

National Cultural Norms and Soccer Violence

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Abstract: Can some acts of violence be explained by a society's cultural norms? Scholars have found it hard to empirically disentangle the effects of cultural norms versus legal institutions in driving violence. We address this problem by exploiting a natural experiment offered by the presence of thousands of international soccer (football) players in the European professional leagues. We find a strong relationship between the history of civil conflict in a player's home country and his propensity to behave violently on the soccer field, as measured by yellow and red cards. This link is robust to region fixed effects, country characteristics (e.g., rule of law, per capita income), player characteristics (e.g., age, field position, quality), outliers, and team fixed effects. We also find a strong positive relationship between civil war history and national attitudes towards violent conduct, as well as between attitudes and both yellow and red cards. Reinforcing our claim that we isolate cultures of violence rather than simple rule-breaking or something else entirely, there is no meaningful correlation between a player's home country civil war history and soccer performance measures not closely related to violent conduct.

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“The coarsening of human sensibilities that accompanied the [Nigerian] civil war, both on the battlefield and behind the lines, was being foisted on the general populace. Violence was palpable in the streets.” -- Wole Soyinka, *You Must Set Forth at Dawn: A Memoir* (2006: 175).

1. Introduction

Researchers increasingly acknowledge the adverse effects of violence on social welfare and economic development, but the causes of violence continue to be the subject of intense debate (Kalyvas 2006). Our understanding of the role of cultural norms – conventionally defined as societal standards of appropriate behavior – in driving violence is especially limited due to inherent empirical challenges.¹ Conventional efforts to control for covariates of violence are complicated by the fact that both formal legal and normative restraints on violent conduct reinforce each other and are thus plausibly correlated across societies. As Jack Snyder (2002) points out, this is a serious problem for scholars of International and Comparative Politics. Snyder’s article demonstrates that proponents of cultural norms-based arguments have been largely unsuccessful at disentangling the effects of norms from institutions when explaining individual conduct. For claims about the role of cultural norms to be credible, scholars must show that violence-related norms have a significant effect on individual behavior after controlling for institutions. This paper attempts to advance the literature by addressing this core issue in a cross-national setting.

Scholars who attempt to address these concerns face major methodological obstacles. Inferences about the effects of norms drawn from cross-country comparisons of the incidence of violent acts, such as violent crime rates, are generally unsatisfying because laws and income levels (two plausible alternative explanations) also differ across societies and may interact with

¹ Some have made the distinction between *culture* and *cultural norms*. Many scholars concerned with culture tend to focus exclusively on characteristics inherited from the distant past. While not ruling out a role for such factors, our primary focus on cultural norms demands that we take account of norms that may have emerged in response to relatively recent events.

culture in complicated ways (Becker 1968). Moreover, limited cross-national coverage of crime data (especially for less developed countries), and differences in crime reporting standards, make it difficult to draw decisive inferences about the presence of cultural norms favoring violent conduct using available crime statistics.

This paper surmounts these difficulties by using a novel research strategy to establish the empirical importance of cultural norms as determinants of individual level violence. We study violence on the soccer (football) field in the European soccer leagues, a cosmopolitan environment where thousands of individuals from numerous countries regularly choose whether or not to use violence to achieve their aims. The European soccer leagues² offer a natural experiment for our purposes because they constitute a setting where individuals from different countries make these decisions in a common legal institutional setting, and where we can also effectively control for alternative explanations for violence. Our focus is the relationship between the civil war history in a player's country and his level of violence on the soccer pitch.

Our main empirical measures of individual violent conduct are the number of yellow and red cards earned. According to soccer's official rules, players who commit exceptionally violent fouls warrant a disciplinary sanction in the form of a caution (indicated by a yellow card) or a dismissal from the match (a red card). Although yellow and red cards may also be granted for certain non-violent acts, we show that the overwhelming majority are given for violent fouls. Using data from six of the world's major soccer leagues (all in Europe), containing players from all continents and seventy countries, we obtain a striking empirical pattern: a strong correlation between the history of civil war in a player's native country and his likelihood of earning yellow and red cards. We also find a strong positive relationship between civil war history and national

² We do not consider the World Cup since data on violent conduct is limited to very few countries.

attitudes to violent conduct, as well as between these attitudes and both yellow and red cards. Confirming that civil war history captures an aspect of culture related to violence, rather than general rule-breaking or something else entirely, there is no meaningful relationship between home country conflict and soccer performance measures that are not closely related to violent conduct, like goals scored.

This main result is robust to extensive controls for player characteristics, country income levels and continent fixed effects, where we effectively compare nearby countries (for example, African countries with different civil war histories). Beyond providing a novel real-world measure of individuals' willingness to commit acts of violence, this finding indicates that some aspects of national culture are persistent even when individuals are far from home in a different institutional setting, here, a professional sports league. Below, we discuss other robustness checks and the issue of player selection into our sample.

This paper relates most closely to the literature in political science and anthropology reviewed in Snyder (2002). Other studies by social scientists have used the sports playing field as a laboratory for studying individual decision-making under a clear set of common rules – e.g., Smith (1979a, 1979b), Weinstein et al. (1995), Chiappori, Levitt and Groseclose (2002), Duggan and Levitt (2002), Levitt (2002), Milanovic (2005), Witt (2005), Garicano and Palacios-Huerta (2006), and Price and Wolfers (2007) – but to our knowledge we are the first to use sports to explore cross-country cultural norms regarding violence. Our paper also differs in this way from those economists who relate culture to important economic phenomena, such as Guiso et al. (2006), Bisin and Verdier (2000), Spolaore and Wacziarg (2006), Fernandez and Fogli (2005), Tabellini (2005), and Fisman and Miguel (2008).

The next section describes the data and estimation, followed by the results and the conclusion.

2. Data and Estimation

This paper analyzes the behavior of soccer players to create a revealed preference measure of individuals' cultural proclivity to engage in violent conduct. As mentioned, actual crime rates are unsatisfactory as measures of a "culture of violence" since individuals' real-world actions plausibly reflect the combined influence of legal institutions and economic factors, in addition to cultural norms. We argue that the European soccer leagues offer a setting where individual behavior can be studied within a common institutional backdrop and where we can control for alternative explanations for violence, allowing us to isolate the effect of cultural norms alone.

Soccer's official rules, the so-called "Laws of the Game," are provided centrally by the Fédération Internationale de Football Association (FIFA), the international governing body.³ Every soccer game has one referee with the authority to apply disciplinary sanctions, and the rules establish clear penalties for different types of fouls, misconduct, and aggressive behavior. Most fouls are minor and occur within the natural flow of the game's action; these fouls do not earn the player any additional punishment. In contrast, when a more serious offense is committed, the rules stipulate a disciplinary sanction, in particular a caution or dismissal. A caution earns the player a "yellow card." In these cases, the referee stops the match, calls the player over, holds up the yellow card, and writes the player's name in his notebook. A player who receives a yellow card continues to play in the match, yet the yellow card serves as the first and last formal warning.

³ See http://www.fifa.com/mm/document/affederation/federation/lotg2006_e_1581.pdf. Referees have incentives to closely adhere to the guidelines: those not enforcing the rules may be assigned to minor games, or dismissed.

Yellow cards are a very good measure of violent conduct. Soccer yellow cards are granted for many things, including excessively violent fouls; swearing at an opponent; humiliating the opponent after scoring a goal (with excessive celebration); “diving” to falsely pin a foul on an opponent; or disobeying the referee’s instructions, among other behaviors (including time wasting). Yet the available evidence indicates that the vast majority of yellow cards are granted for violent acts.

< Figure 1 Here >

Figure 1 illustrates the causes of yellow cards in the Italian league during the 2005/2006, 2006/2007 and 2007/2008 seasons, and in the UEFA Champions League in 2004/2005 and 2005/2006.⁴ In the Italian league, nearly three quarters of all yellow cards were awarded for violent fouls (“assault”), while in the UEFA data the proportion is close to two thirds. A large share of the non-violent fouls are for unsporting behavior, some of which is so aggressive as to seek to provoke a violent response (e.g., humiliating an opponent), and thus could also be interpreted as acts of violence.

