role (friend or rival) with an associated set of expectations. That these expectations are constraining in nature and weigh heavily on Palio preparation is attested to by the captain of Tartuca in 1947: *“The weight of the alliance with Oca is a burden! I wish I could focus all my energy on the rival, Chiocciola, but I have to take into account all the moves of all the contrade belonging to the opposite camp!”* (Luchini, 2010: 43). Conflict escalates when actors conform to expectations of group solidarity or when their non-conformity is perceived as betrayal of norms of friendship (Coser 1956, Gould 2003). As Coser (1956) contends, antagonism is a central part of intimate social relations (i.e. of rivalry and friendship) and a by-product of cooperation and frequent interaction.<sup>8</sup> Hence, we expect that relationally-loaded ties (between friends or rivals) raise the stakes and emotional intensity in the race, making more likely the occurrence of incidents.

*Hypothesis 1: The probability that a contrada is involved in a conflictual episode increases with the number of relationally loaded ties (alliances, rivalries) maintained by that contrada*

#### ***Mobility ties and conflict moderation***

If relationally-loaded ties facilitate escalation, we expect career mobility along the same lines to have a moderating effect. Mobility poses the issue of commitment for jockeys in a matrix of relatively recent past affiliations. It leads to the overlaying of affiliations that co-exist within jockeys. We argue that this co-existence reduces the willingness to endorse conflict-inducing demands. Two mechanisms are expected to feature here – the transfer of relational content and the attenuation of social control.

Career mobility serves as a conduit of relational-emotional content, carried over upon the termination of employment. Actors carry the baggage of past ties into the new workplace (Godart et al. 2014), filing away emotional attachments for extended periods of time (Granovetter 2017). Our fieldwork provides ample evidence for relational endurance. For Jockey#1: *“even when you provide a service [to a contrada] for a single race, you create ties that last well beyond the single race”*. For Jockey#7: *“the ties you create with a contrada, they last forever, so even if the people in charge of the*

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<sup>8</sup> For Coser (1956) in relationships in which individuals are deeply involved, both feelings of attraction and hostility are likely to arise. The closer the relationship, the greater the affective investment and the potential for emotional ambivalence. In agreement with Gould (2003), conflict in these conditions tends to be more intense.

*contrada change, you keep the tie with the contrada for your entire career*". Similarly, Jockey#6 recognizes that "*with the contrade where I did well, I have ties that last forever*".

One consequence of the overlaying of past on present employment ties is that past emotional attachments may interfere with the fulfillment of tasks required by current employment. Sociologists observe that emotional attachments may override the self-interest of parties (Uzzi 1997). As Sgourev and Zuckerman (2011) show, the addition of social elements to self-interested relations increases the asymmetry between assuming a role and fulfilling the expectations linked to it. Career mobility can lead to psychological discomfort and to difficulties reconciling past with present affiliations (e.g., Conroy and O'Leary-Kelly 2014). These difficulties are likely to reduce commitment to one's employer, particularly when the current affiliation is perceived as inconsistent with a past one.

Transitional states between work roles are most conducive to psychological discomfort and uncertainty in highly-charged social environments and complex relational space (Ibarra et al. 2003). At some point in their careers, jockeys are likely to race for a rival of a *contrada* for which they had raced before, or an ally of its rival. In such cases, compliance with demands by the new employer may be perceived as incompatible with previous affiliations, resulting in feelings of uneasiness. This is well articulated by Jockey#11: "*Given that I regularly worked for Bruco, it is quite normal [that when I raced twice for Oca] I felt ill at ease with it. Bruco has intimately considered Oca as a rival, even if it is not formalized*". A structural position between rivals is intrinsically contradictory, necessitating maneuvering to avoid clarification of commitment (Padgett and Ansell 1993). The existence of contradiction contributes to making the actor less reliable in achieving goals that target proximate others or less prone to fulfilling role expectations *unquestionably*, in the manner required for the escalation of conflict (Collins 2012).

The second mechanism concerns the attenuation of social control over the jockey. By moving between *contrade*, jockeys create trajectories that connect past and present employers. As Kilduff et al. (2006: 1040) propose, to the extent that actors retain ties to former employers, the strengthening of past ties will restrict the extent to which the current affiliation can shape cognition and behavior. The argument that mobility imparts autonomy to individuals echoes key tenets of the sociology of Simmel (1955). By linking multiple networks or remote social locations, individuals differentiate themselves

from others, creating trajectories that afford greater leeway for the construction of identities (Simmel 1955, 1971).<sup>9</sup> This development generally reduces the extent to which others (i.e. the employers) can exercise control over the individual (Simmel 1955). As DeputyPrior#1 observes: *“The assumption in Siena is that jockeys are not reliable. You cannot always control them. In Siena, jockeys and hookers did not have the right to vote. The same lot”*. From this angle, what brings jockeys and the other category together is their accelerated mobility between employers, which contradicts the characteristically long-term nature of relationships in Siena. The issue of control is primordial – both in granting voting rights and ensuring the loyalty of jockeys.

Our interviews confirmed the inherent tension between the desire of employers to obtain the compliance of jockeys in executing orders and the desire of jockeys to maintain freedom of choice as to their performance and career mobility. Jockey#6 shared with us that: *“[as jockeys] we want to maintain our own freedom, to have more degrees of freedom on the race track or move to the best horse”*. Jockey#5 identified the source of tension as: *“you must be ready to do what [the contrade] ask, but also be mindful of what is good for you”*. This tension is heightened in cases of mobility across rivals or allies, as the relational “load” of these ties tends to constrain agency.

If moves between allies are facilitated by cooperative relationships, our fieldwork suggests that they are not always harmonious, privileging organizational over career considerations. It is not unusual for a contrada to lend a capable jockey to an ally when allotted a horse with a slim chance to win. Jockey#1 told us that *“I would gladly go where the contrade I have ties to suggest”*. But others attest that pacts between allies may undermine the performance of jockeys by restricting their leeway to join a contrada with a better horse, generating resentment and reducing the willingness to execute unquestionably orders. According to Jockey#3: *“if I, contrada x, have an alliance with contrada y, then I prefer to send you to y, even if you would prefer that other contrada, you must go there, and then you may be rightly upset and still you do your best, but you may be less successful at doing it...”*

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<sup>9</sup> “The narrower the circle to which we commit ourselves, the less freedom of individuality we possess... if the circle in which we are active and in which our interests hold sway enlarges, there is more room in it for the development of our individuality” (Simmel 1971, p. 255).

