Emotional Judges and Unlucky Juveniles[†]

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Employing the universe of juvenile court decisions in a US state between 1996 and 2012, we analyze the effects of emotional shocks associated with unexpected outcomes of football games played by a prominent college team in the state. We find that unexpected losses increase sentence lengths assigned by judges during the week following the game. Unexpected wins, or losses that were expected to be close contests ex ante have no impact. The effects of these emotional shocks are asymmetrically borne by black defendants. The impact of upset losses on sentence lengths is larger for defendants if their cases are handled by judges who received their bachelor's degrees from the university with which the football team is affiliated. Different falsification tests and a number of auxiliary analyses demonstrate the robustness of the findings. These results provide evidence for the impact of emotions in one domain on decisions in a completely unrelated domain among a uniformly highly educated group of individuals (judges) who make decisions after deliberation that involve high stakes (sentence lengths). They also point to the existence of a subtle and previously unnoticed capricious application of sentencing. (JEL D83, I23, J13, J15, K42, L83, Z21)

It has been documented that emotions in one domain influence decisions in a completely unrelated domain. For example, sunshine improves mood (e.g., Schwarz and Clore 1983), and there is a positive relationship between sunshine and stock market performance (Kamstra, Kramer, and Levi 2003; Hirshleifer and Shumway 2003). Edmans, García, and Norli (2007) show that controlling for pregame expected outcome, there is a short-lived but significant stock market

decline after a loss of international soccer games (e.g., a World Cup game) in the country of the national team that lost the game, presumably because the results of such important games drive the moods of the residents of the country. More generally, it has been shown that emotions have powerful impacts on judgments, decisions, and choices. Anger and sadness can influence judgments (Bodenhausen, Sheppard, and Kramer 1994; Keltner, Ellsworth, and Edwards 1993). When one's sense of well-being is low, one spends more time focusing on negative attributes of others (Forgas 1995b), and feelings of disgust can intensify the extent of moral condemnation (Schnall et al. 2008). As summarized by Lerner et al. (2015), "incidental anger triggered in one situation automatically elicits a motive to blame individuals in another situation even though the targets of such anger have nothing to do with the source of the anger (Quigley and Tedeschi 1996). Moreover, carryover of incidental emotions occurs without awareness."

In this paper, we investigate whether emotional shocks, experienced by a highly educated group of individuals, have any impact on these individuals' professional behavior, which, by law, should be free of personal feelings and biases. We postulate that unexpected negative outcomes of football games might trigger such feelings as anger, frustration, and sadness for the fans, and we investigate whether unexpected outcomes of football games played by a prominent college team—Louisiana State University (LSU)—influence judicial decisions handed down by judges in Louisiana.

We employ the Las Vegas pregame point spread as fans' (judges in our case) rational expectations about the outcome of the game. To the extent that pregame point spread provides efficient prediction of game outcomes, controlling for the spread allows us to interpret any differential impact between a win and a loss as the causal impact of the game outcome (Card and Dahl 2011). A key background to our analysis is the fact that the LSU football team, with its long and successful history in college football, has an enormous group of loyal followers. The fan base of the team goes well beyond the student body of the university: average attendance to home games was around 92,500 between 1996 and 2012.[1] Clotfelter (2015) details the extent of fans' devotions and their emotional ties to college teams.[2]

By special permission from Louisiana Department of Public Safety and Corrections, Youth Services, Office of Juvenile Justice, we obtained access to the universe of defendant files from 1996 to 2012. For each file, we have basic demographic

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[1] Describing LSU football just as an event would be a huge understatement for the residents of the state of Louisiana. Devotion to LSU football is deeply ingrained into the culture of the state. Weddings are scheduled based on LSU games, convention halls and similar organizations are besieged by phone calls the moment LSU schedule for the following football season is finalized, and charitable organizations have their fund-raising events scheduled on the nongame weeks (Feinswog 2013). Note that the popularity of college football in the United States is not limited to Louisiana. Average attendance to college football games among all Division I teams was around 45,000 in 2012. Average attendance among the top-20 teams was more than 75,000. Moreover, around 216 million viewers tuned in to watch the regular college football season with another 126 million watching the bowl games (National Football Foundation 2013).

[2] A number of papers have investigated the impact sports activities on outcomes ranging from crime to disease prevalence (Stoecker, Sanders, and Barreca 2016; Kirby, Francis, and O'Flaherty 2014; Munyo and Rossi 2013; Campaniello 2013; Rees and Schnepel 2009). The mechanisms behind these effects range from frustration/happiness and consumption of alcohol due to game results to the infusion of people into the local area and crowding due to the sports event.

information on the defendants, details of the offense committed, as well as information on the disposition (sentence) length and disposition type (i.e., custody or probation). The files also contain identifiers that allow us to gather information on the race, gender, age, and party affiliation of judges who adjudicated these cases, as well the law school and the undergraduate institution from which they graduated. We link our defendant-judge paired data to the record of the LSU football team over the same time period to analyze the impact of unexpected game outcomes on judicial decision.

Our results provide important insights. We find that upset losses (i.e., losses by LSU football team when it was expected to win) increase the sentence length imposed by judges on juvenile defendants. In contrast, upset wins (i.e., games won by LSU when it was expected to lose) have no significant impact on sentence lengths. Similarly, close losses (games lost by LSU when the outcome was uncertain ex ante) have no impact. A number of robustness analyses confirm our results. A placebo test based on unexpected game results of other prominent college football teams shows that non-LSU games have no impact on judge behavior. Similarly, judicial decisions are not impacted by LSU games played the following week. We find that these impacts are stronger for judges who received their bachelor's degrees from LSU. We also find that the impact is larger for trials that take place after an upset loss in an important game (when LSU was ranked in the top 10 of the Associated Press Rankings). Analyses based on juvenile defendants' race provide information pertaining to disparity of treatment and they shed light on the application of the equal protection clause of the law. Our results suggest that the brunt of the burden of judges' reaction is borne by black defendants.

The results are important for a number of reasons. First, they provide evidence for the impact of emotions on decisions in an environment where the decision-makers are uniformly highly educated, and when the decisions in question should have been bound by institutional restrictions and ethics. Specifically, application of the relevant legal principles to the facts of the case is expected to eliminate arbitrary and capricious decisions by judges. Yet, we find that the severity of sentences handed down by judges is impacted by the results of a football game for those judges who are more likely to be emotionally attached to the team. Although most standard economic models assume that decisions, especially high-stake decisions, are made rationally, this finding underscores the importance of emotions in decision making even in a high-stake environment.[3]

The second contribution of the paper is related to the investigation of whether the judicial process is unbiased. It is well-documented that inequalities exist in the application of the law to different groups of individuals (e.g., Argys and Mocan 2004; Shayo and Zussman 2011; Abrams, Bertrand, and Mullainathan 2012; Alesina and La Ferrara 2014). A different layer of complication arises in the application of the law because some of the capricious judicial decisions seem arguably unintentional.

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[3] The results are also consistent with models of expectation-based, reference-dependent preferences that postulate economic agents assess the outcome of a choice by its departure from a reference point that is determined by the probabilistic beliefs about that outcome held in the past (Kahneman and Tversky 1979, Kőszegi and Rabin 2006).

For example, Danziger, Levav, and Avnaim-Pesso (2011a) show that the propensity of judges to make favorable parole decisions goes down significantly as they adjudicate the cases sequentially; and that judges' propensity to be lenient jumps up after a food break. Their finding suggests a "decision fatigue" of judges that results in differential treatment of defendants based on the time of day their case is adjudicated.[4] In this paper, we find that the impact of an upset loss is observed immediately after the game (on Monday), and it lasts for one work week. Thus, it cannot be attributed to decision fatigue of judges. It is, however, consistent with the hypothesis that emotional stress (direct and self-induced, or indirect and perpetuated by others who are impacted) is responsible for judges' behavior. Our finding that the impact is stronger for those judges who have received their bachelor's degrees from LSU suggests that emotional shocks are the driver of this behavior.[5]

Although harsher punishment handed down by judges is not deliberate (because it is triggered by an emotional shock), we find some evidence that black defendants bear much of the burden of judges' wrath due to this emotional shock, which hints at a negative predisposition toward black defendants. This result, coupled with the fact that there are no race-related differences in the disposition length in the absence of judges' emotional stress, is suggestive of the existence of a subtle, and previously unnoticed, bias in sentencing.[6]

The impact of race-matching between the decision maker and the person impacted by the decision is an important area of investigation. Preferential treatment of one's own racial and ethnic group (in-group bias) has been detected in the analysis of the decisions of basketball referees (Price and Wolfers 2010) and baseball umpires (Parsons et al. 2011). Most decisions of referees in professional sports are made very quickly, almost by reflex or intuition.[7] Judicial decisions, on the other hand,

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[4] Weinshall-Margel and Shaphard (2011) raised issues about the randomness of the order in which the cases are seen by judges and the timing of the meal breaks. See also the response of Danziger, Levav, and Avnaim-Pesso (2011b). Similarly, but in a different domain, Linder et al. (2014) find that primary care physicians' propensity to prescribe antibiotics for acute respiratory infections (an inappropriate decision) goes up as the clinic session gets longer, indicating that cognitive fatigue impairs judgment. Chen, Moskowitz, and Shue (2016) find negative autocorrelation in the decisions of judges, loan officers, and baseball umpires that is unrelated to the merits of the cases. They report that this behavior is consistent with decision-makers suffering from gambler's fallacy, i.e., underestimation of the likelihood of streaks occurring by chance (Rabin and Vayanos 2010, Tversky and Kahneman 1974).

[5] The impact of mood changes, triggered by unexpected losses of sports teams, has been documented in other domains. For example, Edmans, García, and Norii (2007) show that there is a short-lived stock market decline after the national soccer team loses an international soccer game. The authors show that this result cannot be explained by economic factors and stock market dynamics, and attribute it to the change in investor mood due to the loss of the national team. Card and Dahl (2011) find that unexpected losses of home teams in the National Football League (NFL) increase the domestic violence rates by men in the city in which the team is located. Chen and Spamann (2014) show that asylum grant rates in US immigration courts differ by the success of the court city's NFL team. Healy, Malhotra, and Mo (2010) investigate the electoral impact of local college football games and show that a win during the ten day window before the election day causes the incumbent to receive a higher percentage of the vote in the Senate, gubernatorial, and presidential elections. In a related, but different domain, Lindo, Swensen, and Waddell (2012) find that the grade point average of male students declines in relation to the grade point average of female students at the University of Oregon during the football seasons when the university's football team is successful, which is attributed to increased alcohol consumption of male students in response to the team's success.

[6] There are a variety of other outside factors, identified by previous research, that are unrelated to the merits of the case but end up affecting sentencing decisions. See, for example, Lim, Syder, and Strömberg (2015) and Philippe and Ouss (2016) for the relationship between media coverage of crime and sentencing decisions.