While we also examine red card fouls as a measure violent conduct in this paper, the relatively low incidence of red cards means that we employ it as a secondary measure. A second yellow card in the same match leads to a red card dismissal, and in cases of egregious behavior a red card may be assigned without the yellow card warning.⁵ When a player is expelled, no

⁴ The data were generously provided to us by by Luca Galvan from the Research Department of the Lega Nazionale Professionisti (Italy), and Graham Peaker at UEFA.

⁵ Beyond expulsion from the current match, a red card often leads to a suspension from future matches; players who accumulate multiple yellow cards in different matches in the same season may also receive later suspensions.

replacement is permitted, so his team must complete the match short one player. The UEFA Champions League data indicate that 35% of red cards were given without prior warnings. In another league where data are available, 40% of red cards were directly awarded for exceptionally violent fouls (“assault”), 19% for “professional fouls” (a deliberate act of foul play, usually to prevent an opponent scoring and sometimes violent), with the rest for “other unsporting acts”.⁶

Our main dataset contains information from the 2004/2005 and 2005/2006 soccer seasons in five national leagues (England, France, Germany, Italy, Spain) and one supra-national league (the UEFA Champions League), from ESPN Soccernet website.⁷ We also have data on each individual player’s quality as measured by his market value. We obtained this information from a soccer management simulation video game; the game features real players and real teams, including each player’s transfer fees and salary.⁸

< Table 1 Here >

Our sample contains several of the world’s most high-profile soccer leagues and a remarkably international collection of players, drawn to Europe by the world’s highest player salaries (Dobson and Goddard 2001). The mean annual salary in our sample amounts to

⁶ Source: *UEFA Disciplinary Statistics 2003/2004*, page 6: <http://www.uefa.com/newsfiles/249438.pdf>. These figures exclude “second yellow cards”, since the underlying behavior that caused these yellow cards is not reported.

⁷ The data was downloaded from the ESPN Soccernet site (using a Perl script): soccernet.espn.go.com/.

⁸ The game is called *Worldwide Soccer Manager* in the U.S. and *Football Manager* elsewhere. We use the 2005 and 2006 releases. The game was developed by Sports Interactive, and the database is assembled by 2500 researchers worldwide. We searched for news stories regarding prominent players’ transfer fees to confirm reliability.

US\$1,291,517, and the average player is worth US\$6,323,515 (Table 1). The main analysis sample includes 5,035 player-year observations for players from 70 different countries (see Appendix Table 1). To ensure at least a moderate amount of information per country, we only consider countries with five or more player-seasons represented in our sample though results are nearly identical using other thresholds.

As mentioned, there are many more yellow cards (mean 2.43 per player per season, see Table 1) reported than red cards (mean 0.15 cards).⁹ We have extensive information on players' place of birth as well as on-field statistics (field position, games played, goals scored, yellow and red cards). While most players in the European leagues are from wealthy OECD countries (mainly in Europe), large fractions are from Africa, Eastern Europe, and Latin America, with smaller numbers of Asians (Table 1).

For some players in our sample our source (the Soccerbase site) did not provide information on their actual place of birth, or indicated a dual nationality. In such cases, we used their participation on a national team to determine nationality. Many players who are originally from less developed countries play for European national teams, and if anything, using this criterion plausibly leads us to underestimate the effect of home country civil war history on violent soccer conduct. The best-known illustration is French star Zinedine Zidane. Even before his infamous headbutt in the 2006 World Cup Final earned him a red card, Zidane was well-known for his violence on the pitch and had received fourteen red cards throughout his career. Though Zidane holds dual French and Algerian citizenship, he chose to play for the French

⁹ These figures are consistent with Witt (2005) and Garicano and Palacios-Huerta (2006).

national team and so under our coding rules is French (a country with no civil war during 1980-2005) rather than Algerian (15 civil war years during the same period).¹⁰

We control for many of the soccer-related factors correlated with fouls and violence on the field, the most important being the player's field position – defenders and midfielders generally commit more fouls than forwards, who in turn commit more than goalkeepers – as well as the number of games played as a starter or substitute. A player's age may also correlate with violent conduct on the pitch and so is included as a further control. We also control for players' quality using two different indicators. The first one is his success as a goal scorer, measured by the number of goals scored. The second is a player's worth, as measured by his transfer fee (which is highly correlated with his salary).

We include league fixed effects to address any differences in the calling of cards or fouls across countries, and team fixed effects (in some specifications) to capture differences in team quality or playing style and tactics, as these represent a further possible source of variation in the incidence of yellow/red cards. The fact that referees have some discretion in calling fouls and awarding cards raises the possibility of bias, and one leading concern is discrimination against players of particular racial or ethnic backgrounds.¹¹ To control for any such bias, we include world region fixed effects – for Africa, Asia, Latin America, and Eastern Europe – in all specifications. These terms also capture any other factors, including regional styles of play

¹⁰ As a robustness check on the statistical findings presented below, we checked whether using this coding rule biased our results in a downward direction. We created a variable identifying those players for which we did not have information on their actual place of birth. We found that when this control variable is added to our core specifications the point estimate on our measure of violent norms increases, suggesting that our coding criteria tends to attenuate rather than amplify the effect of civil war on soccer violence.

¹¹ This is not an idle concern: there is evidence of racial bias among U.S. National Basketball Association referees (see Price and Wolfers 2007).

(“dirty” or “clean”) or region-wide cultures of violence, allowing us to isolate variation across countries within the same region.

Our analysis focuses on the correlation between violent individual conduct on the soccer field and the civil war history in the player’s home country. Specifically, we employ the number of years a country suffered from civil war between 1980 and 2005 using the PRIO/Uppsala Armed Conflict Dataset.¹² Following their conflict classification, we include both “internal armed conflicts” and “internationalized internal armed conflicts”, using the comprehensive 25 battle death annual threshold. The former are defined as “conflicts that occur between the government of a state and one or more internal opposition group(s) without intervention from other states”, while the latter occur “with intervention from other states (secondary parties) on one or both sides.”¹³ We use this rather than using other measures of violent crime (such as murders per capita) for two reasons. First, even the most extensive (to our knowledge) source of cross-national crime statistics, the U.N. Survey of Crime Trends and Operations of Criminal Justice Systems, has limited country coverage, especially for less developed countries. Second, as per their own disclaimer, their statistics are “better indicators of prevalence of law enforcement and willingness to report crime, than actual prevalence.”¹⁴

We believe that there are good conceptual reasons to expect a strong correlation between home country civil conflict history and subsequent violent conduct. Sociologists have found that war-time killing has a major impact on national social norms and values, fostering greater

¹² We focus on the 1980-2005 period because it corresponds closely with the age of the players included in our sample. The results are robust when we look at longer periods, including 1960-2005 (see below).

¹³ See www.prio.no/cwp/ArmedConflict/ for details on the dataset. No extra-systemic armed conflicts occurred during 1980-2005 and thus they are not included. The results are somewhat stronger when the small number of internationalized conflicts are excluded (not shown).

¹⁴ For countries with crime data, see www.unodc.org/unodc/en/data-and-analysis/Crime-Monitoring-Surveys.html.

tolerance for violent behavior postwar (see Archer and Gartner 1976). War's lingering effects are "clearly associated with more homicide and assault, in the ethnographic record as well as cross nationally" (Ember and Ember 1994, 622). In sum, sociologists find that a history of violence appears to change local cultural norms, making violent conduct more socially acceptable, expected, or even desirable. Below we also present results demonstrating the close empirical link between civil war history and national norms regarding violence (as expressed in the World Values Survey), as well as between these norms and yellow and red cards.