*because we are human, if you send me somewhere else, then I do what I can, but I am not happy about it”.*

The misalignment between role expectations and their fulfillment is more transparent in the case of mobility between rivals. Jockeys attest to their reluctance to execute orders that they deem as incompatible with their relational history. Jockey#1 articulated this well: *“I do what they ask me, but I cannot do what they ask me if I have ties with the other side, we are human”*. Jockey#7 made a similar observation: *“it is normal that, if you are running for a contrada, and there is another contrada on the race track that you have a tie with, such as you ran a Palio with them in the past and it worked out well, you left a good memory, they left you a good memory, then you keep them in your heart and would not act against them if you were both happy”*.

Navigating complex patterns of mobility, such as those between rivals or allies, is typically accompanied by tension and conflict that are likely to decrease the readiness to comply with orders contradicting key relational aspects of personal identities. Our fieldwork suggests that jockeys have an intuitive understanding of the constraining power of “temporal multiplexity” – the overlaying of personal on organizational relationships. Thus, Jockey#2 observed that: *“when you overlay too much the personal relationships and the professional side, you run the risk of being constrained in your professional conduct on the race track or in your [career] moves”*. This constraint may contribute to disrupting the strategies of contrade on the race track or the careers plans of jockeys, but has positive externalities when serving to prevent violence. If relationally-loaded ties predispose to the occurrence of incidents by locking actors into fixed roles with associated demands, we expect that career mobility along the same lines facilitates moderation through the transfer of relational content and attenuation of social control over jockeys. In this perspective, mobility matters by building bridges between rivals and by fostering misalignment between allies. Such transitional states are conducive to doubt and are expected to reduce the willingness to execute unquestionably conflict-inducing orders.

*Hypothesis 2: The probability that a contrada is involved in a conflictual episode decreases with the amount of experience of its jockey with allies/rivals of the contrada.*

## **Data and Variables**

We draw historical data on the Palio from the transcription of documents from the archives of the municipality of Siena and of individual neighborhoods by Orlando Papei (2012) and Sergio Profeti (2012) as well as from books recording the history of races over the last three centuries (Filiani and Zaffaroni 2002, 2003, Lombardi 2002, Giannelli and Picciafuochi 2006). We conducted fieldwork in Siena in the summers of 2013 and 2016 and in May 2018, attending the Palios in August 2013, 2016 and 2017 and those in July 2015, 2016, 2017, and 2018. We conducted thirty-two interviews with key informants, including active and retired jockeys, captains, priori, lieutenants and journalists that cover the race. We also accessed and processed seventy-five interviews with jockeys and contrada captains, provided to us by a local journalist. Field data provided additional insights on the theorized mechanisms and complemented the findings from the quantitative analyses.

Drawing on detailed published records, we compiled a list of conflictual episodes (incidents) formally acknowledged and reported by at least one historical source covering the Palio<sup>10</sup>. An incident is an instance of conflict where one contrada – its jockey or members, engages in an altercation with one or more other contrade, jockey or members before, during or after the race. Incidents may be initiated by one or more parties. They all entail the occurrence of violence and provoke significant losses (injuries, penalties, exclusion from the race or even casualties) for the neighborhoods involved. A formal rivalry is not a necessary condition for an incident. Several incidents in our dataset have occurred between neutral neighborhoods. Table 1 provides examples of representative incidents included in our analyses.

-----*Insert Table 1 here* -----

Consistent with Gould (1999) our dependent variable is the likelihood that contrada  $i$  is involved in at least one incident related to Palio  $j$  at time  $t$ . In recognition of the central role of the Palio in the organization and social life of Siena (e.g., Biliorsi and Brogi 2011), we chose the Palio as our temporal

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<sup>10</sup> Incidents occur on and off the race track. We combined the two types of incidents because our fieldwork and historical research (Biliorsi and Brogi 2011) suggest a tight link between them – off-track incidents typically occur in response to what happened on the track. When the race is uneventful in terms of incidents, contrade members have little reason for contestation or discontent, and are less likely to engage in or provoke skirmishes with members of other contrade.

unit, rather than the calendar year<sup>11</sup>. We decided against the estimation of a dyadic-level model (the probability of an incident occurring between any two contrade) for both substantive and empirical reasons. First, as Gould (1999) demonstrates, conflict and violence cannot be reduced to a paired relation. This is corroborated by examples of conflictual episodes that are not dyadic (Table 1). Accordingly, our conceptual focus is on the conditions making a contrada more likely to be involved in an incident, rather than which particular contrada it would be involved with. Second, incidents are rare events. Estimating the models at the contrada-Palio level, rather than at the dyad level, yields greater statistical power. We return to the operationalization of the dependent variable in the Robustness section, where we conduct additional analyses based on the types of incidents.

To test the hypothesized effects of inter-organizational ties, we collected information on the duration of all formally declared alliances and rivalries between 1743 and 2010. We capture relationally loaded inter-organizational relationships by counting the *Number of Allies* and the *Number of Rivals* of each contrada for each year. For the analysis of mobility, we reconstructed the careers of 480 jockeys over the period 1743-2010, recording the number of previous affiliations with allies (*Experience with Allies*) and rivals (*Experience with Rivals*) of the current employer. Measures based on repeated interactions reflect the strength of the relationship between a jockey and the ally (rival) of his current employer (e.g., Uzzi 1997).

During the period 1743 to 1762, information on jockeys is missing for several contrada-Palio pairs. We use this period to compute pre-sample independent variables, beginning our estimation in 1762. We include several contrada-level factors that may affect the propensity of (the members of) a contrada to engage in conflictual episodes. We control for the number of Palios that a contrada participated in (*Contrada Experience*), as the probability of involvement in an incident increases with Palio participation (as opposed to remaining behind the scenes). We also control for the proportion of races won by each contrada (*Contrada Previous Win*), as a contrada that has not won a race for a long time experiences stronger performance pressure and may be prone to engaging in conflictual episodes.

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<sup>11</sup> In unreported analyses, we also aggregated the data at the contrada-year level and repeated our analyses using a Poisson specification. Results remained unchanged.