[7] Racial biases in similarly quick and consequential decisions are analyzed in other domains as well. For example, Correll et al. (2002, 2007) used subjects, ranging from police officers to college students to random members of a community, in videogame-like simulations. The subject viewed a series of images of black or white individuals, sometimes holding guns or other objects. Subjects' decisions to shoot or not to shoot the targets revealed racial

are made after deliberation. Investigation of in-group bias in judicial decision revealed mixed results. For example, Gazal-Ayal and Sulitzeanu-Kenan (2010) found in-group bias in Israeli Arab and Jewish judges' decisions on criminal cases. Schanzenbach (2005) reported that the gender and racial composition of district court's bench has no discernible impact on racial and gender disparities in sentencing. Depew, Eren, and Mocan (2017) reported a negative in-group bias in juvenile court decisions in Louisiana. Specifically, juvenile defendants who are randomly assigned to judges receive stiffer punishment if the judge is of the same race as the defendant.

In this paper, when we investigate whether white and black judges treat juvenile defendants of their own race differently following the upset loss of a football game, we are unable to reach a definitive conclusion. This is because there are only 187 white defendants in the sample whose cases are handled by black judges, and this small sample does not allow for reliable inference.[8]

The remainder of the paper is organized as follows. Section I discusses the institutional settings. Section II presents the data. Section III describes the econometric methodology. Section IV presents the results. Conclusions are provided in Section V.

I. Institutional Setting

In Louisiana, youth through age 17 may enter the juvenile justice system when they are accused of committing a crime and are arrested or referred by the police to a juvenile court.[9] Having received a formal complaint from a local law officer, the district attorney's (DA) office must decide whether or not to petition the case to the court. Prosecutors may choose not to do so because of lack of sufficient evidence. The DA's Office may also choose to enter into an informal agreement (diversion program) with the juvenile and the parents to prevent incarceration. This occasionally entails the child participating in community service, restitution, or treatment and complying with certain behavioral requirements such as satisfactory school attendance (Louisiana Children's Code CHC 631). Alternatively, prosecutors may proceed with a petition to the court. In this situation the case moves to adjudication, and the disposition, which is similar to a sentence in the adult courts, must be determined by a juvenile court judge (Louisiana Children's Code CHC 650-675). Under the provisions of the Louisiana juvenile justice system, a computer generated random allotment (open to public) is implemented on a daily basis by the Clerk's office for all cases filed in each district court (Rules for Louisiana District Courts, Chapter 14, Appendix 14.0A, various years). Thus, cases are randomly assigned to judges within each district court.

A judge may simply dismiss the case if the prosecutor is unable to provide evidence to find the youth delinquent. The juvenile would then be found not guilty and does not enter into the juvenile justice system. In this case, there is no record

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biases in the speed with which the decision are made, and both white and black subjects displayed the same shooter bias against blacks. Subjects are faster when shooting an armed black man in comparison to an armed white man; they are more careful in not shooting an unarmed white man in comparison to an unarmed black man.

[8] Most judges are white (88.5 percent) and most juveniles are black (62.6 percent) in the sample.

[9] Children under age ten are addressed through the Families in Need of Service programs.

of the juvenile in the system.[10] If the judge finds the defendant guilty, the judge has to then make a disposition decision. This involves placing the juvenile in custody (secure or nonsecure) or on probation. In either case, the judge also has to assign the disposition length (sentence length). In other words, those who are placed on probation or on nonsecure custody are also assigned a sentence length, the same way as those who are placed in secure custody. Judges are responsible for weighing the severity of the offense committed and the prior offense history of the youth.[11] In general, the judge will impose the least restrictive disposition consistent with the circumstances of the case, the health and safety of the child, and the best interest of the society (Louisiana Children's Code CHC 683). In setting the appropriate disposition, judges may also consider the predisposition investigation report prepared by probation officers involving information about youth, their risk to public safety, and their needs (Louisiana Children's Code CHC 680). Judges can set a maximum duration of disposition up to the youth's twenty-first birthday.[12]

II. Data

A. Defendant Data and LSU College Football Team Records

The defendant data for this study are obtained from the Louisiana Department of Public Safety and Corrections, Youth Services, Office of Juvenile Justice (OJJ) and include all case records from 1996 to 2012 in which juvenile was found to be delinquent. For each case record, we have information on both the juvenile defendant and the case itself. Information on the defendants include the race, gender, age, parish of residence, parish of offense, the exact statute offense committed, the date the individual was admitted into the juvenile system, and a unique individual identifier. The case data include information on the date the juvenile was disposed before the judge, the judge's decision on the case (the disposition type and disposition length), the court in which the disposition was held, and the identifier of the judge. In order to circumvent any potential confounding effects that may arise from multiple offenses and/or criminal history of the juvenile, we limit our attention to first-time delinquents ages 10 through 17 who were convicted for only one statute offense. Repeat offenders are assigned to the same judge who has handled the original case. Therefore, we excluded repeat offenders from the analysis and focused on delinquents who had their first interaction with the juvenile justice system. Using the judge identifiers provided in the OJJ administrative data, we also gathered information on judges' race, gender, political party affiliation, age,

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[10] We will return to this point later in the paper.

[11] Louisiana Children's Code requires that crimes of first degree murder, second degree murder, aggravated or first degree rape and aggravated kidnapping receive a mandatory disposition of secure custody until the age of twenty-one years without the benefit of parole, probation, suspension of imposition or execution of sentence, or modification of sentence (Louisiana Children's Code CHC 897.1). There are only 33 of such cases during the sample period. Because a guilty verdict in these cases requires mandatory sentencing, they are excluded from the analysis.

[12] Statutory exclusion laws apply to certain offenses to youth over 14 in the state of Louisiana.

the law school from which they graduated, and the university from which they have obtained their undergraduate degree.[13]

We link our defendant-judge data to LSU college football team records. Specifically, we analyze all dispositions handed down by judges during the work week following a Saturday game throughout the college football season and post season (i.e., bowl games). We analyze the decisions during the five-day work week (Monday through Friday) following the game, although later in the paper we also investigate whether the impact of the game outcome lasts longer than a week. Having imposed these restrictions, and excluding 33 cases involving first and second degree murder and aggravated rape, we end up with a sample of 9,234 unique case (juvenile) records from a total of 209 judges.[14]

Table 1 presents the descriptive statistics for juveniles and judges. Panel A displays juvenile attributes while panel B presents judge characteristics. The average disposition length is about 514 days. As mentioned earlier, each juvenile receives a sentence length, regardless of whether he/she is placed on custody or probation. Put differently, each convicted juvenile is assigned a sentence length irrespective of the disposition type.

Figure 1 displays the distribution of disposition length. There is bunching at about half-year thresholds (i.e., half a year, 1 year, and 1 ½ years) with a median of 366 days. The spikes in disposition length are driven by judges commonly choosing disposition lengths at half-year intervals for the majority of those crimes that are most common in the sample. About 10 percent of our effective sample is found guilty of ungovernable; 9 percent is found guilty of burglary. Other common convictions include simple battery (8.4 percent of the sample), drug offenses (6.6 percent), and disturbing the peace (5.1 percent).[15] It should be noted that there is no mandatory sentencing guidelines and judges exercise considerable discretion in sentencing. For example, the average disposition length of disturbing the peace is 313 days, with a standard deviation of 232, and the mean (standard deviation) disposition length of simple battery is 350 (194) days.[16]

Recall that if the judge finds the defendant not guilty, the defendant is dismissed and his/her records are purged as if the case never existed. Those who are found guilty (9,234 juveniles in our effective sample are found guilty as first-time offenders) are either placed on probation or in custody (secure or nonsecure). Table 1 shows

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[13] Information on judges is based on data from Louisiana District Judges Association (1956–2000), as well as phone conversations with the relevant parish clerk's office.

[14] To minimize any potential confounding effects that may arise due to measurement error and outliers, we also exclude defendants whose disposition length is more than the 99th percentile of the disposition length distribution. This restriction applies to sentence lengths longer than 1,856 days and to 93 defendants. The results of the paper remain intact if we drop this restriction and use all observations in the data, or if we impose a symmetric restriction and drop defendants whose disposition length is less than the first percentile of the disposition length distribution as well. See Section IVD for several different robustness checks.

[15] While the football season spans late-August to December, there is nothing different about this time of year in comparison to the rest of the year in terms of the composition of offenses. The five most frequent offenses during January–August, in descending order, are: ungovernable (10.2 percent), simple battery (8.4 percent), simple burglary (8.0 percent), possession, manufacturing, and distribution of drugs (7.5 percent), and disturbing the peace (5.5 percent).

[16] The variation in sentence length among those who are placed on probation is also substantial. The average sentence length is 461 days in this group, with a standard deviation of 287.

TABLE 1—SUMMARY STATISTICS FOR JUVENILES AND JUDGES

	Mean	Standard deviation
Panel A. Juvenile characteristics		
Disposition length	513.87	339.35
Custody (secure and nonsecure custody)	0.269	0.443
Black	0.626	0.483
White	0.354	0.478
Female	0.235	0.424
Age	14.76	1.51
Committed a felony	0.419	0.493
Sample size	9,234	
Panel B. Judge characteristics		
Black	0.115	0.319
White	0.885	0.319
Female	0.225	0.418
Age	56.18	9.52
Party affiliation— Democratic party	0.725	0.445
College degree from LSU	0.327	0.470
LSU Law School	0.478	0.500
Number of judges	209	

Notes: The statistics above reflect our research sample, which consists of juveniles who were disposed before the judge in the weeks during the football season from 1996 to 2012, as well as their corresponding disposition judges. The variables are only a subset of those used in the analysis. The descriptive statistics of the 178 individual offense categories are not reported. There are 180 judges with non-missing information on their alma mater.
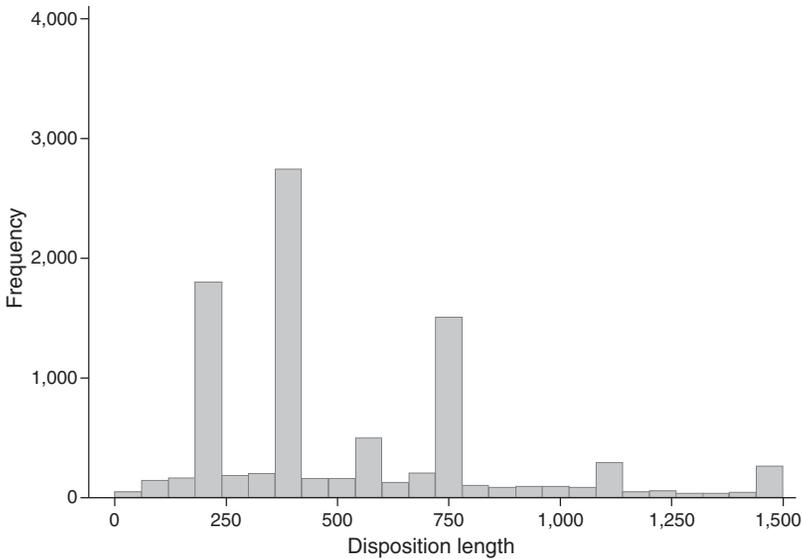

FIGURE 1. DISTRIBUTION OF DISPOSITION LENGTH IMPOSED BY JUDGES

Note: All dispositions are during the weekdays following a Saturday game or a bye week for seasons from 1996 to 2012.

TABLE 2—LSU FOOTBALL GAMES WIN–LOSS RECORD DURING THE SEASONS FROM 1996 TO 2012

Seasons																
1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
LSU Season record (*win–loss*)																
10–2	9–3	4–7	3–8	8–4	10–3	8–5	13–1	9–3	11–2	11–2	12–2	8–5	9–4	11–2	13–1	10–3

Note: Win–loss records include all season games and bowl and championship games from 1996 to 2012.

that the average custody rate (of those who are found guilty) is about 27 percent. Sixty-three percent of the convicted juveniles are black while 35 percent are white.