Soccer is an intrinsically physical game, where the use of strength may play an important role. However, it is usually associated with physical stamina, the ability to push the body to its limits in an attempt to win, and retain, possession of the ball, rather than with violence. The main distinction is between playing "hard" and playing "dirty." The view of what constitutes acceptable behavior, though, may vary across cultures. As Archetti and Romero (1994) point out, in those countries where it is considered a national sport, soccer not only reflects social and cultural processes but it is a part of those very same processes. In their words, "football is an arena in which social actors symbolize and reproduce by means of their social practices the values dominant in a given period" (p. 39), and thus players from different cultures may tolerate different degrees of violence on the soccer field. The main implication for our study is that the interaction of players from different countries under the same "institutional environment" will reveal these different cultural norms.¹⁵

¹⁵ The 2008 controversy surrounding Peruvian international player Norberto Solano is a case in point. This midfielder, who is included in our main sample playing in the English league, was pictured on the cover of a leading Peruvian sport magazine pointing a 9 millimeter pistol at the Uruguayan national jersey. In Peru, a country that suffered from civil war violence for most of the 1980s and 1990s, the photograph was seen as an innocent prank before a pivotal World Cup qualifying match; in other countries, including Uruguay (with its far less violent recent political history) it was viewed with considerable alarm.

An alternative link between national culture and violence is equally plausible, namely, that those societies with a greater underlying tolerance of violent behavior are also those most likely to suffer from protracted civil conflicts. In this case, it is cultural norms that drive civil war, rather than the other way around. We do not take a stand on which of these two causal mechanisms is correct, nor do we need to in the current analysis: either way, the extent of civil war in a nation's past plausibly reflects the social legitimization of violence, which we seek to correlate with on-field play.

Note that our goal in this paper is to capture the specific effects of violent cultures as opposed to other cultural dimensions, for instance, respect for the rule of law. To capture players' "cultural" propensity to respect rules more broadly, we also control for the degree of rule of law using the Worldwide Governance Indicators (WGI) project dataset.¹⁶

A count model analysis is appropriate for our analysis given that the dependent variables (yellow card fouls, red card fouls, and goals by player-season) do not take negative values. We focus on the negative binomial model (the Poisson model is rejected at high levels of confidence).¹⁷ Standard errors are robustly estimated and the disturbance terms for each country are allowed to be correlated.

There are three possible sample selection concerns. First, our sample consists exclusively of young men and young men may differ in values from the general population of their own country. Second, the values and behavior of the talented young men who are in our sample may differ from other young men in the home country. Third, the countries represented in our

¹⁶ These data are available at: <http://www.govindicators.org>. Summary statistics are in Table 1.

¹⁷ We find over-dispersion for yellow cards but not for red cards. For consistency, we report negative binomial results for all outcomes.

sample, as well as the number of players from each country, could be correlated with the extent of civil war in the home country.

We find that none of these is a cause for concern. On the first issue, the World Values survey asks respondents a question on whether it is appropriate to use violence (which we describe in detail in the next section). The mean responses of young men differ from those found among the full sample of female and male adults by less than 0.1 points on a four-point scale. On the second issue, we find a strong correlation between yellow and red cards acquired by the soccer players in our sample and the average survey response among young men in the home country, as discussed below. On the third issue, there is no statistically significant correlation between the number of years of civil war and the number of country player-years in our sample, or whether the country is represented in our sample at all (not shown).

Moreover, note that the sample selection rule is uniform across countries – the representatives of each nation in our sample are young men with exceptional athletic talent – which alleviates most concerns about internal validity. Besides, the fact that physically robust young men are the main perpetrators of violence in nearly all societies today (and historically) makes this a population of exceptional interest for the study of violence.

3. Empirical Results

We begin with our core results on the relationship between civil war history and soccer cards. In section 3.2 we present results on survey-based measures of cultural attitudes.

3.1 Civil war and soccer cards

The number of yellow cards earned is positively associated with players' home country civil conflict history at the 99% confidence level (Table 2, regression 1). The home country history of violence apparently has a powerful association with violent conduct on the soccer field.

< Table 2 Here >

A reasonable way to judge the substantive magnitude is to compare it to the effects of soccer related determinants of yellow cards, such as age. The nonlinear nature of our estimator means there is no single marginal effect of a worse civil war history, so we focus on particular subpopulations beginning with players from Africa, where civil war risk is highest. In particular, we consider an African midfielder in the French League (the league with the greatest number of Africans) and set civil war risk and other variables to the African average. The predicted number of yellow cards for such a player increases by 3.6 percent when civil conflict prevalence in his home country increases by one standard deviation, or 4 years. Player age is also positively correlated with yellow cards and can serve as a basis for comparison. If the age of the representative African player decreases by two years, his estimated number of yellow cards decreases by 3.0 percent, roughly offsetting the positive conflict effect. A similar calculation for a representative Latin American playing in the Spanish League (the league with the most Latin Americans) also yields a predicted 3.6 percent increase in yellow cards when civil war increases by one standard deviation.

< Figure 2 Here >

Figure 2 presents a scatter-plot relating years of civil war for each country between 1980 and 2005 (on the horizontal axis) to the average number of yellow cards earned per player-season, both conditional on the control variables included in Table 2, regression 1; the area of the

country circles is drawn proportional to the number of player-seasons of that nationality represented in the sample. The graphical relationship is visibly positively sloped. Colombia and Israel are the two sample countries that experienced civil war in every year since 1980, and their players are remarkably violent on the pitch. Inter Milan's Colombian defender Iván Ramiro Córdoba is a case in point: in 2004-5 and 2005-6 he collected a stunning 25 yellow cards.

This graphical representation raises questions about robustness to excluding countries with long civil war histories, but a series of checks indicate that the main relationship is stable when outliers are removed; these robustness checks are presented in Appendix Table 2. The first test calculates studentized residuals to identify outliers (following Belsley, Kuh, and Welch 1980). When the main model (analogous to Table 2, regression 1) is re-estimated omitting outliers, the point estimate on civil war history remains large and statistically significant (regression 1). The result is also robust to, respectively, dropping OECD countries (regression 2), OECD countries and Colombia (regression 3), just Colombia (regression 4), logging civil war years (regression 5), and running the regressions at the country level (regression 6). Figures 3 and 4 show that the regression line remains distinctly upward sloping when we respectively drop OECD countries, and when we additionally drop Colombia, Israel, Iran, Peru, and Turkey.¹⁸

< Figure 3 and Figure 4 Here >

Moving back to Table 2, the main results are virtually identical when regional fixed effects are excluded (not shown), and are robust to the inclusion of country per capita income as

¹⁸ Results are also unchanged when we control for player salary rather than the transfer fee. Another concern relates to referees' xenophobia (recall that racism is largely controlled with continent fixed effects), but anti-foreigner bias is not driving our results: the estimate on civil war history is unchanged when an indicator for being a foreigner is included (not shown).

an additional control (Table 2, regression 2).¹⁹ The association between home country civil war history and yellow cards holds conditional on the country rule of law measure (regression 3), and when we control for team characteristics: the point estimate on the civil war measure is nearly identical at 0.0076 (z-score 2.24, not shown) when team fixed effects are included. The result is also robust to accounting for team quality, measured by their league standings in two variables: the first variable indicates if the team finished among the top five teams in its league, while the second indicates if they finished among the bottom five. Players on top-five teams are less likely to receive yellow cards (coefficient estimate -0.043, z-score 1.68) while players in lowly teams receive somewhat more cards (0.063, z-score 1.66), but most importantly, the point estimate on the civil war measure remains large and statistically significant (0.0072, z-score 2.48, not shown) when these team controls are included.

Throughout Table 2 we control for the number of games played as a starter or a substitute, and these variables are likely to be strongly correlated with the amount of time spent on the field, an important determinant of cards. The exact amount of playing time is more difficult to capture since none of the existing data we are aware of – including websites used by fans, professionals, gamblers, and fantasy soccer league participants – reports minutes played. To make sure our results are not being driven by players with minimal playing time, we excluded players who did not participate in at least three games (as either a starter or substitute) in a given season, and find that the coefficient on country civil war history remains large and statistically significant (0.0102, z-score 2.29, not shown).