We also control for relevant jockey-level factors. For instance, jockeys' experience is likely to affect their inherent propensity to engage in conflictual episodes. Inexperienced jockeys are prone to take risks in the race to enhance their reputation and to attract the attention of the captains of the wealthiest neighborhoods. We control for the number of races run by a jockey (*Jockey Experience*). Some jockeys ("*Fantino di Contrada*"), establish long-term contractual relationship with a contrada. These contracts are designed to align the interests of the principal (the contrada) and the agent (the jockey). The contract restricts the potential career moves of the jockey, who agrees to race only for his employer (or his allies) in exchange for a yearly payment. These contracts are rare and generally not formally reported. As an alternative measure of jockey's loyalty, we also compute the Herfindhal index of his previous affiliations (*Affiliation Diversity*). We control for the proportion of races won by each jockey (*Jockey Previous Win*) - jockeys with a strong winning record may be more risk-averse, being more concerned about future mobility and less committed to a particular contrada.

Until the beginning of the 20<sup>th</sup> century father and son or brothers could run for different contrade<sup>12</sup>. We count the number of family members in the race (*Family ties*), expecting that cross-cutting family ties reduce the likelihood of incident occurrence. We also take into consideration potential spillover effects – conflict initiated during one race may breed more hostility in a subsequent race. To that end we include two dummy variables for the July and August Palios. Extraordinary races represent the omitted category. Contrade often choose jockeys based on their potential fit with the horse type assigned to them. Thus, horse-related characteristics may shape the mobility options of a jockey. We use nine horse-type fixed effects to account for horse features.<sup>13</sup> We also use seventeen neighborhood fixed effects to control for enduring differences in resource endowments between contrade. To capture time effects, we introduce five-time windows (Pre1796; 1796-1848; 1849-1906;

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<sup>12</sup> The participation of jockeys belonging to the same family has been prohibited between 1907 and 1973. It was allowed before 1907 and after 1973.

<sup>13</sup> In the archives, horses were typically classified based on horsehair color. Based on expert evaluation we assigned each horse to one of the following categories: Baio, Baio oscuro, Grigio/moscato/pomellato, Falbo/Isabella, Roano, Sauro and Storno. Mixed/undefined is the omitted category.

1907-1948; Post1949). These periods, identified from historical research, capture major changes in the Palio regulations<sup>14</sup>, which may affect the overall propensity to engage in conflictual episodes.

### **Empirical strategy**

As our dependent variable is binary in nature, we estimate a logit model predicting the likelihood that contrada  $i$  is involved in an incident during Palio  $j$ . We chose a logit model as the main specification because it allows us to better control for unobserved heterogeneity through contrada and horse fixed effects. To account for the non-independence of observations and for autocorrelation in the data, we clustered standard errors by jockey (Petersen, 2009).

Our data feature a relatively small number of contrade involved in incidents during each Palio. King and Zeng (2000) suggest that standard logit estimation underestimates the probability of an event occurring when the events are rare. For this reason, we complement our main models by estimating a rare event logit model. In the Robustness section, we discuss alternative estimation approaches.

### **Results**

Table 2 presents descriptive statistics for the variables in the analysis. Incidents are a rare occurrence with large variation – we recorded 109 incidents in 539 races, on average 0.04 incidents per contrada Palio. Alliances are far more widespread than rivalries – there are 3.2 allies and 0.5 rivals per contrada on average. Unsurprisingly, networks constrain the mobility of jockeys – it is seven times more common for jockeys to have experience with an ally of their employer than a rival. Jockeys run on average in 12.5 Palios in their career, winning about 10% of them. All correlations are within acceptable boundaries, except for that between *Jockey Experience* and *Experience with Allies* (0.71). Multicollinearity is not an issue, as the mean Variance Inflation Factor (VIF) for the full model is 3.9, below the recommended thresholds in the literature (e.g., Neter, Wasserman and Kutner 1989).

-----*Insert Table 2-3 here*-----

The results from the logit models are presented in Table 3. The baseline Model 1 confirms that the incident rate increases with the number of races ran by a contrada. The results suggest that success

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<sup>14</sup> For instance, after 1949 jockeys are searched by police officers before the Mossa. This prevents them from carrying objects that can hurt competitors during the race. The norm was enforced from 1952 onwards.

on the track is conducive to involvement in incidents. This may be because more successful jockeys and contrade are targeted by others but can also be because they assert themselves more forcefully in aspiring for victory. Winning jockeys are also more likely to be involved in incidents. Compared to the baseline period (pre-1796) the probability of incident occurrence increases over time, but the effect is not statistically significant by conventional standards ( $p < 0.05$ ).

Model 2 introduces the counts of allies and rivals of the focal contrada, while model 3 adds the measures for experience with allies and rivals. The positive coefficient of the *Number of Rivals* variable confirms the expected positive effect of negative ties on the likelihood of incidents. Strong, positive effects are also registered for the *Number of Allies*. The odds of an incident increase by a factor of 2.75 for each additional rival and by a factor of 1.26 for each additional ally. The results confirm that there is a downside to the mobilization of allies in conflictual situations, as the reinforcement of group solidarity by activating strong ties provokes one's rivals into mobilizing support on their end, thereby escalating, rather than mitigating, conflict (Collins 2012, Gould 2000).

We posited career mobility as a countervailing force to the escalating mechanism underlying the activation of collaborative and conflictual relationships. Model 3 provides evidence that confirms the role of mobility in regulating social conflict: the moves of jockeys across neighborhoods over time are associated with a lower incident rate. Prior experience of jockeys with an ally or a rival of their employer tempers the structural effects – jockeys appear less willing to engage in hostilities in view of their past affiliations. Based on the estimates presented in Table 3, the odds of an incident decrease by a factor of 0.91 for a one-unit change in the *Experience with Allies* and by a factor of 0.84 for a one unit change in the *Experience with Rivals*. These effects are confirmed in the estimation of a rare event logit model (King and Zeng, 2000). The coefficients have the same signs and are significant at the same levels (Model 4). Results are robust when using a standard logit model, including contrada and horse-type fixed effects (see Model 5).

### **Robustness analyses**

*Alternative explanations.* To rule out alternative explanations, we estimated analyses with additional controls (Table 4). Particularly important is Model 6, where we add experience with neutral contrade and with the employing contrada to the variables capturing experience with allies and rivals. Results

confirm that the incident rate is not attenuated by career mobility in general, but by career moves across embedded relationships – between allies and between rivals. Past experience with neutral contrade does not affect significantly the incident rate, and neither does experience with the current contrada – probably because long-serving jockeys are more likely to execute orders against others, acting with less self-restraint than jockeys changing employment. Our fieldwork lends support to these observations. Jockeys moving in the “grey areas” (between contrade that are neither allies, nor rivals) reported having greater degree of freedom on the race track.