The overwhelming majority of judges (89 percent) are white, and only about 23 percent are female. The average age of judges is 56, and about 73 percent of judges are affiliated with the Democratic Party.[17] It is interesting that in terms of observable characteristics, the judge sample used in this study is similar to that reported in Abrams, Bertrand, and Mullainathan (2012) for adult courts in Cook County of the state of Illinois. Note also that 47 percent of the judges graduated from LSU law school, while about one-third have received their bachelor's degree from LSU.[18]

Table 2 reports win–loss records of the LSU football team for the seasons 1996 to 2012. There is nontrivial variation from year to year. For example, LSU had a disappointing season with a three–eight win–loss record in 1999, while the record in 2000 was eight wins and four losses.

B. LSU College Football Team's Predicted and Actual Outcomes

Spread betting on professional and college football games is organized through Las Vegas bookmakers. The market assessment of the outcome of a game is assumed to be contained in the closing value of the spread. For example, if the pregame point spread is −5 for LSU against another team, this means that LSU is predicted to win by five points or more. Card and Dahl (2011) provide credible evidence on efficient prediction of the pregame point spread on game outcomes in the NFL. To build upon this evidence, we collected data on pregame point spreads and final scores of all LSU college football games for seasons from 1996 to 2012 and ran a simple regression of the actual spread on the predicted spread (closing value of the pregame point spread).[19] The coefficient estimate (standard error) from this exercise is 0.98 (0.07) with a R^2 value of 0.49. Figure 2 plots the relationship between actual and predicted point spread. It is important to note that the estimated effect on the predicted spread for LSU football games is almost identical to that reported in Card and Dahl (2011) for the games played by six NFL teams during the 1995–2006 seasons.

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[17] In empirical analyses, we use the age of the judge at the disposition date. For summary statistics, we report the judge's age at the last observed disposition date.

[18] The undergraduate institutions from which the judges have graduated could be determined in case of 180 judges.

[19] Pregame point spread data come from an online betting agency (www.goldsheet.com) and game statistics are obtained from LSU athletics department (www.lsusports.net).
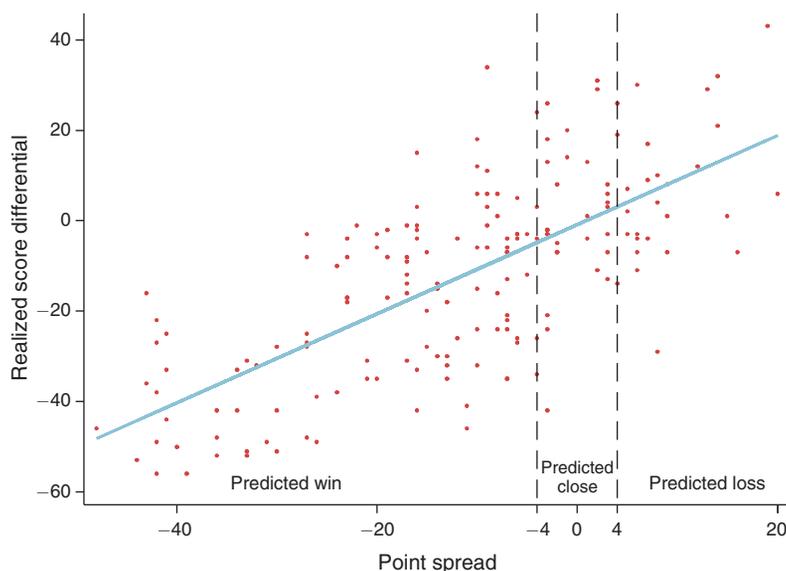
FIGURE 2. REALIZED SCORE DIFFERENTIAL (OPPONENT–LSU) AND PREGAME POINT SPREAD

Note: The plotted regression has a slope of 0.98 (standard error$=0.07$). The R^2 from the regression is 0.49.

Having shown support for efficient prediction hypothesis of the point spread on game outcomes in college football, our next step is to divide the point spread into segments. Following Card and Dahl (2011), we define ex ante classification of LSU college football games as (i) predicted win if point spread is -4 or less, (ii) predicted close if point spread is between -4 and 4, and (iii) predicted loss if point spread is 4 or more. Our results, however, are robust to using different spread value cutoffs (discussed in Section IVD). In an alternative specification, we used the change in the team's ranking between the weeks, provided by the Associated Press (AP), as a measure of the emotional impact of game outcomes. We obtained the same inference from this specification, which is explained in more detail in Section IVD.

Our sample includes all dispositions during the weekdays following a Saturday game of the regular college football season between 1996 and 2012, as well as post-season bowl games that are played on Saturdays. LSU has played 184 Saturday games during this time span, but betting information is not available for five of these games. Thus, we utilize the remaining 179 games—or about 85 percent of all games played by LSU over 16 years (Table 3, panel A). As shown in panel B, the LSU football team won 133 of these 179 Saturday games, which translates into a win rate of 74 percent. Of these 179 games, 122 (68 percent) were predicted wins, 29 (16 percent) were predicted close games, and 28 (16 percent) were predicted losses. As displayed in the lower section of panel B of Table 3, LSU lost 14 of the 122 games in which it was favored to win by four or more points: these are upset losses. LSU lost about 48 percent of the games that were predicted to be close contests: these are close losses; and LSU won 10 of the 28 games (almost 36 percent) in

TABLE 3—SUMMARY STATISTICS FOR LSU FOOTBALL GAMES DURING THE
SEASONS FROM 1996 TO 2012

	Number of games [Number of dispositions]	Percent of category
Panel A. All LSU football games		
Football games on Saturday[a]	179	84.8
Football games on other days	32	15.2
Panel B. Saturday games		
Outcome		
Win	133	74.3
Loss	46	25.7
Predicted outcomes		
Predicted win:	122	68.1
point spread −4 or less	[5,350]	[65.0]
Predicted close:	29	16.2
−4< point spread <4	[1,326]	[16.1]
Predicted loss:	28	15.6
point spread 4 or more	[1,552]	[18.8]
Actual outcomes		
Actual loss (upset loss)	14	11.5
	[781]	[14.5]
Actual loss (close loss)	14	48.3
	[612]	[46.1]
Actual win (upset win)	10	35.7
	[552]	[35.5]
Number of bye weeks	23	11.4
	[1,006]	[10.9]
Associated Press rankings		
Football games when LSU	86	48.0
was ranked in top ten		

Notes: Win–loss records include all regular season games and bowl and the championship games from 1996 to 2012. Associated Press ranking lists the top 25 college football teams, and it is published every Sunday during the college football season. See text for further details.

  [a] There are seven postseason bowl games played on Saturdays during this period.

which it was predicted to lose by four or more points: these are upset LSU wins. There are also 23 bye weeks in our sample period.

The total number of dispositions associated with game outcomes is reported in [brackets] beneath each category in panel B of Table 3. There were 781 dispositions during the 14 work weeks after upset losses, generating an average of 56 dispositions per week. There were 44 weekly dispositions, on average, associated with close losses (612 total dispositions after 14 close losses), 55 dispositions per week after upset wins, and 44 dispositions during bye weeks. The number of dispositions handled by judges each week is a function of the flow of cases coming in to the docket, and it takes an average of 58 days between the petition hearing (following the motion of the district attorney) and the decision of the judge at the disposition trial. Thus, the alleged crimes committed by these juveniles and the charges filed against them took place at least two months before the relevant LSU game. Put differently, the difference in weekly average dispositions is not a function of any potential concurrent local criminal activity at the time of judge's decision.

Panel A. Predicted win
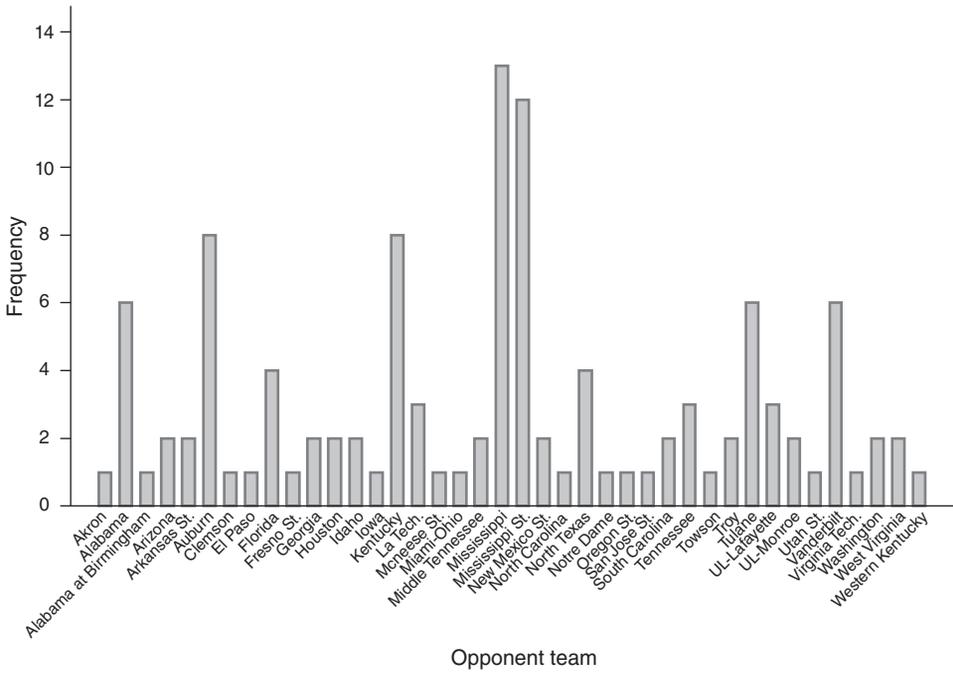
Panel B. Upset loss
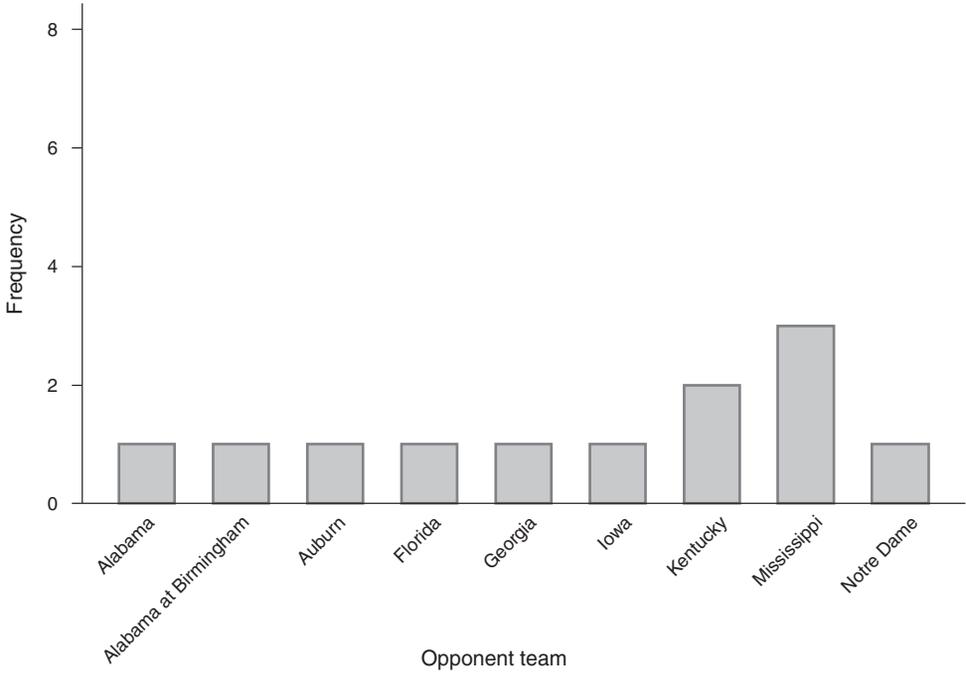
FIGURE 3. PREDICTED WIN AND UPSET LOSS

Note: Predicted win denotes games where the point spread for LSU is −4 or less.