Two additional yellow card findings are worth noting here. First, there appear to be different playing or refereeing styles across European country leagues. In particular, the

¹⁹ The per capita income data (in 2006 PPP U.S. dollars) are from the *2007 World Development Indicators* database.

specification in Table 2, column one indicates that, relative to the English league, there are many more yellow cards in the French League (0.264, z-score 4.43), the German league (0.318, z-score 6.71), the Italian league (estimate 0.353, z-score 6.51), and especially the Spanish League (point estimate 0.543, z-score 10.88; not shown). Second, the same specification reveals that, *ceteris paribus*, better-paid players are more likely to receive yellow cards. The data suggest that this is possibly the consequence of high-profile players being targeted for more violent fouls by the opposition and thus provoked into retaliation: fouls suffered is strongly positively correlated with the transfer fee (not shown). In contrast, there are few substantive differences in the proclivity to receive yellow cards across players' home region (Africa versus Latin America, etc.), conditional on the other individual and league controls.

Moving on to other findings, we also studied the relationship between civil war history and red cards. This is of interest since many red cards are directly awarded for exceptionally violent fouls, yet it is also a harder test given the low incidence of red cards. We find a large positive effect of home country civil war history on red cards earned, and this effect is statistically significant at over 90% confidence (Table 2, regression 4). We also consider the number of goals scored as the dependent variable, and find no meaningful correlation with civil war history (regression 5), indicating that civil war history predicts violence on the soccer pitch but not other aspects of play.

3.2 Cultural Norms and Violent Conduct on the Soccer Pitch

These findings raise the question of precisely how civil war affects cultural norms. Our data broadly suggest that childhood and adolescent exposure to national violence is more influential than the culture inherited at the player's birth.

< Table 3 Here >

The number of years that a player's country experienced civil war between his birth and age 21 is positively correlated with yellow cards (Table 3, regression 1). When a variable capturing the number of years that the player's country experienced civil war between 1960 and his year of birth is added as a control, the point estimate on post-birth civil war exposure is nearly unchanged, while pre-birth civil war years are not significantly correlated with yellow cards (regression 2), and the results are unchanged using starting points earlier than 1960 (not shown). Results for red cards are similar (regression 3). Of course, rigorously confirming that childhood exposure to violence is the main channel would require extensive individual survey data of players' attitudes towards violence, and perhaps their personal exposure to violent events, something that is beyond the scope of this study. However, it is worth pointing out that this result is consistent with well known findings from the social psychology literature that childhood and adolescent experiences can have profound and persistent impacts on adult attitudes (Krosnick and Alwin 1989). The effects of childhood and adolescent experiences appear to be quite persistent in our data: in a variety of specifications we tested whether the impact of a player's home country civil war history diminishes over time for older players, or for those with more experience in the European professional leagues, but in no case are these interaction terms statistically significant at traditional levels (not shown).

Having demonstrated the relationship between civil war and soccer cards, we next explore the intermediate links from civil war to cultural norms regarding violence, and from these norms to soccer cards. The analysis of attitudes towards violence is based on responses to the 1994-1999 wave of the World Values Survey (WVS 1995), using a question that captures the

notion of violence norms. Respondents were asked to respond to the following statement: “Using violence to pursue political goals is never justified.” The possible answers are “Agree Strongly” (1), “Agree” (2), “Disagree” (3), and “Disagree Strongly” (4). Thus higher scores denote a greater tolerance for the use of political violence.

The WVS provides the age of respondents, and we use this information to capture the number of years between the respondent’s birth and age 21 that the respondent’s country experienced civil war, in a manner analogous to Table 3, regression 1. Regressing violence norms on the years before age 21 that the respondent’s country experienced civil war, we find a strong positive correlation: the point estimate is 0.023 (t-statistic 3.77, regression not shown). As discussed above, causality may run in both directions but this is not a leading concern since, either way, civil war represents a good proxy for cultural norms vis-a-vis violence, supporting our interpretation of this variable.

These violence norms are also strongly related to yellow and red cards in our sample. Regressing yellow cards on the average response to the WVS question in the player’s home country, we find a strong positive relationship between violence norms and yellow cards (Table 3, regression 4), and this is also true for red cards (regression 5). Yet, just as in Table 2, the result does not hold for goals scored (regression 6), providing a useful specification check. There is suggestive evidence that the effect of civil wars on yellow cards likely passes through violence norms. Civil war is no longer statistically significantly associated with yellow cards earned when violence norms are directly controlled for in the regression, and the point estimate on civil wars drops sharply (Table 3, regression 7).²⁰ While not conclusive, due to possible feedback between civil war and cultural norms in both directions, this result is consistent with

²⁰ Using just the subsample of countries with WVS data, the link between yellow cards and the civil war measure holds: coefficient estimate 0.012, z-statistic 2.51 (not shown).

the hypothesis that cultural norms serve as a major channel through which civil wars affect violence on the soccer pitch. Results are unchanged when we consider the WVS country averages for the entire population as opposed to young men alone; when we control for GDP and the rule of law; and when we consider red cards (results not shown).

4. Conclusion

We exploit the natural experiment offered by the presence of thousands of international soccer players all playing within a common institutional environment in the European soccer leagues to identify the effects of cultural norms on violent conduct. We find that the player's home country's history of civil conflict is strongly associated with violent behavior on the soccer pitch, as captured in yellow and red cards, but not other dimensions of play, such as goals scored. The data also offer support for the claim that civil wars contribute to violent conduct on the soccer field through the channel of cultural norms. The leading interpretation is that national cultures of violence accompany these soccer players as they move to Europe. As Michel Platini, the former French star and current UEFA president, put it, soccer players approach the game as "a way of being, a culture" (Kuper 2006).

By demonstrating a significant relationship between norms and individual-level violent conduct while controlling for institutions, this paper addresses Snyder's (2002) major critique of norms-based theories in International and Comparative politics. In doing so, it lends support to claims that the study of cultural norms is a worthwhile and policy relevant social scientific enterprise. Our findings also suggest specific ways forward for incorporating culture into cross-country regression analyses. While this paper has only produced a revealed preference measure of violent conduct on the soccer pitch for two years, the dataset could be readily extended to create a longer time series, which might be useful for applications requiring panel data. An

immediate application would be to the study of inter-state war in International Relations. A large cross-country literature suggests that institutions affect the propensity of nations to go to war with each other, but support for these claims rests on regression specifications that ignore the possible role of cultures of violence, which are captured in this paper's soccer cards measure.

That said, we are aware of the need to resist over-interpreting our results; the extrapolation of results from our setting (the soccer field) to the battlefield or violent crime should be done with great caution. Yet to the extent that our results do generalize, and cultures of violence are persistent and qualitatively important, the findings suggest that policymakers need to address cultural factors head-on. Interventions to reduce violent conduct might include conflict resolution or peace-building school curricula in post-war societies, or community projects to alter prevailing norms regarding the use of violence in high-crime neighborhoods. The systematic impact evaluation of programs to modify local culture constitutes a promising and novel research avenue for scholars studying civil war prone developing countries or high-crime communities within wealthy societies.²¹

References

Andersen, Thor Einar, Lars Engebresten, and Roland Bahr. 2004. "Rule Violations as a Cause of Injuries in Male Norwegian Professional Football," *American Journal of Sports Medicine*, 32: 62-68.

Archer, Dane and Rosemary Gartner. 1976. "Violent Acts and Violent Times: A Comparative Approach to Postwar Homicide Rates," *American Sociological Review* ,41 (December):937-63.

Archetti, Eduardo P. and Amilcar G. Romero. 1994. "Death and violence in Argentinean football," in Richard Giulianotti, Norman Bonney, and Mike Hepworth (eds.). *Football, Violence, and Social Identity*. London: Routledge.

Becker, Gary. 1968. "Crime and Punishment: An Economic Approach," *Journal of Political Economy*, 76: 169-217.

²¹ See Collier and Vicente (2008) for a recent example.