-----*Insert Table 4 here* -----

A possibility raised in our fieldwork is that career moves are determined by the jockey-horse match. However, our results remain robust when controlling for jockey familiarity with a specific type of horse (Model 7). Our informants also suggested the captains of the contrade significantly influence jockeys’ career moves. A captain is a contrada member elected to govern the contrada for a fixed term – he negotiates with jockeys and develops relationships with them. Model 8 adds a set of captain-level controls: his tenure (Captain Experience), the nature of his role (Long Term vs. Temporary) and a dummy for his rookie year (Captain Change). Notably, the incident rate is not affected by the experience level of the captain but increases significantly when a contrada is headed by a newly-elected captain. This may be because new captains are less effective at managing exchanges with jockeys and other contrade to their benefit or because of their desire to assert themselves early in their tenure. That the results remain unchanged upon the introduction of these variables implies that the key findings cannot be reduced to the strategizing of captains.

We also control for environmental factors in conflict regulation. Model 9 introduces basic macroeconomic and institutional variables. For the period after 1880 we collected Italian GDP and population data (Malanima 2011, Jutta and Van Zenden 2013), and the number of court cases for public misdemeanor (ISTAT)<sup>15</sup>. Results suggest that the incident rate increases during economic downturns ( $p < 0.10$ ). We checked for institutional influence but found no evidence for a significant

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<sup>15</sup> We refer to the total number of suits filed under the rubric “Liti e percosse” (ISTAT)

association between the number of public misdemeanor cases brought to court and the probability of incident occurrence. Against these controls, the results of the analysis remain robust.

*Additional analyses.* In unreported analyses we implemented several additional robustness checks. To increase confidence in our causal inferences, we specified a different lag structure of the variables, but the results remained intact. We recomputed the *Number of Allies* and *Number of Rivals* using only active alliances and rivalries (participating in the race). We also used time windows of five and ten races to compute the mobility variables. Results are aligned with those reported so far. To account for unobserved differences in the propensity of each contrada to provoke incidents, we also included the count of incidents that a contrada was involved in prior to the current Palio. Estimates were in line with those presented. We also ran the analyses excluding the jockeys with the longest careers, to make sure our results are not driven by outliers. Results remain robust.

*Incidents' coding.* We recognize that our dependent variable may be susceptible to two types of biases. First, incidents are defined based on the interpretation of historical sources. Given the possibility of coding bias, the second author revisited the sources and re-compiled a list of incidents. The inter-rater agreement was 98% on commonly rated items, with Cohen's kappa at 0.735. Results were unchanged when using only incidents recognized by both coders. Second, the dependent variable combines on- and off- race track episodes. We did so for substantive and empirical reasons. As implied in historical work (e.g., Biliorisi and Brogi 2011) and by our fieldwork, off-track incidents are typically connected in some way to the race itself (see Table 1 for a few examples). For example, interviewees recounted stories of contrade skirmishes occurring days or weeks after the Palio, upon evidence surfacing of jockey's treason, of unfulfilled pledges or another form of perceived treachery. Incidents may also occur in the weeks preceding the Palio, in reaction to rumors about treachery. In recognition of the complex nature of incidents and the practical difficulty of disentangling types of incidents that are often, if not always, related, we decided to combine the two. That this approach is not a source of bias in the estimates is confirmed by the results of a simultaneous bivariate probit regression, where we differentiated between incidents that could be directly linked to events during the race or the behavior of the jockey (i.e. explicitly mentioned in the historical sources) and those lacking a direct link. The results for the "direct-link" incidents align with those already presented, while the

residuals of the two equations are highly correlated (a Wald test rejects the hypothesis of  $\rho=0$ ;  $\text{Chi}^2(1) = 14.61, p < 0.001$ ). An aggregated variable does justice to the social context and to an analytical approach, where incidents have social consequences that cannot be limited in time or space. It is also recommended by the low frequency of incidents.

*Endogeneity of embedded moves.* Another potential concern is the possibility that unobserved traits drive both the incident rate and the propensity of jockeys to engage in embedded career moves (i.e. the probability that they move between allies or rivals). To rule out this possibility, we estimated a Heckman probit model (Van de Ven and Van Praag 1981). At the first stage, we estimate the probability of a move from an ally or a rival. As an instrument, we used a variable, labeled *Nonna*, which takes the value of “1” for the neighborhood with the longest non-winning spell, “0” otherwise. The *nonna* is eager to win and as a result, should be more likely to recruit a talented jockey from a rival or ally. The effect on incident occurrence is less obvious – the *nonna* may be expected to avoid incidents, as they reduce the chances of winning, but the determination to win may also provoke more aggressive behavior during the race. The results of our analyses corroborate this view and the use of *nonna* as an instrument: contrade with the longest non-winning spells are more likely to hire jockeys from allies or rivals, but their incident rate is not significantly different from that of others.<sup>16</sup> Using the estimates from the first stage (available upon request), we computed the Inverse Mills Ratio and included it as an explanatory variable in the second-stage regression. Model 10 in Table 4 presents the estimates of the second-stage probit, featuring the Inverse Mills Ratio. While positive, the Inverse Mills Ratio is not significant; the results remain robust. The evidence suggests that our results are unlikely to be affected by selection bias.

## **Discussion**

The contribution of this paper is in clarifying the nature of “temporal multiplexity” (Shipilov et al. 2014) and broadening the concept to apply to different levels of analysis and different time scales.

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<sup>16</sup> Following a friendly reviewer suggestion, we also tried to use the results of the ballot assigning horses as an instrument for hiring decisions. However, it is not possible to uniquely identify horses participating to the race between 1743-1930 (just their type). Additional analyses based on the 1930-2010 period reveal that horse quality is not correlated with embedded moves.

Scholars are regularly encouraged to cross levels of analysis by showing how network ties interact with individual cognitions (e.g., Ibarra et al. 2005, Ahuja et al. 2012) or explore processes involving ties of different duration (Ahuja et al. 2012, Quintane and Carnabuci 2016). The concept of temporal multiplexity is instrumental in achieving these objectives. It allows to examine the co-existence and mutual influence of ties at different levels of analysis or of different duration, or how discrepancies in duration lead to misalignment between individual and organizational interests. These represent key avenues for the application and development of the concept in network and organizational scholarship.