Panel A. Predicted close
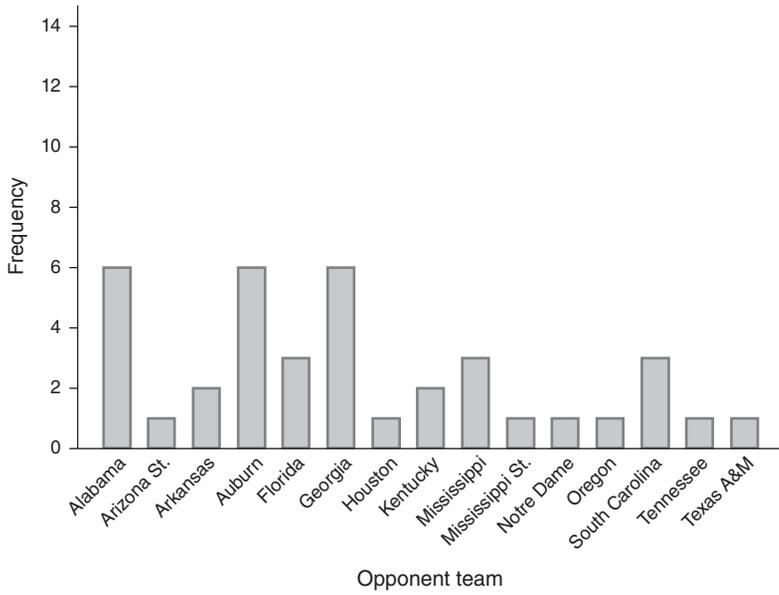
Panel B. Close loss
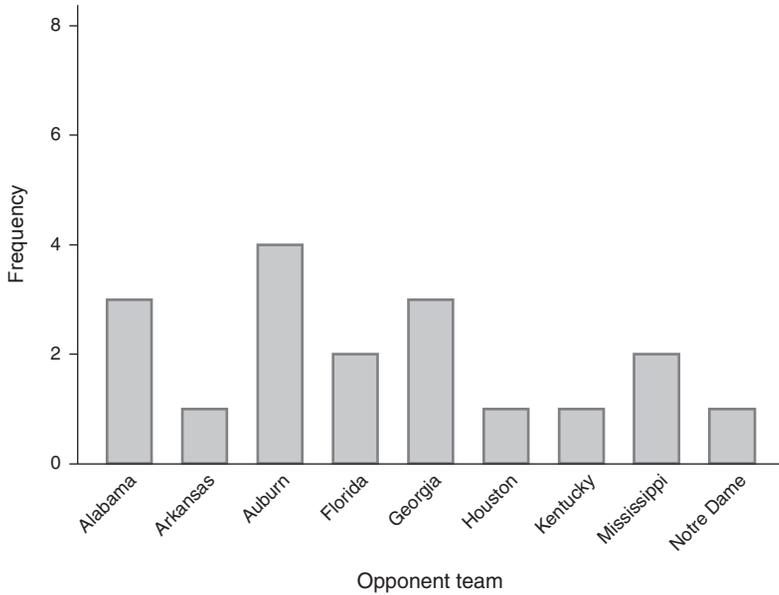
FIGURE 4. PREDICTED CLOSE AND CLOSE LOSS

Note: Predicted close denotes games where the point spread for LSU is between −4 and 4 (exclusive).

Panel A. Predicted loss
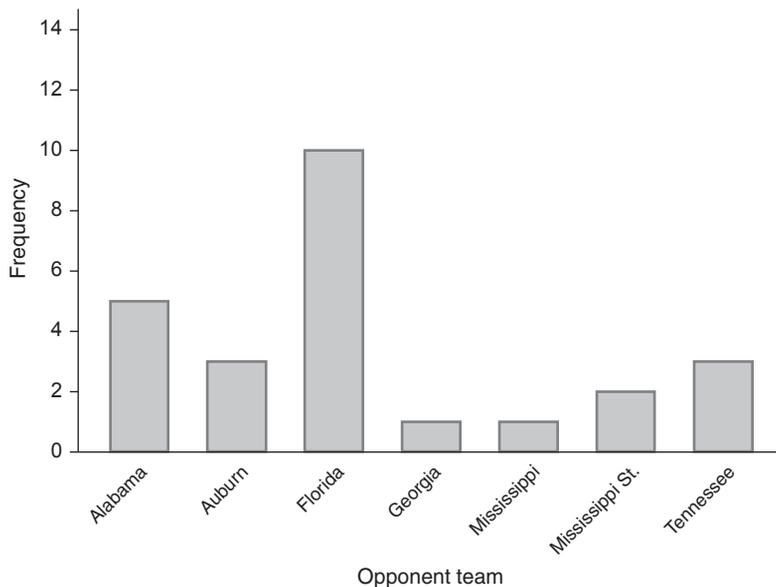
Panel B. Upset win
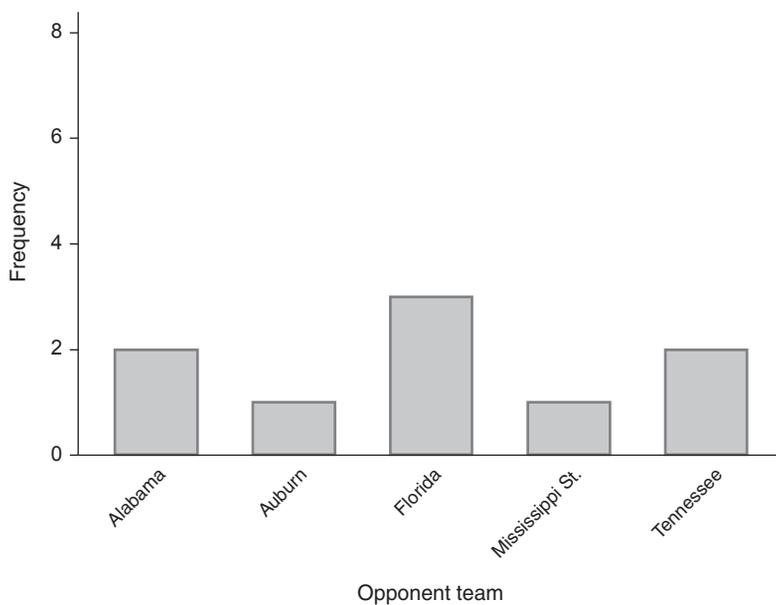
FIGURE 5. PREDICTED LOSS AND UPSET WIN

Note: Predicted loss denotes games where the point spread for LSU is 4 or more.

Figures 3–5 display the frequency distribution of opponent teams for all Saturday games disaggregated by predicted spreads and actual outcomes of the games. Unexpected game outcomes generally involve opponent teams that are known to be LSU's historical rivals such as the University of Alabama and University of Florida.

Finally, the LSU college football team was ranked in the top 10 based on AP rankings for 86 games (48 percent) played on Saturdays over the sample period.

III. Empirical Methodology

To estimate the impact of emotional shocks generated by unexpected wins or losses on disposition length imposed by judges, we specify the following equation:

$$(1) \quad D_{ijdks} = \lambda_0 + \lambda_1\, UpsetLoss_{k-1s} + \lambda_2\, CloseLoss_{k-1s} + \lambda_3\, UpsetWin_{k-1s}$$

$$+ \lambda_4\, PredictedWin_{k-1s} + \lambda_5\, PredictedClose_{k-1s} + \lambda_6\, PredictedLoss_{k-1s}$$

$$+ \mathbf{X}'_{ijdks}\beta + \eta_j + \gamma_d + \delta_k + \theta_s + \varepsilon_{ijdks},$$

where D_{ijdks} is the disposition length for defendant i set by judge j on day d of week k in season s. $PredictedWin$, $PredictedClose$, and $PredictedLoss$ are mutually exclusive dichotomous indicators of ex ante game outcomes based on the point spread in the betting market. Following Card and Dahl (2011), we use -4 and $+4$ as the cutoff values to determine pregame predictions of winning and losing, but as detailed in the Section IVD, using different cutoffs for the point spread did not alter the results. $UpsetLoss$ takes the value of one if LSU was predicted to win the game, but ended up losing it; and the reverse is true for $UpsetWin$. $CloseLoss$ is a dummy variable that takes the value of one if LSU loses the game that was predicted to be a close contest. $\mathbf{X}_{ijdks}$ represents the vector of observed juvenile (i.e., gender, race, age, and detailed offense type), judge (i.e., gender, race, party affiliation, and age) and game (i.e., home game status) characteristics; η_j is the set of judge fixed effects; γ_d, δ_k, and θ_s denote day of the week, week, and season effects, respectively; and ε_{ijdks} is the error term. Standard errors are clustered at the judge level. The results remain intact if we instead cluster at the season $\times$ week or at the season $\times$ week $\times$ day level. Similarly, two-way clustering (i.e., at the judge and season $\times$ week $\times$ day) did not alter the results. In estimations below, we treat the bye weeks, in which no game was played, as our base category.[20]

The key identifying assumption underlying this framework is that the outcome of a college football game is as good as random, conditional on pregame point spread. Put differently, to the extent that the Las Vegas spread provides efficient prediction of the LSU college football game outcomes, controlling for the point spread in equation (1) allows us to tease out the effects of emotional cues of game outcomes.[21]

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[20] In an earlier version of the paper we have employed a different specification which has not used the bye weeks, but obtained very similar results (Eren and Mocan 2016). Table A1 in the Appendix presents these results.

[21] It should be noted that random assignment of juveniles to judges is not necessary in this design to obtain unbiased estimates of the causal effects of game outcomes. However, because the Louisiana juvenile court system employs random assignment of case files to judges, we investigated whether random assignment holds true in the data; and we found strong evidence for it. For example, controlling for the unit of randomization (year-by-court fixed effects), a regression of black defendant indicator on a black judge indicator yields a coefficient (standard error) estimate of 0.013 (0.020). Similarly, a regression of female defendant indicator on female judge indicator produces a coefficient (standard error) estimate of -0.006 (0.026).