- Belsley, David A., Edwin Kuh and Roy E. Welch. 1980. *Regression Diagnostics*. Wiley.
- Bisin, Alberto and Thierry Verdier. 2000. "Beyond the Melting Pot: Cultural Transmission, Marriage, and the Evolution of Ethnic and Religious Traits," *Quarterly Journal of Economics*, 115, 955-88.
- Chiappori, P.-A., S. Levitt, and T. Groseclose. 2002. "Testing Mixed-Strategy Equilibria When Players Are Heterogeneous: The Case of Penalty Kicks in Soccer," *American Economic Review*, 92 (4), 1138-1151
- Collier, Paul, and Pedro C. Vicente. 2008. "Votes and Violence: Experimental Evidence from a Nigerian Election", unpublished working paper.
- Dobson, Stephen and John Goddard. 2001. *The Economics of Football*. Cambridge University Press.
- Duggan M. and Levitt S.D. 2002. "Winning Isn't Everything: Corruption in Sumo Wrestling," *American Economic Review*, Volume 92, Number 5: 1594-1605.
- Ember, Carol and Melvin. 1994. "War, Socialization, and Interpersonal Violence: A Cross Cultural Study," *Journal of Conflict Resolution*, 38 (4): 620-646.
- Fernandez, Raquel and Alessandra Fogli. 2005. "Culture: An Empirical Investigation of Beliefs, Work, and Fertility," NBER Working Paper #11268.
- Fisman, Ray, and Edward Miguel. (2007). "Cultures of Corruption: Evidence from Diplomatic Parking Tickets," *Journal of Political Economy*, 115(6), 1020-1048.
- Garicano, Luis, and Ignacio Palacios-Huerta. 2006. "Sabotage in Tournaments: Making the Beautiful Game a Bit Less Beautiful," mimeo, University of Chicago.
- Guiso, Luigi, Paola Sapienza, and Luigi Zingales. 2006. "Does Culture Affect Economic Outcomes?," *Journal of Economic Perspectives*, 20, 23-48.
- Kalyvas, Stathis. 2006. *The Logic of Violence in Civil War*. Cambridge University Press.
- Krosnick, J.A. and Alwyn. D.F. 1989. "Aging and Susceptibility to Attitude Change. " *Journal of Personality and Social Psychology*," 57, 416-425.
- Kuper, Simon. 2004. *Soccer Against the Enemy*. New York: Nation Books.
- Levitt, S. D. 2002. "Testing the economic model of crime: the National Hockey League's two-referee experiment," *The Berkeley Electronic Journals in Economic Analysis and Policy*, 1: 1-19.
- Milanovic, Branco. 2005. "Globalization and goals: does soccer show the way?," *Review of International Political Economy*, vol:12 (5)

- Price, Joe and Justin Wolfers, 2007, "Racial Discrimination among NBA Referees", NBER Working Paper #13206.
- Smith, Michael D. 1979a. "Hockey Violence: A Test of the Violent Subculture Hypothesis," *Social Problems*, Vol. 27, No. 2: 235-247.
- Smith, Michael D. 1979b. "Towards an Explanation of Hockey Violence: A Reference Other Approach," *Canadian Journal of Sociology*, Vol. 4, No. 2: 105-124.
- Snyder, Jack. 2002. "Anarchy and Culture: Insights from the Anthropology of War." *International Organization*, Vol. 56, No. 1 (Winter), 7-45.
- Soyinka, Wole. 2006. *You Must Set Forth at Dawn: A Memoir*. Random House: New York.
- Spolaore, Enrico and Romain Wacziarg. 2006. "The Diffusion of Development," NBER Working Paper #12153.
- Tabellini, Guido. 2005. "Culture and Institutions: Economic Development in the Regions of Europe," CESifo Working Paper # 1492.
- Waldmann, Peter. 2007. "Is There a Culture of Violence in Colombia?," *International Journal of Conflict and Violence*, 1 (1), 61-75.
- Weinstein, Marc D., Michael D. Smith, and David L. Wiesenthal. 1995. "Masculinity and Hockey Violence," *Sex Roles*, Vol 33, Nos. 11/12.
- Witt, Robert. 2005. "Do Players React to Sanction Changes? Evidence from the English Premier League," *Scottish Journal of Political Economy*, 52: 623-640.
- World Bank. 2003. *Breaking the Conflict Trap: Civil War and Development Policy*. World Bank: Washington, DC.
- World and European Values Surveys Four Wave Integrated Data File, 1981-2004, v.20060423, 2006. The World Values Survey Association (www.worldvaluessurvey.org) and European Values Study Foundation (www.europeanvalues.nl).

Table 1: Descriptive Statistics

Variable	Mean	Std. dev.	Min.	Max.	Obs.
<i>Rule infractions</i>					
Yellow cards per player-season	2.43	2.73	0	16	5035
Red cards per player-season	0.15	0.41	0	3	5035
Regular (no-card) fouls per player-season	13.69	16.78	0	108	2660
<i>Country characteristics</i>					
Years of civil war (1980-2005)	2.74	4.74	0	26	5035
Rule of Law (2005-2006)	0.85	0.89	-1.76	2.10	5035
GNI per capita (2006)	26,203	10,923	720	44,260	4965
<i>World Values Survey</i>					
Violence norms (Use of Violence Justified)	1.74	0.20	1	4	2323
<i>Player characteristics</i>					
Age	26.0	4.40	17	41	5035
Weekly Salary (in '000 USD)	24.0	27.0	0	190.0	5034
Transfer Fee (in '000 USD)	6,323.5	8,189.5	3.0	78,000.0	5035
Games Started	13.80	11.48	0	40	5035
Substitute	3.13	3.89	0	29	5035
Goalie	0.08	0.27	0	1	5035
Defender	0.33	0.47	0	1	5035
Forward	0.23	0.42	0	1	5035
Midfield	0.36	0.48	0	1	5035
Goals Scored per player-season	1.65	3.12	0	31	5035
<i>Player region of origin</i>					
Africa	0.07	0.26	0	1	5035
Asia	0.004	0.06	0	1	5035
Latin America/Caribbean	0.12	0.33	0	1	5035
Eastern Europe	0.07	0.25	0	1	5035
OECD	0.72	0.45	0	1	5035
<i>Soccer leagues</i>					
English League	0.17	0.38	0	1	5035
European Champions League	0.19	0.39	0	1	5035
French League	0.15	0.36	0	1	5035
German League	0.14	0.35	0	1	5035
Italian League	0.17	0.38	0	1	5035
Spanish League	0.16	0.37	0	1	5035

Notes: The source of the rule infraction, goals, player characteristics, player country of origin, and soccer leagues data is the ESPN *Soccernet* website. The source of the civil war data is the PRIO/Uppsala *Armed Conflict Database*, and the source of the rule of law variable is the *Worldwide Governance Indicators* (WGI) project. Income per capita is measured in Purchasing Power Parities (2006 dollars); source: World Bank's *World Development Indicators* (2007). Weekly salaries and transfer fees are expressed in current US Dollars; source: *Football Manager 2005*, and *World Soccer Manager 2006*. The variable measuring attitudes towards violence is based on responses to the 1994-1999 wave of the World Values Survey (WVS1995).