The analysis attested to the dynamic interplay of individual mobility and inter-organizational networks in explaining the escalation of conflict. This was made possible by unique network and mobility data from a historical relational event. Previous studies emphasize the role of structural factors (Gould 1999, 2000, Collins 2012) and boundary-spanning individuals (Simmel 1955) in regulation of conflict. Our approach looks *jointly* at structure and individuals over time, demonstrating how actors interpret and respond to the constraints posed by structure (Kilduff et al. 2006).

Our principal finding is that the overlaying of individual and organizational ties of different duration moderates conflict. The relational content in mobility ties makes the past more vivid for jockeys, reinforcing contradictions and alleviating social control in ways that make them less likely to execute **bellicose** demands stemming from alliances or rivalries. By introducing tension in the overlaying process through temporal discrepancies, the paper responds to the call to adapt multiplexity theory to conditions of uncertainty and risk (Smith and Papachristos 2016). If it is well-recognized that career mobility weaves ties between past and present employers (Godart et al. 2014, Phillips 2011), little attention is paid to the links mobility creates *within* actors, overlaying the new affiliation on top of the old one (Gould 2003, Kilduff et al. 2006). The theoretical importance of these “transitional states” is in creating preconditions for the misalignment between individual action and organizational demands. Misalignment is associated with indeterminate identification and tension (Ibarra 2003, Conroy and O’Leary-Kelly 2014), but we highlight its positive function in reducing compliance with conflict-inducing demands. This supports the argument that the layering of past relations in individual memories reduces the degree to which the current affiliation can shape behavior (Kilduff et al. 2006).

The evidence is also consistent with a mechanism familiar from Simmel (1955). The temporal “stacking” of ties creates complex mobility trajectories that afford greater leeway for individual action. Navigating these trajectories facilitates moderation when it contributes to relaxing the social control over actors by increasing the asymmetry between assuming a role and fulfilling the expectations associated with it. By disassociating roles from behavioral expectations, mobility reduces the stakes of competition or the willingness to execute demands that are intended to raise them.

This function of mobility contravenes the rigidity of “symmetrical” social space. Our results confirmed that the “stickiness” of relationships predisposes to conflict, locking actors into fixed roles with set expectations. That the activation of rivalries and alliances favors escalation is in line with the observation that conflict propagates through relationally-loaded ties, whether positive or negative in nature (Gould 1999, 2000, Collins 2012). Our results corroborate the association between relational symmetry and conflict that was identified by Gould (2003). Symmetric ties are conflict-ridden and emotionally ambivalent (Coser 1956), and are instrumental in turning individual into collective disputes. The mobilization of allies promotes polarization, provoking one’s rivals into doing the same.

This finding is pertinent to research on the “dark side” of social networks. Studies document negative effects of social networks on positive outcomes (i.e. when over-embeddedness reduces firm performance Uzzi 1997) or identify conditions under which the costs of embeddedness trump the benefits (Lee 2013). Our study provides evidence for a positive effect of alliances on the escalation of conflict. Social networks are capable of both aggravating and moderating conflict, with the outcome contingent on contextual factors (Granovetter 1985, Gould 2003).

The pattern emerging from our analysis, where organizational ties escalate and mobility ties moderate conflict occurrence, is neither explicitly intended, nor fully visible to participants. Social regulation of this kind illustrates the “complex chemistry” of the interplay between individual and organizational networks (Ibarra et al. 2005, Moliterno and Mahony 2011, McEvily, Soda and Tortoriello 2014). The *Palio di Siena* is an entrenched social structure, where organizational ties change little over time and where the mobility of jockeys is the most dynamic component. This mobility is a source of uncertainty for captains but is essential in achieving moderation in social space that is conducive to outbursts of violence.

In our fieldwork, we inquired about the observed dependencies. Interviews with jockeys were instrumental in identifying the underlying mechanisms. Captains and contrade members were not aware of the uncovered effect of career mobility but found it credible – it is accepted that jockey performance is only partly controlled by the employer. It is perhaps ironic that the overlaying of affiliations of jockeys, habitually decried by the Senese as a source of corruption in the race, proves a positive social regulator. Some captains may have developed an intuitive understanding of this dynamic but prefer not to crack down on jockeys in recognition of community-level benefits related to conflict moderation. However, note that such moderation can only be effective if surreptitious in nature, as it counters the execution of the strategic plans of contrade that tend to escalate conflict.

Our fieldwork testified to the necessity to analyze positive and negative social relationships together, as they not only influence each other, but jointly shape performance. Lieutenant#1 directed our attention to the fact that a key source of tension between the interests of jockeys and contrade is social structure itself, as it evolved in a temporally unequal manner. The overlaying of new rivalries in the early 20<sup>th</sup> century over pre-existing enduring alliances led to the emergence of structural inconsistencies in the form of unbalanced triads. Some alliances were dissolved, but others survived, posing challenges for contrade in negotiating with allies and for jockeys in charting career trajectories that conform with structural constraints. These inconsistencies require flexibility in navigating relational configurations, but also contribute to decreasing the alignment between identities and roles that facilitates conflict escalation.

### **Generalizability and Future Research**

Scholarship emphasizes the need of relational, contextual and systemic accounts of social processes (Borgatti and Foster 2003). There are relatively few occasions to analyze longitudinally social systems where conflict and collaboration co-exist and co-evolve (Syth and Tatarynowicz 2014: 585). Unique longitudinal data allowed us to investigate a system that has maintained the same format for centuries. Naturally, the idiosyncratic nature of the context poses the question of the degree to which the findings can be generalized. Two considerations alleviate such concerns. First, our results are aligned with findings in sociology, based on settings that have little in common with the *Palio di Siena* (e.g., Gould 1999, 2000). Second, confidence in the generalizability of results is reinforced by evidence from other

contexts. An analysis of mobility in the National Hockey League (Grohsjean et al. 2016) demonstrates that hockey players engage in less aggressive behavior against former colleagues, concluding that players allow former employers to perform better. The finding that players employed by one team “spare” colleagues from a previous team agrees with what is observed in Siena. However, the featured mechanism is different – if we recognize the importance of identity processes that these authors consider as central, we attribute a role to temporal multiplexity that is relational in nature and is irreducible to individual intentions.