TABLE 4—THE EFFECT OF EMOTIONAL SHOCKS FROM LSU FOOTBALL GAMES ON
DISPOSITION LENGTH IMPOSED BY JUDGES AND ON THE PROPENSITY FOR
BEING PLACED IN CUSTODY

	Sentence length				Custody
	(1)	(2)	(3)	(4)	(5)
Upset loss	33.806	37.003	37.654	31.683	−0.003
	(18.843)	(18.410)	(18.282)	(13.269)	(0.018)
Close loss	24.763	20.105	20.708	1.588	−0.024
	(20.401)	(19.167)	(19.194)	(18.096)	(0.023)
Upset win	−14.822	−10.750	−9.353	−11.183	−0.021
	(27.753)	(27.123)	(26.894)	(21.189)	(0.026)
Predicted win	−11.428	−10.920	−7.832	7.980	−0.011
	(15.039)	(14.772)	(16.554)	(14.484)	(0.017)
Predicted close	−9.809	−12.224	−11.163	0.355	0.015
	(20.734)	(19.813)	(20.199)	(15.796)	(0.021)
Predicted loss	9.042	10.311	10.738	12.459	0.029
	(22.837)	(22.446)	(22.528)	(17.947)	(0.023)
Sample size	9,234	9,234	9,234	9,234	9,234
Controls					
Season, week, and days of week	Yes	Yes	Yes	Yes	Yes
Judge	No	Yes	Yes	Yes	Yes
Juvenile	No	Yes	Yes	Yes	Yes
Game	No	No	Yes	Yes	Yes
Offense fixed effects	No	No	No	Yes	Yes
Judge fixed effects	No	No	No	Yes	Yes

Notes: The sample is restricted to all juvenile dispositions following Saturday games or bye weeks during the season from 1996 to 2012. *Predicted win* indicates a point spread of −4 or less, *Predicted close* indicates a point spread between −4 and 4 (exclusive), and *Predicted loss* stands for a point spread of 4 or more. Standard errors, which are clustered at the judge level, are reported in parentheses. Judge controls include indicators for judge's gender, race, and political party affiliation, as well as judge's age and its square. Juvenile controls include indicators for juvenile's gender and race, as well as age and its square. The game control includes an indicator for home games. There are 178 detailed offense types and 209 judges in the effective sample. Judge fixed effects specification include time varying characteristics (indicator for party affiliation, age, and its square). *Bye weeks* is the omitted category. The dependent variable in the last column takes the value of one if the juvenile defendant was placed in custody (received disposition in secure or nonsecure custody) and zero if the defendant was put on probation.

IV. Results

A. Baseline Results

Table 4 presents the baseline results. Column 1 displays the results of a parsimonious model, which includes only the game outcomes (treating bye weeks as the base category), and indicators for the day of the week, week, and season. The results show that an upset loss leads to an approximately 34 day increase in the disposition length set by the judge. Turning to other coefficient estimates associated with game outcomes (second and third rows), we observe that the estimated effect from a close loss is positive, but it is imprecisely estimated. On the other hand, row 3

shows that an upset win generates a decrease in disposition length by about 15 days, although this effect is statistically insignificant.

We extend our baseline specification by incrementally adding controls for observable judge and juvenile (column 2), and game (column 3) characteristics. The coefficient estimates remain largely intact. Column 4 demonstrates that adding detailed measures of offense types (178 offense fixed effects) and judge fixed effects to the specification in column 3 does not alter the estimates appreciably. A comparison of our most extensive specification in column 4 of Table 4 with our baseline specification in column 1 shows that the estimated effect on an upset loss in row 1 does not change either in magnitude or in statistical significance in any meaningful manner.[22] Column 4 of Table 4 demonstrates that an upset loss increases disposition length set by the judges by about 32 days. Taking the average disposition length (514 days) as the baseline, this magnitude corresponds to a 6 percent increase. The impact of close losses and upset wins on disposition length are small in magnitude and they are not statistically different from zero.[23] The results in columns 1 to 4 of Table 4 also show that average sentence lengths are not different between the weeks following a Saturday on which a game was played and the weeks that followed a bye-week.[24]

In addition to their effects on disposition length, unexpected wins and losses may also have an impact on juveniles' propensity to be placed in custody (i.e., impact on their disposition type). To shed light on this issue, we define an indicator variable that takes the value of one if the disposition set by the judge was to place the defendant in secure or nonsecure custody. In this analysis, the outcome in equation (1) is an indicator that takes the value of one for custody, and it is zero if the defendant was placed on probation. The results from this specification are provided in column 5 of Table 4. The estimated impact of the upset loss is very small and not different from zero, and this is also true for other coefficients. This indicates that game outcomes have no impact on the likelihood of the juvenile being placed under custody.[25]

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[22] This is reassuring because college game outcomes, conditional on pregame point spread, are expected to be as good as random.

[23] When we examine the impact of an upset loss by home game status, we find the coefficient estimates (standard errors) are 35.98 (20.46) and 25.11 (33.51) for home and away games, respectively. The sample sizes are halved in these regressions in comparison to the baseline regressions of Table 4.

New Orleans Saints is the professional football team of the city of New Orleans, Louisiana which plays their games on Sundays in the National Football League (NFL). LSU football team has a stronger and wider fan base than that of the Saints in the state of Louisiana, but because the NFL season and the college football season overlap, it is important to investigate the extent to which the results may be influenced by the game outcomes of New Orleans Saints. We used goldsheet.com to obtain the pregame point spreads for the Saints, which is the same source from which LSU point spreads are obtained. We created indicators for upset wins, upset losses, and so on for these games, as was done for the LSU games. Controlling for New Orleans Saints' game outcomes did not influence our main results. The coefficient of LSU upset loss was 29.46 (standard error = 14.37) in the speciation that also controlled for Saints game outcomes.

[24] When we drop all football related variables, but keep season, week, and day-of week dummies, and add a dummy to differentiate between bye and non-bye weeks, the coefficient of non-bye dummy is −2.21 with a standard error of 14.42, indicating that average sentence lengths handed out by judges are not different between weeks following a football game and the weeks following Saturdays on which no games were played. When we perform the same analysis by the race of the defendant, we similarly find that average sentence lengths are not different between bye weeks and other weeks among black defendants or white defendants.

[25] Given that judges make decisions on two margins (disposition type and disposition length), strictly speaking, one should not divide the sample by disposition type and analyze whether the impact of an unexpected loss is different between types of disposition. Nevertheless, when we ran the models for those who were assigned to secure

TABLE 5—THE EFFECT OF EMOTIONAL SHOCKS FROM LSU FOOTBALL GAMES ON
DISPOSITION LENGTH IMPOSED BY JUDGES: DIFFERENTIAL IMPACT OF
EARLY WEEKDAY DECISIONS

	Early weekday = {Monday}	Early weekday = {Monday, Tuesday, and Wednesday}
	(1)	(2)
Upset loss	34.204	24.319
	(14.944)	(20.992)
Upset loss × early week days	−15.708	11.071
	(29.493)	(22.666)
Close loss	0.933	0.051
	(18.769)	(27.431)
Close loss × early week days	5.101	2.726
	(31.994)	(31.617)
Upset win	−13.886	−21.398
	(22.048)	(29.444)
Upset win × early week days	21.488	17.513
	(44.346)	(37.615)
Predicted win	7.889	8.002
	(14.509)	(14.577)
Predicted close	0.276	0.171
	(15.819)	(15.840)
Predicted loss	12.437	12.291
	(17.950)	(18.006)
Sample size	9,234	9,234
Controls		
Season, week, and days of week	Yes	Yes
Judge	No	No
Juvenile	Yes	Yes
Game	Yes	Yes
Offense fixed effects	Yes	Yes
Judge fixed effects	Yes	Yes

Notes: Standard errors, which are clustered at the judge level, are reported in parentheses. *Early Weekday* indicator in column 1 includes only Monday, while it includes Monday through Wednesday in column 2. See notes to Table 4 and the text for data and control variable details.

Although there exists evidence in the psychology literature pointing out a relatively long lasting (almost over a week) association between emotional shocks following major sporting events (Phillips 1983; Miller et al. 1991), it is conceivable that the emotional impact attributable to an upset loss fades out as judges proceed through the week. To address this potential transitory nature of emotional shocks associated with college football game outcomes, we interact our three key measures of upset loss, close loss, and upset win with an *Early Week Day* indicator. Table 5 presents the results from this exercise for our most extensive (and preferred) specification. We treat the *Early Week Day* indicator to only include Monday in the first column, while Monday through Wednesday are considered early weekdays in

custody and for those who were placed on probation, we found that the point estimates of an unexpected loss were similar in both regressions, although imprecisely estimated in the former case because of the small sample size (n = 1,395).

TABLE 6—THE LONG-RUN EFFECT OF EMOTIONAL SHOCKS FROM LSU FOOTBALL GAMES ON DISPOSITION LENGTH IMPOSED BY JUDGES: ANALYSIS OF THE PREVIOUS WEEK'S IMPACT

	(1)	(2)	(3)
Upset loss	27.066	…	27.639
	(13.553)		(13.578)
Close loss	5.037	…	14.320
	(20.759)		(21.454)
Upset win	−10.140	…	−13.606
	(21.840)		(21.991)
Predicted win	−0.563	…	−3.155
	(13.621)		(14.459)
Predicted close	−9.321	…	−18.673
	(16.510)		(18.554)
Predicted loss	7.572	…	7.591
	(19.310)		(19.863)
Upset loss-week before	…	−14.320	−11.447
		(15.043)	(16.341)
Close loss-week before	…	26.954	31.431
		(26.387)	(25.879)
Upset win-week before	…	18.382	21.007
		(16.296)	(17.132)
Predicted win-week before	…	7.003	7.817
		(12.516)	(12.321)
Predicted close-week before	…	−4.933	−4.668
		(16.402)	(15.757)
Predicted loss-week before	…	−17.193	−20.099
		(18.432)	(18.357)
Sample size	8,118	8,118	8,118

Notes: The sample is restricted to all juvenile dispositions following Saturday games or bye weeks during the season from 1996 to 2012. Standard errors, which are clustered at the judge level, are reported in parentheses. All specifications control for day of the week, week, and season effects, (time-variant) judge, juvenile characteristics, and offense and judge fixed effects. There are 170 detailed offense types and 208 judges in the effective sample. See notes to Table 4 and the text for data and control variable details.

the second column of Table 5. The interaction term for the effect of an upset loss with early week indicator is negative in the first column and positive in the second column; and neither one is statistically significant. The effects of a close loss and an upset win continue to be statistically indistinguishable from zero. Thus, the evidence suggests that the causal impact on disposition length (i.e., sentence severity) of judges' negative emotions, triggered by an upset loss of a football game, lasts for an entire week after the game.

To investigate whether the impact of game outcomes on judges' decisions lasts for two weeks, we modify our model by including game outcomes from the week before. The results are provided in Table 6. Column 1 replicates our benchmark regression. Column 2 of Table 6 reports the model where the disposition length assigned by judges is explained by the game outcomes pertaining to the previous week's game. No coefficient is statistically different from zero, indicating that the result of a game played on a given Saturday has no impact on judges' decisions during the second

week following the game. Finally, the model reported in column 3 investigates the extent to which upset losses have a lingering effect beyond the first week after the game by including both the information about the game played in the immediately preceding Saturday and the previous Saturday. The results show that an upset loss has an impact on the decisions made by judges during the week following the game, but that the result of the previous week's game has no impact. The upshot is that, the emotional impact of an upset loss lasts for one week, but no longer.