Table 2: Empirical Results: Civil War History and Soccer Outcomes

	Yellow Cards (1)	Yellow Cards (2)	Yellow Cards (3)	Red Cards (4)	Goals Scored (5)
<i>Country characteristics</i>					
Years of civil war	0.0076 (2.63) ^{***}	0.0078 (2.51) ^{**}	0.0075 (2.59) ^{***}	0.0126 (1.92) [*]	0.0001 (0.02)
Log GNI per capita		0.046 (1.06)			
Rule of Law			-0.019 (0.40)	-0.143 (1.46)	0.0061 (0.15)
<i>Player characteristics</i>					
Age	0.013 (5.65) ^{***}	0.013 (5.40) ^{***}	0.013 (5.64) ^{***}	0.013 (1.74) [*]	0.021 (3.20) ^{***}
Log transfer fee	0.032 (2.33) ^{**}	0.031 (2.22) ^{**}	0.032 (2.33) ^{**}	0.063 (2.11) ^{**}	0.322 (11.88) ^{***}
Games Started	0.067 (36.09) ^{***}	0.068 (37.78) ^{***}	0.067 (36.17) ^{***}	0.051 (18.30) ^{***}	0.087 (40.16) ^{***}
Substitute	0.041 (10.93) ^{***}	0.041 (10.83) ^{***}	0.041 (10.89) ^{***}	0.011 (0.89)	0.069 (13.65) ^{***}
Defender	1.715 (14.73) ^{***}	1.713 (14.79) ^{***}	1.714 (14.71) ^{***}	1.113 (7.20) ^{***}	
Forward	1.397 (11.06) ^{***}	1.399 (11.13) ^{***}	1.396 (11.05) ^{***}	0.720 (4.00) ^{***}	1.647 (21.26) ^{***}
Midfield	1.729 (12.67) ^{***}	1.728 (12.68) ^{***}	1.728 (12.66) ^{***}	0.889 (4.45) ^{***}	0.679 (11.31) ^{***}
Goalie					-18.216 (54.31) ^{***}
Goals	-0.022 (5.81) ^{***}	-0.022 (6.29) ^{***}	-0.022 (5.83) ^{***}	-0.028 (3.37) ^{***}	
<i>Player region of origin</i>					
Africa	0.055 (1.06)	0.173 (1.45)	0.018 (0.18)	-0.112 (0.48)	0.099 (0.88)
Asia	-0.411 (2.05) ^{**}	-0.381 (2.00) ^{**}	-0.435 (2.02) ^{**}	-0.637 (1.70) [*]	-0.124 (0.51)
Eastern Europe	-0.027 (0.43)	-0.037 (0.43)	-0.056 (0.57)	-0.108 (0.49)	0.116 (1.58)
Latin America	0.034 (0.46)	0.082 (1.11)	0.003 (0.03)	-0.061 (0.33)	0.172 (1.68) [*]
League fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	5035	4965	5035	5035	5035

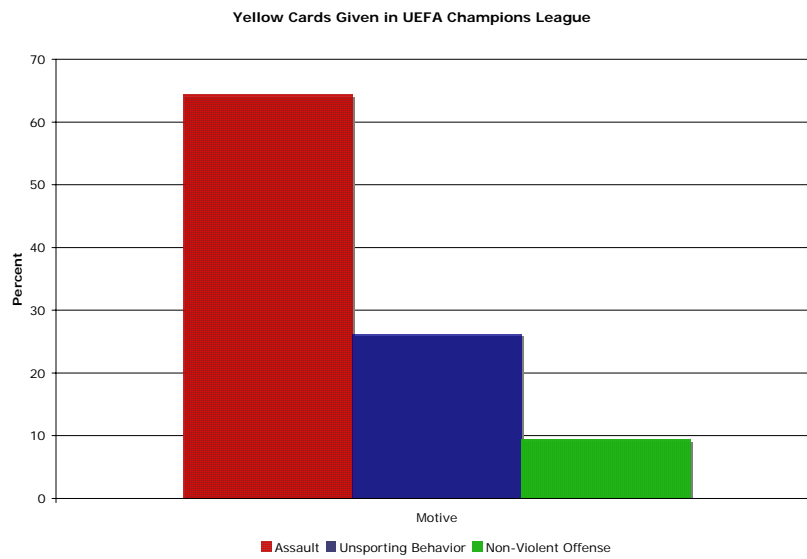
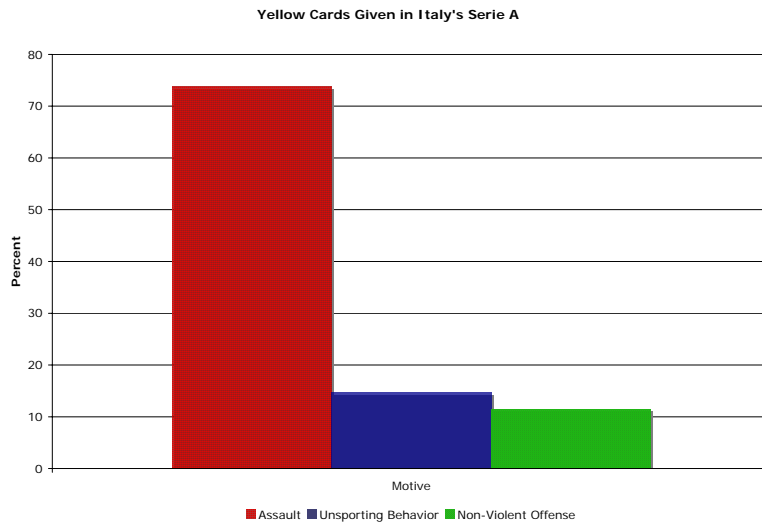
Notes: The dependent variables are per player-season. Columns 1-5 contain the results of negative binomial specifications with disturbance terms clustered at the country level. The omitted categories in columns 1-4 are Goalie (for field position), OECD (for region), and the English Premier League (for league); in column 5, the baseline categories are Defender (for field position), OECD (for region), and the English Premier League (for league). The league fixed effect results are not shown. Z-statistics are in parentheses. Statistical significance at 90% (*), 95% (**), and 99% (***) confidence levels.

Table 3: Empirical Results: Cultural Norms and Soccer Outcomes

	Yellow Cards (1)	Yellow Cards (2)	Red Cards (3)	Yellow Cards (4)	Red Cards (5)	Goals Scored (6)	Yellow Cards (7)
<i>Country characteristics</i>							
Civil war years (until 21)	0.0065 (1.98)**						0.0051 (0.78)
Civil war years pre-birth		0.0001 (0.02)	-0.005 (0.49)				
Civil war years post-birth		0.0067 (1.79)*	0.017 (2.12)**				
Violence norms (WVS)				0.382 (2.18)**	0.501 (2.14)**	-0.082 (0.36)	0.338 (1.63)
<i>Player characteristics</i>							
Age	0.012 (5.05)***	0.012 (5.41)***	0.010 (1.49)	0.011 (2.88)***	0.006 (0.49)	0.009 (0.91)	0.011 (2.78)***
Log transfer fee	0.034 (2.55)**	0.032 (2.30)**	0.062 (2.08)**	0.015 (0.60)	0.078 (1.58)	0.346 (9.76)***	0.016 (0.64)
Games Started	0.067 (36.52)***	0.067 (36.04)***	0.051 (18.45)***	0.073 (55.96)***	0.053 (12.38)***	0.088 (20.27)***	0.073 (54.28)***
Substitute	0.041 (10.91)***	0.041 (10.97)***	0.011 (0.89)	0.038 (8.26)***	0.021 (1.08)	0.071 (9.52)***	0.038 (8.23)***
Defender	1.713 (14.66)***	1.713 (14.63)***	1.116 (7.27)***	1.612 (9.06)***	0.941 (4.67)***		1.607 (8.96)***
Forward	1.393 (10.90)***	1.394 (10.94)***	0.719 (4.01)***	1.289 (6.87)***	0.277 (1.24)	1.550 (14.99)***	1.284 (6.75)***
Midfield	1.727 (12.58)***	1.727 (12.62)***	0.889 (4.48)***	1.577 (7.98)***	0.572 (2.81)***	0.646 (8.89)***	1.573 (7.89)***
Goalie						-17.079 (33.99)***	
Goals	-0.022 (5.80)***	-0.022 (5.78)***	-0.027 (3.26)***	-0.025 (4.83)***	-0.031 (3.13)***		-0.025 (4.83)***
<i>Player region of origin</i>							
Africa	0.063 (1.15)	0.064 (1.16)	0.159 (1.49)	-0.327 (3.16)***	0.234 (1.29)	0.158 (1.25)	-0.312 (2.99)***
Asia	-0.371 (1.81)*	-0.373 (1.85)*	-0.427 (1.31)				
Eastern Europe	-0.023 (0.36)	-0.023 (0.35)	0.105 (0.57)	-0.018 (0.23)	0.294 (1.36)	0.116 (1.44)	-0.008 (0.10)
Latin America	0.031 (0.43)	0.032 (0.42)	0.159 (2.32)**	0.088 (1.25)	0.417 (3.50)***	0.176 (1.73)*	0.087 (1.18)
League fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5035	5035	5035	2323	2323	2323	2323

Notes: In all columns, the dependent variables are per player-season. These columns contain the results of negative binomial specifications with disturbance terms clustered at the country level. The omitted categories in columns 1-5 and 7 are Goalie (for field position), OECD (for region), and the English Premier League (for league); in column 6, the baseline categories are Defender (for field position), OECD (for region), and the English Premier League (for league). The league fixed effect results are not shown. Z-statistics are in parentheses. Statistical significance at 90% (*), 95% (**), and 99% (***) confidence levels.