Studies of career mobility are almost exclusively focused on its performance implications (Wezel et al. 2006, Somaya et al. 2008), but mobility has a broader social impact. More research is needed on the relational nature of employment, in agreement with studies applying a network lens to careers (Phillips 2011, Godart et al. 2014). The conditions featured in our setting, where strategy implementation depends on key individuals, are not unlike those in industries where success depends critically on highly-mobile talent (i.e. designers, creative directors, consultants) and where labor markets are structured by short, emotionally-charged spells of employment. A network perspective on careers in these settings is likely to offer valuable insights into the complex motivations that underlie creativity, commitment and mobility (Shipilov 2012, Godart et al. 2014).

A notable limitation of our analysis is the inability to directly observe and differentiate the underlying mechanisms. These were inferred from the data and supported by fieldwork observations, similar to classic embeddedness studies (Uzzi 1996, 1997). However, more precise evidence is necessary, which can be obtained through experimental methods and micro-level observations. We encountered the same difficulties that others have documented in attempting to bridge individual and network levels of analysis (Ibarra et al. 2005, Kilduff et al. 2006). In this regard, the concept of temporal multiplexity can prove useful, but it requires additional work. We recommend for future research to differentiate between types of overlay in temporal multiplexity (Figure 1). Studies of other types of temporal multiplexity or other behavioral outcomes will contribute to clarifying the scope and relevance of our findings.<sup>17</sup>

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<sup>17</sup> There are possibilities for the application of methods based on the concept of temporal multiplexity in various social domains. For example, journalistic accounts suggest that the overlaying of organizational with mobility

One assumption underlying our analysis is that interactions between levels of analysis afford researchers greater theoretical insights into the system as a whole (Rousseau 1985). The social system of the ancient city of Siena offers a unique opportunity to observe a key characteristic of social living – the co-existence of peace and feud, conflict and order (Simmel 1955). However, their balance is not automatically produced – it is uncertain and fragile. The process where organizational ties escalate and mobility ties moderate conflict is only one aspect of a complex, multi-layered social system that has evolved in Siena over centuries. Members of rival *contrade*, the Senese are also neighbors that co-exist peacefully for the rest of the year. However, as the Senese readily admit, the rest of the year is no more than a prelude to the frantic, exhilarating and perilous days of the *Palio*.

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ties was vital in rewiring French political networks and clearing the road for the unexpected victory of a nascent political movement in the 2017 French Presidential Elections. Individual career moves are particularly important when crossing entrenched social boundaries, such as those between the Left and Right in the political spectrum.

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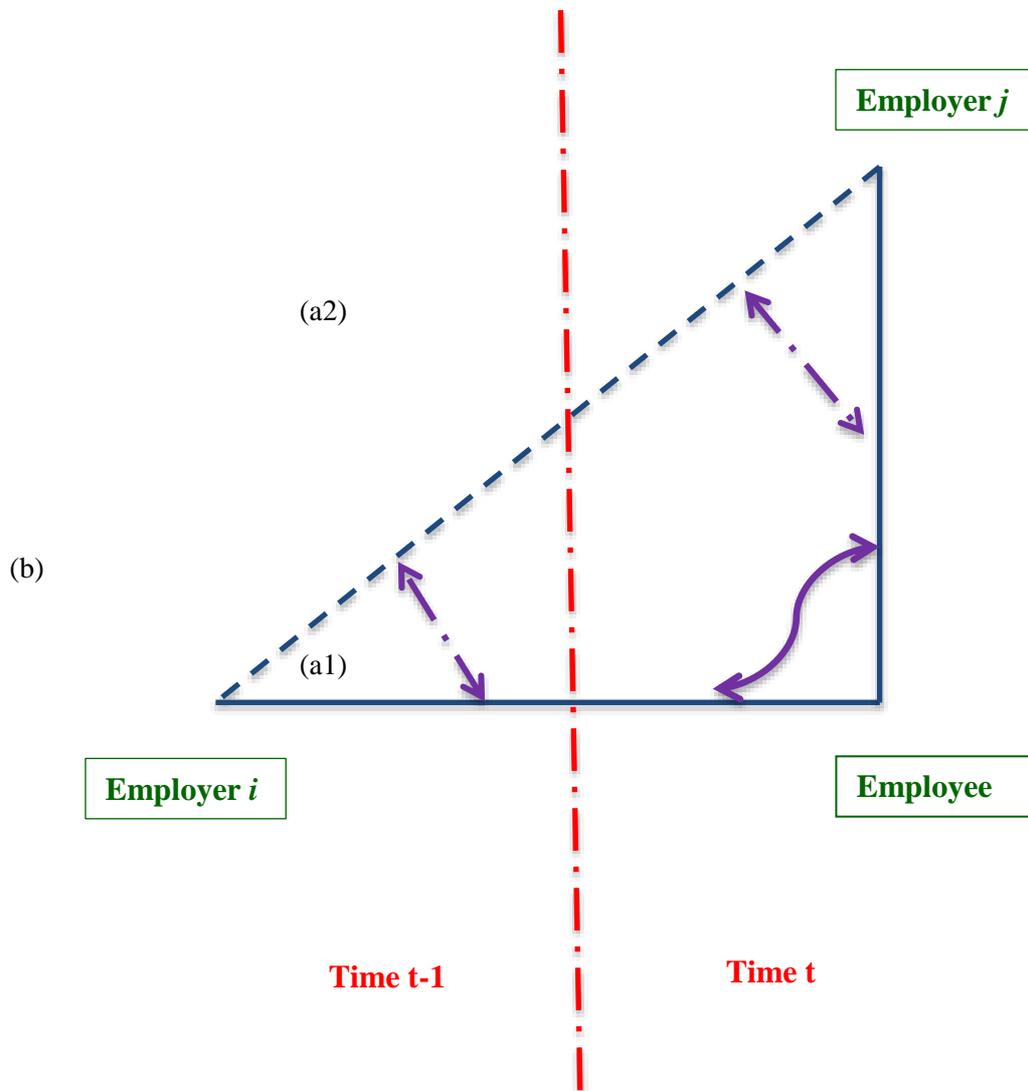
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Figure 1 Visual representation of “temporal multiplexity” in career mobility



== = -Inter-organizational tie (alliance, rivalry)