In summary, our baseline specifications reveal a large and statistically significant effect from an upset loss on disposition length imposed by judges. On the other hand, losses that were expected to be close contests ex ante have no statistically significant impact. The effect of an upset loss persists over the entire week, although it does not carry over to the following week.[26]

B. High-Stake Games, Types of Criminal Offenses, and the Race of the Juvenile

We explore judges' emotional reactions to unexpected college football game outcomes along three dimensions: (i) the impact on disposition length by the importance of the game, (ii) the impact by type of offense: felony versus non-felony (minor), and (iii) the impact by defendant's race.

Columns 1 and 2 of Table 7 report the results where the games are classified based on their importance. Specifically, we consider a game to be more important if the LSU football team was ranked in the top 10 of the AP rankings in the week prior to the game. The results demonstrate that judges' reactions are harsher if the team suffers an unexpected loss when the team was ranked in the top 10 going into the game. This result is not surprising because losing a game is quite consequential toward the national championship when the team is ranked in the top 10, and this is even more so if the team loses such a game when it was predicted to win. Such a loss generates about 50 additional days longer disposition imposed by judges. On the other hand, the impact of an unexpected loss is only about 25 days and statistically not different from zero for relatively low-stake games, as shown in column 2.

Columns 3 and 4 of Table 7 display the results where judges' emotional responses to unexpected game outcomes by the severity of the offense are explored. Using the OJJ's own classification system, we grouped the 178 offense types as felony and non-felony crimes. Judges seem to react somewhat similarly following an upset loss for both felony and non-felony offenses. The effect sizes are 5.2 and 6.6 percent, relative to their sample-specific averages, for juveniles who have committed felony and non-felony offenses, respectively, although the estimated coefficients are not significant at conventional levels.

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[26] Using aggregate level county data, Card and Dahl (2011) show that an upset loss leads to around ten percent increase in the rate of at-home violence by men against their wives or girlfriends. Close losses and upset wins, on the other hand, have little to no impact on domestic violence. The authors also show that violence is concentrated in a narrow time interval surrounding the end of the game. Comparing our results with Card and Dahl (2011), we find similar but more persistent effects of emotional cues to unexpected game outcomes. Several factors including but not limited to the unit of observation (judge versus domestic abuser), outcome of interest (disposition versus domestic violence) and nature of the data (micro versus aggregate) may all contribute to the divergence in the results of these two natural experiments.

Table 7—The Effect of Emotional Shocks from LSU Football Games on Disposition Length Imposed by Judges: By Type of Game, Type of Crime, and the Race of the Juvenile

	Game type		Offense type		Juvenile race	
	LSU ranks in top 10	LSU ranks below top 10	Felony	Non-felony	Black	White
	(1)	(2)	(3)	(4)	(5)	(6)
Upset loss	49.537	24.564	32.854	28.327	42.902	4.815
	(19.450)	(23.197)	(21.756)	(17.672)	(14.894)	(21.963)
Close loss	12.763	3.276	15.617	8.622	−0.017	12.610
	(34.201)	(28.978)	(38.650)	(22.456)	(23.320)	(34.936)
Upset win	37.564	−23.079	−32.895	4.525	−10.166	−2.588
	(62.036)	(24.703)	(40.784)	(22.278)	(28.592)	(31.103)
Predicted win	−6.020	19.200	28.050	0.620	14.915	3.735
	(18.022)	(20.118)	(26.907)	(15.873)	(16.680)	(26.023)
Predicted close	−3.640	1.918	12.243	−9.635	−2.607	6.339
	(22.158)	(22.134)	(31.515)	(17.507)	(20.236)	(28.700)
Predicted loss	−29.094	32.942	25.749	11.321	15.108	28.234
	(27.550)	(21.949)	(33.548)	(19.654)	(23.645)	(28.835)
Average disposition length	476.29	539.26	634.61	426.53	521.46	499.64
Sample Size	4,484	5,756	3,876	5,358	5,781	3,272
Controls						
Season, week, and days of week	Yes	Yes	Yes	Yes	Yes	Yes
Judge	No	No	No	No	No	No
Juvenile	Yes	Yes	Yes	Yes	Yes	Yes
Game	Yes	Yes	Yes	Yes	Yes	Yes
Offense fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Judge fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors, which are clustered at the judge level, are reported in parentheses. Columns 1 and 2 include all bye weeks irrespective of ranking during the bye weeks. Offense classifications (felony and non-felony) are based on the Louisiana Office of Juvenile Justice categorization. See notes to Table 4 and the text for data and control variable details.

Looking at the effects by juveniles' race (columns 5 and 6, Table 7), we observe that an upset loss increases the disposition length by about 43 days for black defendants, which translates into an increase in sentence severity by almost 8 percent. The impact of an upset loss for white defendants is about one-tenth as large (about 5 days) and statistically not different from zero. The equality of these estimated coefficients are rejected at the 10 percent level.[27] These results suggest that the brunt of judges' emotional reaction is borne mostly by black defendants. This disparity in sentencing following an upset loss implies unequal treatment of black defendants, triggered by an outside event, unrelated to the merits of the case.[28]

[27] Running the models by the gender of the judge showed that the impact of an upset loss increases average sentence length by 24.84 (standard error = 25.52) days in case of female judges, and by 33.90 days (standard error = 15.86) in case of male judges.

[28] It has been recognized by psychologists that mood can have a significant impact on judgment, and that this effect is sensitive to the target and the context (see Forgas 1995a and the literature he cites). For example, bad mood has stronger effect on judgments about unusual mixed-race couples as opposed to judgments on same-race couples

TABLE 8—THE EFFECT OF EMOTIONAL SHOCKS FROM LSU FOOTBALL GAMES ON
DISPOSITION LENGTH IMPOSED BY JUDGES: BY RACE OF THE JUDGE AND JUVENILE

| | Black judge | | White judge | |
| | Black juvenile | White juvenile | Black juvenile | White juvenile |
	(1)	(2)	(3)	(4)
Upset loss	46.125	−111.703	36.849	4.095
	(28.463)	(141.546)	(17.151)	(23.238)
Close loss	20.109	240.287	4.976	−1.374
	(53.142)	(179.385)	(28.208)	(35.945)
Upset win	−3.276	−290.113	−14.062	−2.837
	(66.922)	(176.708)	(28.329)	(32.319)
Predicted win	11.736	99.034	15.447	−11.014
	(21.472)	(237.450)	(20.003)	(26.171)
Predicted close	31.960	−202.985	−19.046	9.115
	(35.668)	(277.910)	(23.518)	(29.678)
Predicted loss	−8.682	179.042	27.329	22.880
	(39.982)	(223.666)	(29.808)	(29.917)
Average disposition length	556.48	554.40	510.48	496.32
Sample size	1,379	187	4,402	3,085
Controls				
Season, week, and days of week	Yes	Yes	Yes	Yes
Judge	No	No	No	No
Juvenile	Yes	Yes	Yes	Yes
Game	Yes	Yes	Yes	Yes
Offense fixed effects	Yes	Yes	Yes	Yes
Judge fixed effects	Yes	Yes	Yes	Yes

Notes: Standard errors, which are clustered at the judge level, are reported in parentheses. See notes to Table 4 and the text for data and control variable details.

To investigate if this effect is driven by the race of judge, we re-estimated the models by dividing the sample into two groups: cases handled by white judges and cases handled by black judges. Table 8 presents the results. Because only about 12 percent of judges are black and only 35 percent of juvenile defendants are white, there exist only 187 white juvenile defendants who are assigned to black judges. The regression that uses this sample, reported in column 2 of Table 8, does not provide reliable information because of very small sample size. The regression, reported in column 1 of Table 8, analyzes the decisions made by black judges on black juveniles. It shows that an upset LSU loss increases the disposition length assigned by black judges to black juveniles by 46 days. The estimated coefficient is only significant at the 12 percent level, but the sample size is limited to 1,379 observations. Columns 3 and 4 of Table 8 present the results of the models based on white judges' decisions. Column 3 shows that an upset loss increases the sentence length of black defendants faced by white judges by about 37 days, and column 4

(Forgas 1995b), implying that feelings have a greater influence on the manner in which people perceive others that are different.

shows that the same upset loss adds a statistically insignificant 4 days to the sentence length of white defendants. In summary, Table 8 shows that there is no real discernible difference between black and white judges in their reactions to an upset LSU loss. An unexpected LSU loss seems to prompt both white and black judges to impose longer sentences to black defendants.

It is important to note that when we run our benchmark regression, accounting for all factors employed in previous regressions (ranging from offense fixed-effects to judge fixed-effects, defender attributes), but omitting the variables related to football, we find that the coefficient of the variable for black defendants is -4.52 with a standard error of 7.23. This indicates that in the absence of the football effect average disposition lengths are not different between black and white defendants.[29] We also estimated the same model by dividing the sample by the race of the judge. In the sample of black judges ($N = 1,582$), the coefficient of black defendant was -21.14 (standard error $= 38.55$), and in the sample of white judges ($N = 7,652$) the coefficient of black defendant was -3.75 (standard error $= 7.17$). This indicates that black juveniles do not receive longer sentences in comparison to white juveniles in the absence of the football effect, and that the race of the judge has no impact either. Yet, the results in columns 5 and 6 of Table 7, as well as those in columns 1 and 3 of Table 8 suggest that after having been exposed to an upset loss, judges treat black and white defendants differently and that much of the burden of the emotional trauma generated by the upset loss seems to fall on black defendants.

C. Potential Mechanism

We argue that longer sentences stemming from an upset loss reflect judges' behavior. Unexpected game outcomes, however, may somehow affect the performance of all actors in the courtroom, including the attorney, the prosecutor, and perhaps even the defendant.[30] Although we cannot rule out that the behaviors of these actors are not impacted by an upset loss, in an earlier draft of the paper we provide suggestive evidence that these are not likely mechanisms behind the results (Eren and Mocan 2016). We, however, show that the reaction of judges is stronger when they have arguably strong emotional ties to LSU. Specifically, we

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[29] A simple test of equality of the mean sentence lengths between blacks and whites is rejected at the five percent level, underlying the importance of controlling for confounders.

We also estimated this benchmark regression by including interaction terms for black defendant indicator with other control variables. The estimated coefficient on black defendant indicator was not different from zero.

[30] If the prosecutor recognizes that the judge is upset about the outcome of the football game and that the judge may be harsher on the defendants as a result, the prosecutor may present the case against the juvenile with a more lenient predisposition. Conversely, prosecutors themselves may be upset about the game outcome and therefore they may be harsher on the defendants as well. Juveniles themselves could also be the cause of longer sentences they receive after an upset loss. For example, it could be that juveniles get distraught or depressed after an upset loss of the LSU football team, and as a result, when they appear in the courtroom for the sentencing hearing, they act in manners that would aggravate or irritate judges. Hence, it could be the courtroom behavior of juvenile defendants, due to an upset loss, that prompts judges to impose higher sentencing. Alternatively, it could be the case that juvenile defendants with lower socio-economic status are impacted by an unexpected LSU loss differently in comparison to their economically better-off counterparts. This can happen if, for example, poorer defendants are represented by attorneys who exhibit a lower degree of professionalism in the courtroom. Consequently, the performance of these attorneys may be negatively impacted by an unexpected LSU loss, whereas the attorneys of economically better-off defendants may not be impacted by football game results.