Figure 1: Yellow Cards according to Type of Offense



Sources: Top panel, Research Department of Lega Nazionale Professionisti (Italy); Bottom panel, UEFA.

Figure 2: Yellow Cards and Country Civil War History
(conditional on control variables in Table 2, regression 1) – All Countries

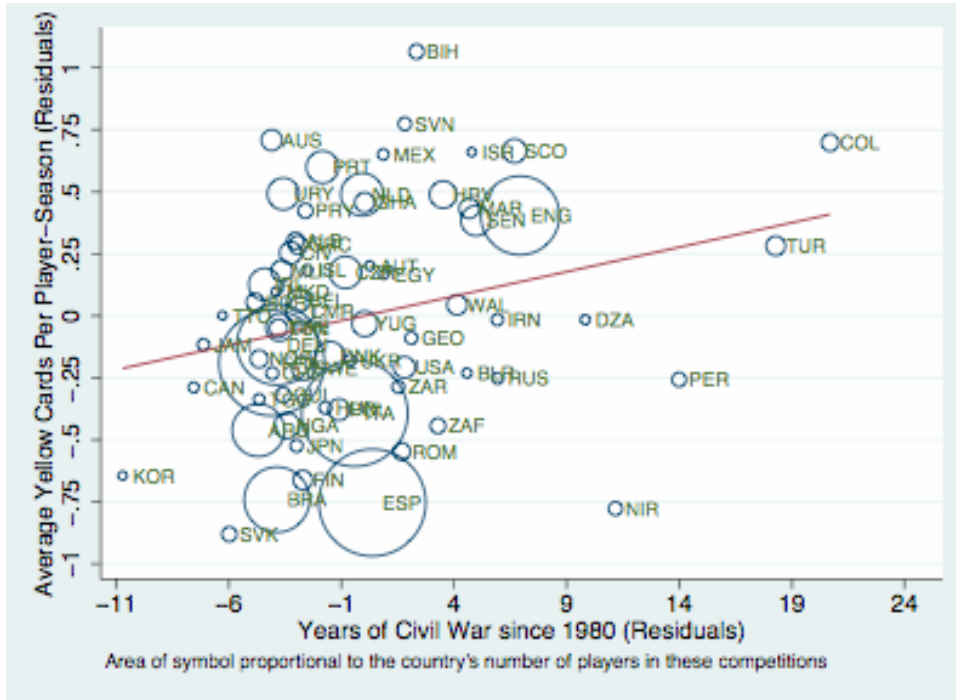


Figure 3: Yellow Cards and Country Civil War History
(conditional on control variables in Table 2, regression 1) – Non-OECD Countries

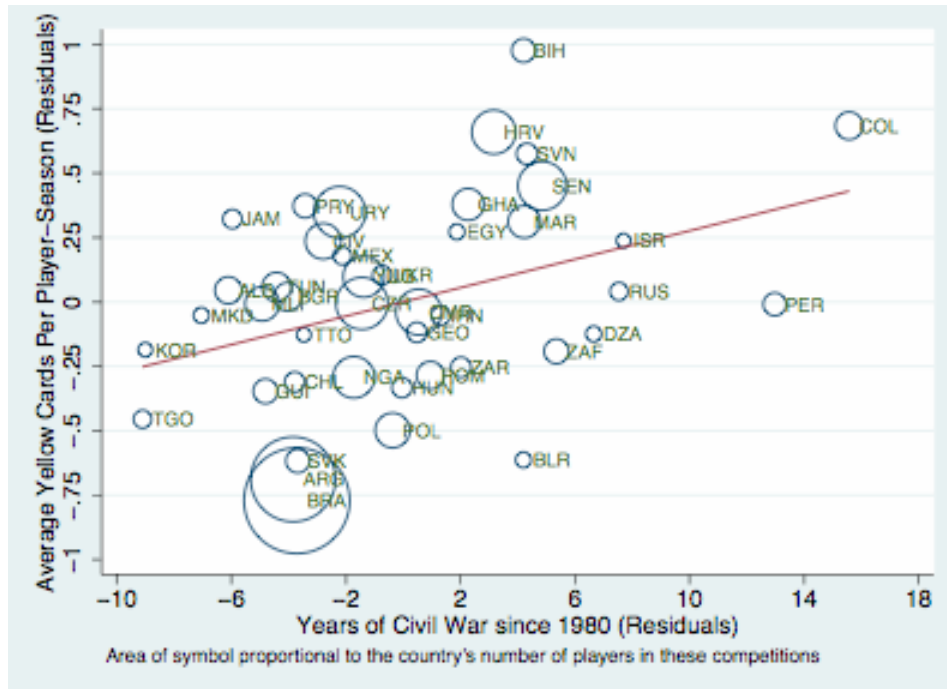
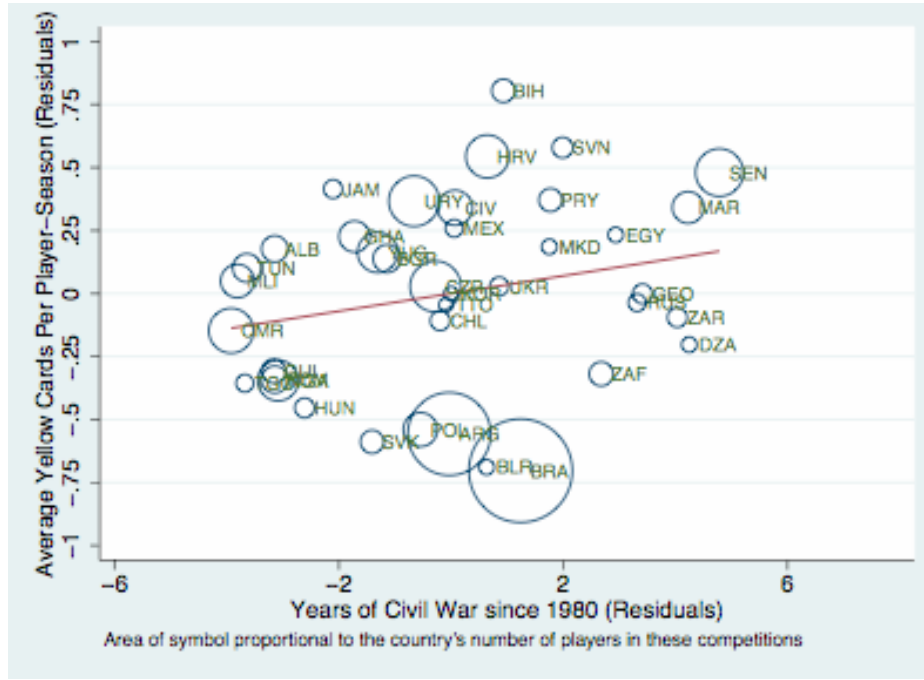


Figure 4: Yellow Cards and Country Civil War History
 (conditional on control variables in Table 2, regression 1) - Non-OECD Countries, excluding Colombia, Iran, Israel, Peru, and Turkey.