— Personal tie

(a1)(a2) Personal-organizational tie overlay

(b) Personal-personal tie overlay

**Table 1: Example of conflictual episodes coded as incidents**

<p>August 27, 2002 (Following the August 16<sup>th</sup> Palio)</p>	<p>Fierce rivalry in a centuries-old Italian horse race has spilled over into such serious violence that police were called in. Six people were put under house arrest after one jockey had been badly beaten up. The injured jockey, Giuseppe Pes, was riding for the Lupa neighbourhood, despite having declared to the Istrice captain that he would not switch to the rival contrada. The two districts have a long history of rivalry. Pes's defection was too much for his alleged attackers, who are Istrice supporters. Pes, one of the Palio's most successful jockeys, suffered serious injuries, including a broken rib. The six suspects are also accused of stealing the badge representing the Lupa neighborhood.</p>
<p>August 16, 1861</p>	<p>The colors of Castelvecchio were defended by Mario Bernini, nicknamed "Bachicche". He was first at the start. The jockey running for Chiocciola, Edoardo Seccatici, made an attempt to stop Bachicche during the second lap, but his attempt was unsuccessful and he was placed under arrest. The victory of Bachicche was greeted by boos from the Campo and he was immediately surrounded by armed guards to prevent further rioting.</p>
<p>August 15, 1829.</p>	<p>The captain of Valdimontone brought a lawsuit against Matteo Brendani, a jockey for the Chiocciola, accused of repeated attempts to damage Gobbo Saragiolo, the jockey for Valdimontone, during the 4<sup>th</sup> trial. Riots erupted involving members of the contrade.</p>
<p>July 3<sup>rd</sup>, 1898.</p>	<p>The Torre hired a young jockey from a jockeys' family from Lazio - Angelo Meloni "Picino". The Oca hired a jockey with a Sienese lineage, Ermanno Menichetti "Popo". Picino took the lead and the race seemed to be over, but his sudden fall opened the way for Popo to win. Members of the Torre, convinced of Picino's treachery, vented their anger on him. The police had to intervene. Picino justified himself by saying that he fell because of his silky pants, too slippery for the sweaty rump of the horse. Afterwards, a bloody brawl occurred between two Torre and two Oca supporters, where one man was stabbed to death. "Picino" did not participate in another Palio for four years.</p>
<p>August 16<sup>th</sup> 1812</p>	<p>Aquila hired Piaggina; they had the best horse As soon as the rope (canape) was lifted, he was repeatedly jostled by Nicchio and Drago. Nicchio's jockey fell from his horse, taking down Drago's jockey with him. Piaggina kept running, but was soon attacked by other contrade, with the race finally going to Tartuca.</p>

**Table 2: Correlation table**

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Incident	0.04	0.19	1.00																					
Experience with Allies	2.08	2.93	0.01	1.00																				
Experience with Rivals	0.32	1.10	0.03	0.25	1.00																			
Number of Allies	3.21	1.22	0.07	0.25	0.07	1.00																		
Number of Rivals	0.52	0.58	0.15	0.06	0.34	0.24	1.00																	
Contrada Experience	226.78	85.19	0.09	0.00	0.13	0.05	0.38	1.00																
Contrada Previous Win	0.09	0.03	0.09	0.03	0.14	-0.05	0.33	0.10	1.00															
Jockey Experience	12.46	11.32	0.03	0.71	0.34	0.01	0.03	0.05	0.07	1.00														
Jockey Previous Win	0.11	0.16	0.03	0.14	0.08	-0.08	0.01	-0.07	0.08	0.21	1.00													
Affiliation diversity	0.66	0.28	0.02	0.45	0.19	-0.01	0.00	-0.05	0.06	0.61	0.16	1.00												
Family ties	0.08	0.28	-0.02	0.04	-0.02	-0.04	-0.09	-0.26	-0.02	0.04	-0.03	0.05	1.00											
August	0.48	0.50	0.06	0.01	0.01	0.01	-0.01	-0.01	0.00	0.01	-0.00	0.02	-0.00	1.00										
July	0.46	0.50	-0.06	-0.02	-0.01	-0.03	-0.00	-0.01	0.00	-0.02	0.01	-0.02	0.02	-0.89	1.00									
Extraordinary	0.06	0.24	-0.00	0.02	0.01	0.03	0.03	0.04	-0.01	0.02	-0.02	0.01	-0.03	-0.24	-0.23	1.00								
Captain experience	4.86	6.06	0.00	0.01	0.01	0.03	0.06	0.22	-0.01	0.04	0.03	0.01	-0.11	0.03	-0.05	0.05	1.00							
Temporary Captain	0.03	0.16	-0.00	0.00	-0.02	0.04	-0.02	-0.06	-0.02	-0.02	0.00	-0.00	-0.02	0.01	0.01	-0.04	-0.06	1.00						
Captain Change	0.29	0.45	0.00	0.01	-0.02	0.02	-0.09	-0.30	-0.02	-0.01	-0.02	0.03	0.11	-0.19	0.21	-0.03	-0.41	0.04	1.00					
Horse-specific experience	1.20	0.53	0.01	0.10	0.05	-0.02	0.03	0.04	0.01	0.14	0.11	0.16	-0.02	0.03	-0.03	-0.02	0.01	-0.02	-0.00	1.00				
Experience with Neutral	0.52	0.28	0.00	0.10	0.01	-0.19	-0.10	-0.03	0.03	0.48	0.12	0.79	0.03	0.01	-0.01	0.00	0.01	-0.02	0.02	0.14	1.00			
GDP per capita (\$)	5.38	5.83	0.02	-0.07	0.07	-0.37	0.23	0.81	0.02	0.05	-0.00	-0.07	-0.12	-0.02	0.03	-0.01	0.07	-0.11	-0.19	-0.01	0.03	1.00		
Population	39.21	12.68	0.06	-0.07	0.08	-0.22	0.32	0.96	0.03	0.02	-0.02	-0.07	-0.22	-0.03	0.02	0.03	0.20	-0.12	-0.28	0.02	0.01	0.86	1.00	
Court cases	233.73	62.56	-0.05	0.03	0.03	-0.03	0.02	-0.01	-0.01	0.03	-0.04	0.07	0.02	-0.03	-0.01	0.07	0.09	-0.01	-0.05	-0.01	0.05	-0.05	-0.04	1.00