TABLE 9—THE EFFECT OF EMOTIONAL SHOCKS FROM LSU FOOTBALL GAMES ON
DISPOSITION LENGTH IMPOSED BY JUDGES: BY JUDGES' ALMA MATER

	Judges with bachelor's degree from LSU	Judges with bachelor's degree from universities other than LSU
	(1)	(2)
Upset loss	72.497	11.032
	(25.990)	(17.713)
Close loss	10.877	27.690
	(39.133)	(21.910)
Upset win	26.888	3.397
	(33.345)	(29.514)
Predicted win	−38.947	16.448
	(42.533)	(16.143)
Predicted close	−35.480	−14.111
	(39.241)	(20.310)
Predicted loss	−70.485	29.978
	(50.154)	(20.648)
Average disposition length	505.75	517.37
Sample size	2,375	5,230
Controls		
Season, week, and days of week	Yes	Yes
Judge	No	No
Juvenile	Yes	Yes
Game	Yes	Yes
Offense fixed effects	Yes	Yes
Judge fixed effects	Yes	Yes

Notes: Standard errors, which are clustered at the judge level, are reported in parentheses. There are 180 judges with non-missing information on their alma mater (170 detailed offense types). Fifty-nine judges have received their undergraduate degree from LSU. See notes to Table 4 and the text for data and control variable details.

divide the sample into two segments: the cases handled by judges who have received their undergraduate degrees from LSU, and those judges whose bachelor's degrees have been obtained from a college or university other than LSU. Because we could identify alma maters of 180 of the 207 judges, sample sizes are somewhat smaller, but a striking result emerges. As shown in column 1 of Table 9, unexpected losses of the LSU football team prompts judges to impose sentences that are 72 days longer if these judges have received their undergraduate degrees from LSU. On the other hand, as displayed in column 2, the results of LSU football games prompt a much smaller impact on sentence lengths (11 days, and not significantly different from zero) in the sample of judges who have received their bachelor's degree from a college/university other than LSU.[31]

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[31] We also examined heterogeneity by the law school judges graduated from, but did not detect any significant discrepancy between the coefficient estimates for judges who graduated from LSU law school versus other law schools. This suggests students' exposure to the culture of LSU football during their undergraduate education is more impactful than during law school education. This is intuitive because the duration of the former is longer (four years) and undergraduates are younger and arguably more impressionable.

Using the estimated parameters of the model, we calculate that the excess punishment of juvenile defendants in Louisiana associated with each upset loss of the LSU football is about 1,296 days, including time in custody and probation.[32] For defendants convicted of a felony, total additional jail time (secure custody) is 136 extra days due to an upset loss.[33]

D. The Threat of Selection Bias and Sensitivity Analysis

So far, we have not addressed the potential bias in the coefficient estimates that may arise due to sample selection. About 20 percent of juvenile cases were adjudicated and dismissed after the district attorney has filed a petition for them.[34] Recall that, if the judge has dismissed the case, the case is not disposed, i.e., no sentence length is assigned. In this situation, the juvenile is treated as if he/she had no contact with the OJJ. As a result, the case is not recorded in the OJJ system. Consequently, our data allow us to observe only those cases that are not dismissed by the judge (see Section II for details). This particular selection, which could have been implemented by judges, does not constitute a problem for our results to the extent that the emotional effect of game outcomes impact the propensity of dismissal in the same direction as the severity of the sentence length. More specifically, if judges have a lower propensity to dismiss a case after an upset loss, this implies that borderline cases (e.g., those with weak evidence and probably involving petty offenses) will end up at the docket during the week following an upset loss, rather than being dismissed (Robinson 2000; Bowers and Robinson 2012). This, in turn, implies that, selection would generate a sample that would include "less-guilty" defendants who are brought to trial after an upset loss. Thus, the impact we identify could be an underestimate of the true effect of an upset loss.[35]

We implemented several sensitivity checks to examine the validity of our results. First, we used the logarithm of sentence length as the dependent variable, which provided the same inference. The results are presented in column 1 of Appendix Table A3. The coefficient of upset loss is 0.054, indicating an increase in sentence length by 5.4 percent, which is about the same magnitude obtained from the main specification shown in column 4 of Table 4. Second, as an alternative to our discrete parameterization in equation (1), we included a cubic polynomial in the point

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To investigate whether judges with bachelors' degrees from LSU have stronger reactions in alternative specifications, we re-estimated the models presented in Table 7. We added to these models an interaction term between LSU game results and a dummy variable that indicates if the judge has received his/her undergraduate degree from LSU. The results, displayed in Appendix Table A2, confirm that judges who have received their undergraduate education from LSU react more strongly to an upset loss in comparison to other judges.

[32] We observe a weekly average of 56 dispositions following an upset loss, and that 18 of these are handled by judges who have received their bachelor's degrees from LSU. Multiplying the estimated effect from an upset loss using column 1 of Table 9 (72 days) with the number of dispositions yields a total of 1,296 days.

[33] Recall that 42 percent of all dispositions in our data are felony crimes. We observe that six percent of felony crimes receive dispositions in secure custody by judges who have a bachelor's degree from LSU. Using the average weekly dispositions of 56 as our benchmark, we multiply the number of felonies ending up as secure custody with the estimated effect from column 3 of Table A2.

[34] Louisiana Juvenile Justice and Delinquency Prevention Advisory Board Annual Reports 2008, 2010, and 2011 which cover the year 2002, 2004, and 2005.

[35] In the same manner, the impact we identify could be an underestimate (overestimate) of the true effect of a close loss (upset win).
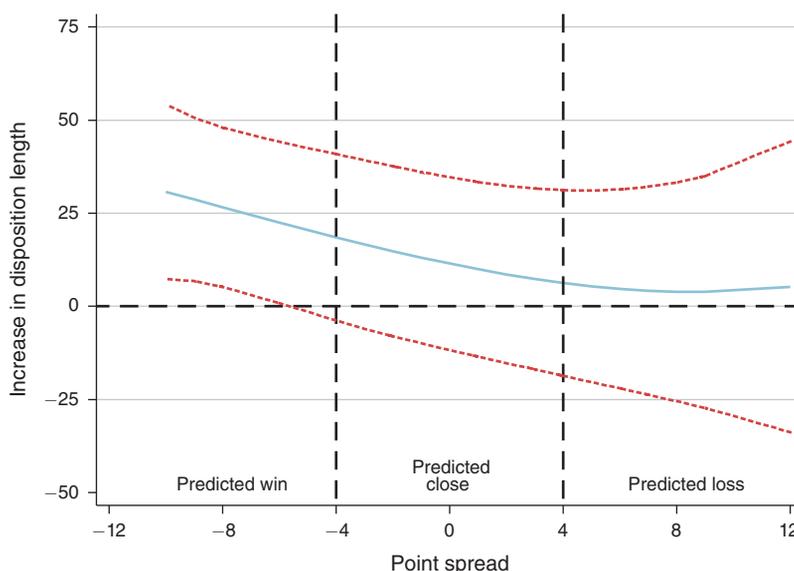
FIGURE 6. INCREASE IN DISPOSITION LENGTH FOR AN LSU LOSS VERSUS A WIN AS A FUNCTION OF
THE PREGAME POINT SPREAD

Notes: The estimates are obtained from a specification with a cubic-order polynomial in the point spread and an interaction between the polynomial and an indicator for LSU loss. The dashed lines are pointwise 90 percent confidence intervals.

spread and an interaction between the polynomial and indicator for the LSU football team loss (Card and Dahl 2011). Figure 6 plots the estimated interaction effect over a range of spread along with the associated pointwise 90 percent confidence interval. The effect of a loss on disposition length set by the judges is decreasing in the spread, and it is only statistically significant for spread values roughly less than −5. Third, keeping our discrete parameterization, we also experimented with different cutoff values (e.g., −3 and 3) to describe unexpected college football game outcomes. The results remained intact.

Fourth, it is conceivable that emotional turmoil generated by hurricanes Katrina and Rita might have impacted the judicial decisions and game outcomes simultaneously. To address this concern we dropped all games played in the 2005 and 2006 football seasons. Doing so had almost no impact on our estimated effects (column 2, Table A3). Similarly, excluding bowl games from the sample or including very serious felonies (first and second degree murder and aggravated rape) produced virtually identical results (columns 3 and 4, Table A3).

Fifth, as mentioned earlier, we limit our attention to first-time delinquents because repeat offenders are assigned to the same judge who presided over the case of the defendant in previous conviction. Dropping this restriction and including offenders with criminal history into the sample does not alter the results (column 5, Table A3).[36]

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[36] Other sensitivity checks did not alter the conclusions either. For example, using a Poisson regression provided results that were consistent with those reported earlier throughout the paper. We dropped season-weeks where the

Finally, we estimated an alternative specification using the change in the team's AP ranking between the weeks as a measure of the emotional impact of game outcomes. The change in the AP ranking from week to week synthesizes the success or failure of top teams and how their relative standing has been altered. For example, LSU may suffer an unexpected loss, but if other teams that are ranked higher than LSU in the AP ranking also suffer losses, LSU's rank may not change appreciably in the AP ranking. Given that the rank of the team at the end of the season matters for the team's championship chances, it is plausible to assume that fans would react to the change in the ranking. We estimated equation (1) by replacing the variables describing game outcomes by three dummy variables indicating (i) if the AP ranking of LSU has deteriorated by four or more positions, (ii) if the change in the rank was up to three positions in either direction, and (iii) if the AP ranking of LSU has moved up by four or more positions. We again treated the bye weeks as our base category and also included the level of rank itself as an additional control. The results from this specification show that if LSU's ranking has suffered a drop after a game in comparison to its ranking before the game [(the rank after the game on Sunday) − (the rank before the game on Saturday)] by four or more slots, judges assign sentences that are approximately 19 days longer, although this impact is not statistically significant at conventional levels. On the other hand, if the drop in the ranking took place when LSU was ranked in the top 10, this generates a statistically significant 46 additional days of sentence during the week following an important game. Other changes in the rank had no effect on sentence length.

E. Falsification Tests

We performed two falsification tests. First, we replaced the LSU pregame point spread and the game outcome records with those of several other prominent college football Division I-A teams, and re-estimated the specification depicted by equation (1) using these placebo values. Although these games were played during the same time period as the LSU games (1996–2012 football seasons), upset wins or upset losses of these other teams should trigger no emotional response from judges. To avoid any emotional spillover effects, we did not choose teams that are direct competitors of LSU (i.e., we did not focus on Southeastern Conference teams or teams from the neighboring states). Instead, we focused on three teams with national championship titles over the sample period (Florida State, Miami-Florida, and Ohio State), and two other teams from different subdivisions with successful histories (Brigham Young and Stanford). The results, displayed in Table 10, show that upset losses of Brigham Young, Florida State, Miami-Florida, Ohio State, or

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total number of dispositions is more than the 90th percentile of the number of weekly disposition distribution. This exercise minimized any concerns regarding congestion of the docket; but doing so had no effect on the results. We also examined whether our results are driven by the decisions of a particular judge, by estimating equation (1) repeatedly, each time removing dispositions set by a different judge. In a total of 209 regressions, the effect of an upset loss on disposition length was always statistically significant, whereas the coefficient estimates for the impact of a close loss or an upset win were never different from zero. Finally, dropping the defendants residing out of state (around two percent of the sample) generated almost identical results.