Appendix Table 1: Countries and Players Represented in the Main Sample

<i>Country</i>	<i>Obs.</i>	<i>Yellow cards</i>	<i>Civil war years</i>	<i>WVS</i>	<i>Country</i>	<i>Obs.</i>	<i>Yellow cards</i>	<i>Civil war years</i>	<i>WVS</i>
Albania (ALB)	18	2.88	0	1.62	Macedonia (MKD)	6	4.16	1	1.40
Algeria (DZA)	6	1.50	15		Mali (MLI)	29	3.03	2	
Argentina (ARG)	178	2.91	0	1.69	Mexico (MEX)	8	3.62	2	1.95
Australia (AUS)	28	2.57	0	1.74	Morocco (MAR)	26	3.15	10	
Austria (AUT)	6	1.66	0		Netherlands (NLD)	118	2.06	0	
Belarus (BLR)	6	1.50	0		Nigeria (NGA)	43	1.81	1	2.22
Belgium (BEL)	34	1.91	0		Northern Ireland (NIR)	12	1.00	13	
Bosnia and Herzegovina (BIH)	14	2.92	4	1.92	Norway (NOR)	20	1.75	0	1.33
Brazil (BRA)	277	2.44	0	1.34	Paraguay (PRY)	14	2.42	1	
Bulgaria (BGR)	20	2.55	0	1.87	Peru (PER)	13	1.38	19	2.71
Cameroon (CMR)	52	2.28	1		Poland (POL)	30	1.00	0	
Canada (CAN)	7	3.71	0		Portugal (PRT)	68	3.02	0	
Chile (CHL)	10	3.80	0	1.63	Romania (ROM)	19	1.21	1	1.88
Colombia (COL)	19	4.79	26	2.09	Russia (RUS)	8	1.75	13	1.85
Congo DR (ZAR)	10	2.50	6		Scotland (SCO)	37	2.16	13	
Croatia (HRV)	48	2.37	3	1.54	Senegal (SEN)	59	2.25	10	
Czech Republic (CZE)	67	2.24	0	1.87	Serbia (SRB)	8	1.75	3	
Denmark (DNK)	58	1.84	0		Serbia and Montenegro (YUG)	48	2.83	3	1.95
Egypt (EGY)	6	1.00	6		Sierra Leone	5	2.00	10	
England (GBR)	402	2.17	13		Slovak Republic (SVK)	14	0.92	0	1.93
Finland (FIN)	24	1.08	0	1.30	Slovenia (SVN)	11	1.63	0	2.00
France (FRA)	721	2.48	0		South Africa (ZAF)	15	1.06	9	
Georgia (GEO)	10	3.20	4	1.78	South Korea (KOR)	5	1.00	0	
Germany (DEU)	424	2.00	0	1.71	Spain (ESP)	742	2.91	5	1.79
Ghana (GHA)	25	2.40	2		Sweden (SWE)	35	1.77	0	1.49
Greece (GRC)	22	2.13	0		Switzerland (CHE)	49	2.40	0	1.34
Guinea (GIN)	15	2.33	2		Togo (TGO)	8	0.75	2	
Hungary (HUN)	10	0.90	0	1.79	Trinidad and Tobago (TTO)	5	0.20	1	
Iceland (ISL)	8	2.00	0		Tunisia (TUN)	21	2.33	1	
Iran (IRN)	9	2.33	19		Turkey (TUR)	24	2.25	22	1.69
Ireland (IRL)	67	1.89	0		Ukraine (UKR)	9	1.44	0	1.94
Israel (ISR)	5	4.80	26		United States (USA)	30	0.96	4	1.81
Italy (ITA)	730	2.81	0		Uruguay (URY)	66	2.89	0	1.85
Ivory Coast (CIV)	49	3.26	3		Wales (WAL)	26	2.19	13	
Jamaica (JAM)	9	1.77	0		TOTAL countries	70			
Japan (JPN)	10	1.50	0	1.40	TOTAL observations	5035			

Notes: The source of this data is the ESPN *Soccernet* website. We include all countries with at least five player-seasons represented in the leagues for which we have data. The *Yellow cards* column shows the average number of yellow cards per player/season by nationals of each respective country. The *Civil war years* column shows the number years of civil war since 1980 in the respective country. The *WVS* column shows the average value of country respondents to the statement: “Using violence to pursue political goals is never justified”, on a scale of 1-4.

Appendix Table 2: Addressing Outliers

	Yellow Cards – Belsley et al.	Yellow Cards – No OECD	Yellow Cards – No OECD, No Colombia	Yellow Cards – No Colombia	Yellow Cards – Log Civil War	Yellow Cards – Country level regressions
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Country characteristics</i>						
Years of civil war	0.0093 (3.47) ^{***}	0.0134 (3.87) ^{***}	0.0169 (2.25) ^{**}	0.0063 (1.86) [*]		0.0081 (2.31) ^{**}
Log years of civil war					0.0559 (2.30) ^{**}	
<i>Player characteristics</i>						
Age	0.011 (5.64) ^{***}	0.002 (0.36)	0.019 (0.29)	0.013 (5.48) ^{***}	0.013 (5.57) ^{***}	0.012 (0.64)
Log transfer fee	0.023 (1.60)	0.018 (0.61)	0.019 (0.62)	0.032 (2.32) ^{**}	0.032 (2.33) ^{**}	-0.034 (0.31)
Games Started	0.065 (35.22) ^{***}	0.072 (27.41) ^{***}	0.073 (27.54) ^{***}	0.068 (36.08) ^{***}	0.067 (36.16) ^{***}	0.058 (5.44) ^{***}
Substitute	0.041 (12.19) ^{***}	0.037 (5.89) ^{***}	0.037 (5.72) ^{***}	0.040 (10.76) ^{***}	0.041 (10.93) ^{***}	0.004 (0.13)
Defender	1.645 (13.47) ^{***}	1.727 (11.30) ^{***}	1.739 (11.27) ^{***}	1.716 (14.73) ^{***}	1.716 (14.72) ^{***}	1.823 (3.30) ^{***}
Forward	1.313 (9.95) ^{***}	1.476 (9.24) ^{***}	1.491 (9.24) ^{***}	1.401 (11.04) ^{***}	1.398 (11.05) ^{***}	1.193 (2.03) ^{**}
Midfield	1.639 (11.88) ^{***}	1.771 (11.15) ^{***}	1.775 (10.96) ^{***}	1.729 (12.66) ^{***}	1.729 (12.67) ^{***}	1.535 (3.01) ^{***}
Goalie						
Goals	-0.018 (5.15) ^{***}	-0.033 (5.13) ^{***}	-0.033 (5.19) ^{***}	-0.022 (5.79) ^{***}	-0.022 (5.81) ^{***}	0.004 (0.10)
<i>Player region of origin</i>						
Africa	0.046 (0.89)	-0.183 (0.23)	-0.035 (0.45)	0.579 (1.08)	0.082 (1.62)	-0.041 (0.45)
Asia	-0.382 (2.09) ^{**}	-0.531 (3.23) ^{***}	-0.595 (3.13) ^{***}	-0.391 (1.93) [*]	-0.371 (1.76) [*]	-0.431 (2.50) ^{**}
Eastern Europe	-0.010 (0.18)			-0.027 (0.43)	-0.018 (0.28)	-0.088 (1.19)
Latin America	0.028 (0.51)	0.020 (0.25)	0.024 (0.29)	-0.026 (0.34)	0.035 (0.47)	-0.042 (0.44)
League fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4919	1333	1314	5016	5035	68

Notes: The dependent variables are per player-season. Columns 1-6 contain the results of negative binomial specifications with disturbance terms clustered at the country level. The omitted categories in columns 1 and 4-6 are Goalie (for field position), OECD (for region), and the English Premier League (for league); in columns 2-3, the baseline category for region is Eastern Europe. The league fixed effect results are not shown. Z-statistics are in parentheses. Statistical significance at 90% (*), 95% (**), and 99% (***) confidence levels.