**Table 3: Logistic Regression of the probability of involvement in a conflictual episode**

	Model 1 <i>Baseline</i>		Model 2 <i>Relationally loaded ties</i>		Model 3 <i>Mobility</i>		Model 4 <i>Rare event logit</i>		Model 5 <i>Logit with FE</i>	
	Coef	se	Coef	se	Coef	se	Coef	se	coef	se
Experience with Allies					-0.09**	(0.03)	-0.09**	(0.03)	-0.09**	(0.03)
Experience with Rivals					-0.17*	(0.08)	-0.16*	(0.08)	-0.19*	(0.08)
Number of Allies			0.16*	(0.07)	0.24***	(0.07)	0.23**	(0.07)	0.40***	(0.09)
Number of Rivals			0.92***	(0.16)	1.02***	(0.16)	1.01***	(0.16)	1.03***	(0.20)
Contrada Experience	0.01**	(0.00)	0.01	(0.00)	0.01	(0.00)	0.01	(0.00)	0.01	(0.00)
Contrada Previous Win	17.05***	(3.00)	10.92***	(3.20)	11.22***	(3.12)	11.10***	(3.11)	16.66+	(9.54)
Jockey Experience	0.00	(0.01)	0.00	(0.01)	0.03**	(0.01)	0.03**	(0.01)	0.03**	(0.01)
Jockey Previous Win	1.21*	(0.51)	1.11*	(0.51)	1.08*	(0.52)	1.11*	(0.52)	1.04*	(0.52)
Affiliation diversity	0.29	(0.42)	0.19	(0.41)	0.26	(0.42)	0.21	(0.42)	0.24	(0.43)
Family ties	0.20	(0.32)	0.18	(0.31)	0.19	(0.32)	0.24	(0.32)	0.20	(0.33)
August	0.43	(0.31)	0.51	(0.32)	0.51	(0.31)	0.46	(0.31)	0.58+	(0.31)
July	-0.32	(0.35)	-0.23	(0.36)	-0.23	(0.35)	-0.27	(0.35)	-0.15	(0.34)
1796-1848	1.90+	(1.08)	1.89+	(1.09)	1.83+	(1.08)	1.36	(1.08)	1.66	(1.13)
1849-1907	1.60	(1.14)	1.60	(1.16)	1.55	(1.15)	1.08	(1.15)	1.40	(1.22)
1907-1948	1.78	(1.25)	1.84	(1.27)	1.73	(1.26)	1.26	(1.26)	1.55	(1.34)
Post 1949	0.97	(1.38)	1.50	(1.38)	1.39	(1.37)	0.92	(1.36)	1.47	(1.48)
Contrada FE	N		N		N		N		Y	
Horse FE	N		N		N		N		Y	
Constant	-9.29***	(1.22)	-9.08***	(1.17)	-9.49***	(1.18)	-8.85***	(1.18)	-10.77***	(1.49)
Log likelihood	-652.90		-627.17		-621.99				-599.94	
Wald Chi2	90.97		134.72		140.74				242.13	
Observations	4,597		4,597		4,597		4,597		4,399	

Standard errors clustered by jockey in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.1

**Table 4: Robustness analyses**

	Model 6		Model 7		Model 8		Model 9		Model 10	
	Mobility types		Horse match		Captain controls		Historical factors		Heckman	
	coef	se	coef	se	coef	se	coef	se	Coef	se
Experience with Allies	-0.12***	(0.04)	-0.09**	(0.03)	-0.10**	(0.03)	-0.08*	(0.03)	-0.05**	(0.02)
Experience with Rivals	-0.22*	(0.09)	-0.19*	(0.08)	-0.19*	(0.08)	-0.28**	(0.10)	-0.08*	(0.04)
Number of Allies	0.40***	(0.09)	0.40***	(0.10)	0.38***	(0.10)	0.34***	(0.10)	0.20***	(0.05)
Number of Rivals	1.03***	(0.20)	1.03***	(0.20)	1.08***	(0.21)	1.16***	(0.22)	0.36***	(0.11)
Experience with current employer	0.17	(0.23)								
Experience with neutral	-0.62	(0.68)								
Horse specific experience			-0.10	(0.17)						
Captain experience					0.00	(0.02)				
Temporary captain					0.11	(0.54)				
New captain					0.56*	(0.24)				
GDP							-0.12+	(0.07)		
Population							0.00	(0.09)		
Riot related court cases							-0.00	(0.00)		
Contrada Experience	0.01	(0.00)	0.01	(0.00)	0.00	(0.00)	0.02	(0.02)	0.00	(0.00)
Contrada Previous Win	16.72+	(9.60)	16.80+	(9.52)	20.66+	(10.60)	52.06**	(19.11)	7.99+	(4.44)
Jockey Experience	0.04***	(0.01)	0.03**	(0.01)	0.04***	(0.01)	0.04**	(0.01)	0.01	(0.01)
Jockey Previous Win	1.06*	(0.52)	1.08*	(0.53)	0.93+	(0.55)	0.82	(0.68)	0.80*	(0.37)
Affiliation diversity	0.74	(0.68)	0.27	(0.43)	0.13	(0.43)	0.30	(0.53)	1.09	(0.73)
Family ties	0.19	(0.33)	0.19	(0.33)	0.11	(0.35)	0.42	(0.68)	0.15	(0.16)
August	0.57+	(0.31)	0.58+	(0.31)	0.52+	(0.32)	0.44	(0.31)	0.29	(0.18)
July	-0.15	(0.34)	-0.15	(0.34)	-0.35	(0.35)	-0.49	(0.34)	0.05	(0.19)
1796-1848	1.65	(1.13)	1.67	(1.13)	-0.06	(0.84)			0.38	(0.43)
1849-1907	1.37	(1.22)	1.41	(1.22)	-0.36	(0.57)	0.64	(0.82)	0.32	(0.51)
1907-1948	1.54	(1.34)	1.57	(1.34)	0.02	(0.37)	0.06	(0.63)	0.38	(0.59)
Post 1949	1.46	(1.48)	1.50	(1.48)					0.39	(0.69)
Mills ratio									0.01	(2.26)
Contrada FE	Y		Y		Y		Y		N	
Horse FE	Y		Y		Y		Y		N	
Constant	-10.78***	(1.49)	-10.70***	(1.49)	-9.56***	(1.66)	-14.71***	(3.16)	-10.00***	(1.84)

Log likelihood	-598.99	-599.72	-549.17	-427.75	-3417.068
Wald chi2	245.79	248.26	234.08	211.22	
Observations	4,399	4,399	3,591	2,422	4,597

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Standard errors clustered by jockey in parentheses \*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.1