Table 10—Falsification Tests: The Effect of Emotional Shocks from Selected College Football Teams' Games on Disposition Length Imposed by Judges

	Brigham Young	Florida State	Miami-Florida	Ohio State	Stanford
	(1)	(2)	(3)	(4)	(5)
Upset loss	5.927	−0.117	−7.067	5.883	0.813
	(16.334)	(11.404)	(13.844)	(15.714)	(17.367)
Close loss	−9.572	2.217	38.485	14.885	−15.518
	(18.812)	(26.396)	(18.350)	(18.414)	(16.260)
Upset win	−11.185	−18.829	11.188	−54.478	1.576
	(17.651)	(23.756)	(21.972)	(30.067)	(11.651)
Predicted win	4.158	−1.299	4.782	4.610	14.053
	(13.250)	(12.125)	(13.465)	(17.280)	(14.315)
Predicted close	−7.602	−10.520	−5.884	7.290	0.486
	(17.642)	(19.312)	(17.685)	(17.281)	(19.174)
Predicted loss	−3.583	25.783	4.719	11.798	−2.268
	(16.227)	(16.970)	(17.784)	(22.932)	(13.741)
Sample size	8,178	8,991	8,687	9,306	9,465
Controls					
Season, week, and days of week	Yes	Yes	Yes	Yes	Yes
Judge	No	No	No	No	No
Juvenile	Yes	Yes	Yes	Yes	Yes
Game	Yes	Yes	Yes	Yes	Yes
Offense fixed effects	Yes	Yes	Yes	Yes	Yes
Judge fixed effects	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors, which are clustered at the judge level, are reported in parentheses. See notes to Table 4 and the text for data and control variable details.

Stanford have no impact on the decisions handed down by judges in Louisiana.[37] The point estimates on upset loss are either close to zero in magnitude or are of the opposite sign of theoretical expectations. In summary, the results of Table 10 indicate that, consistent with our expectations, college football results obtained by other prominent teams have no impact on judges' decisions in Louisiana.

Second, we investigated whether judicial decisions in a given week are impacted by the game results of the following week. The results are provided in Table 11. Column 1 replicates our benchmark regression (column 4, Table 4). Column 2 of Table 11 reports the model where the disposition length assigned by judges is explained by the spread and game outcomes pertaining to the following week's game. All point estimates are small in magnitude and none of them is different from zero. Finally, in column 3 we include both the information about the game played on the immediately preceding Saturday and the following Saturday. The results show that an upset loss has an impact on dispositions imposed by judges during the week following the game, but that the result of the following week's game has no impact.

[37] We employed a number of other teams as well. In no case were the results different from those reported in Table 10.

TABLE 11—FALSIFICATION TEST: THE EFFECT OF EMOTIONAL SHOCKS FROM LSU FOOTBALL
GAMES ON DISPOSITION LENGTH IMPOSED BY JUDGES: USING RESULTS FROM
GAMES PLAYED THE FOLLOWING WEEK

	(1)	(2)	(3)
Upset loss	29.373	…	30.073
	(13.691)		(14.310)
Close loss	−3.761	…	1.211
	(21.941)		(23.133)
Upset win	−15.606	…	−13.855
	(22.246)		(22.073)
Predicted win	−0.799	…	−1.724
	(13.444)		(13.523)
Predicted close	−3.039	…	−3.833
	(16.834)		(17.331)
Predicted loss	10.986	…	10.916
	(19.078)		(19.440)
Upset loss–following week	…	−0.665	3.874
		(14.117)	(14.604)
Close loss–following week	…	14.993	14.366
		(19.928)	(20.082)
Upset win–following week	…	2.291	−0.367
		(17.994)	(18.734)
Predicted win–following week	…	−11.898	−8.155
		(11.200)	(10.933)
Predicted close–following week	…	−5.635	−0.010
		(17.545)	(17.589)
Predicted loss–following week	…	−12.239	−7.743
		(15.068)	(14.905)
Sample size	8,407	8,407	8,407

Notes: The sample is restricted to all juvenile dispositions following Saturday games or bye weeks during the season from 1996 to 2012. Standard errors, which are clustered at the judge level, are reported in parentheses. All specifications control for day of the week, week, and season effects, (time-variant) judge, juvenile characteristics, and offense and judge fixed effects. There are 161 detailed offense types and 201 judges in the effective sample. See notes to Table 4 and the text for data and control variable details.

V. Summary and Discussion

In this paper, we utilize the universe of juvenile court decisions in the state of Louisiana between 1996 and 2012 to investigate the effects of emotional shocks associated with unexpected outcomes of football games played by the LSU football team on judicial decisions of juvenile court judges. We employ the Las Vegas bookmakers' pregame point spread to determine fans' (judges) rational expectations about the outcome of the game, and analyze the impact of unexpected game results on judicial decisions. Our ability to employ detailed micro-level data allows us to make inference on the disparity in sentencing based on observable juvenile and judge characteristics.

Using these data, which involve high-stake decisions, we show that upset losses of the LSU football team increase disposition (sentence) lengths imposed by judges, and that this effect persists throughout the work week following a Saturday game. On the other hand, losses of games that were expected to be close contests ex ante, as well as upset wins, have no impact. We also find that judges' reaction, triggered by an upset loss, is more pronounced after more important games (when LSU was ranked in top 10). Different falsification tests and a variety of auxiliary analyses demonstrate the robustness of the results.

The reaction of judges to an upset football loss cannot be attributed to decision fatigue of judges because the impact of an upset loss lasts for one work week. They are, however, consistent with the hypothesis that emotional stress of judges or the stress induced by their environment (their spouse, their friends, peers, and so on) after the unexpected loss is responsible for this outcome. It has been documented that emotions in one domain influence emotions, judgments, and decisions in a completely unrelated domain (e.g., Edmans, García, and Norli 2007; Healy, Malhotra, and Mo 2010; Bodenhausen, Sheppard, and Kramer 1994). We find that the impact is significantly larger for judges who have received their bachelor's degrees from LSU, which is meaningful to the extent these judges have stronger emotional connections to LSU.

We calculate that each upset loss of the LSU football team generates excess punishments of juvenile defenders in Louisiana by a total of more than 1,296 days, including time in custody and probation. Importantly, 136 extra days of jail time has been assigned to juveniles convicted of a felony due to an upset loss in a football game.

From a broader perspective, these results contribute to the investigation of unequal treatment of defendants in the judicial process. Differential treatment of minorities could emerge because of preferences, political reasons, in-group bias, or other systemic factors (Argys and Mocan 2004; Shayo and Zussman 2011; Abrams, Bertrand, and Mullainathan 2012; Alesina and La Ferrara 2014; Grossman et al. 2016). In this paper, we show that emotional stress, imposed on judges externally, prompts them to impose harsher sentences on defendants who were unlucky enough to face the judge during the period of the stress. Furthermore, although the average sentence lengths (conditional on case, defendant, and judge attributes) do not differ by defendant race in the absence of a football effect, it appears that an upset LSU football game loss increases the disposition length (sentence severity) of black defendants more severely in comparison to white defendants. Thus, the burden of the upset loss seems to fall on black defendants.

Our results also contribute to a growing body of literature that aims to find ways to test the impact of emotions on behavior in settings outside of laboratory environments. In addition to its large sample size (the universe of juvenile court cases over a period of 16 years) and the detail of the data it employs, our paper has two other distinguishing aspects. First, it investigates the impact of an emotional shock among a group of decision-makers (judges) who are uniformly highly educated. Second, the decisions analyzed in the paper are made within the constraints of a legal framework which should minimize the extent of capricious judgments. Although legal realists have long argued that judges' decisions may be influenced by extraneous factors,

high-stake decisions about punishment severity are nevertheless expected to be free of person-specific reference points.[38] Thus, it is noteworthy that the judicial decisions are in fact impacted by emotions that are unrelated to the merits of the case.

APPENDIX

TABLE A1—THE EFFECT OF EMOTIONAL SHOCKS FROM LSU FOOTBALL GAMES ON
DISPOSITION LENGTH IMPOSED BY JUDGES: EXCLUDING THE BYE WEEKS

	Coefficients (standard errors)
Upset loss	34.736
	(13.910)
Close loss	3.698
	(17.907)
Upset win	−10.548
	(21.331)
Predicted close	−7.941
	(13.001)
Predicted loss	4.808
	(14.442)
Sample size	8,228
Controls	
Season, week, and days of week	Yes
Judge	No
Juvenile	Yes
Game	Yes
Offense fixed effects	Yes
Judge fixed effects	Yes

Notes: Standard errors, which are clustered at the judge level, are reported in parentheses. *Predicted win* is the omitted category. See notes to Table 4 and the text for data and control variable details.

[38] For example, leading legal realist Judge Jerome Frank, who served as the Chairman of the Securities and Exchange Commission and a judge on the US Court of Appeals for the Second Circuit, has famously argued that a judge's decision may be impacted by mundane things, including what he/she ate for breakfast.

TABLE A2—THE EFFECT OF EMOTIONAL SHOCKS FROM LSU FOOTBALL GAMES ON DISPOSITION LENGTH IMPOSED BY JUDGES WHO HAVE RECEIVED THEIR BACHELOR'S DEGREE FROM LSU: BY TYPE OF GAME, TYPE OF CRIME, AND THE RACE OF THE JUVENILE

	Game type		Offense type		Juvenile race	
	LSU ranks in top 10	LSU ranks below top 10	Felony	Non-felony	Black	White
	(1)	(2)	(3)	(4)	(5)	(6)
Upset loss	39.520	−8.390	23.235	0.427	21.768	−28.130
	(27.092)	(28.771)	(30.265)	(21.988)	(19.616)	(27.194)
Upset loss × judge's bachelor's degree from LSU	44.405	49.100	73.053	24.107	50.393	68.435
	(35.578)	(39.006)	(44.637)	(31.710)	(31.514)	(46.970)
Close loss	32.524	26.871	64.485	16.328	8.756	55.714
	(47.853)	(31.226)	(51.323)	(30.089)	(25.876)	(35.063)
Close loss × judge's bachelor's degree from LSU	−61.965	20.516	−14.847	−42.360	2.695	−36.152
	(47.272)	(50.684)	(60.196)	(42.701)	(46.843)	(43.729)
Upset win	6.031	−1.746	−36.791	39.370	13.927	9.803
	(98.700)	(31.658)	(50.575)	(27.415)	(36.128)	(38.600)
Upset win × judge's bachelor's degree from LSU	38.466	−11.051	62.654	−58.985	−22.943	5.115
	(112.558)	(36.360)	(68.615)	(33.148)	(51.898)	(50.227)
Predicted win	−15.545	14.464	12.639	0.019	6.140	4.998
	(20.433)	(24.878)	(31.933)	(17.071)	(20.004)	(32.346)
Predicted close	−11.862	−22.941	−22.980	−15.854	−31.581	11.354
	(25.004)	(25.092)	(34.447)	(19.808)	(21.414)	(35.879)
Predicted loss	−40.600	15.661	12.255	−3.412	−6.729	26.854
	(32.961)	(25.259)	(39.046)	(23.159)	(26.751)	(35.858)
Average disposition length	482.21	534.75	630.23	428.75	518.95	503.08
Sample size	3,723	4,372	3,208	4,397	4,731	2,725
p-value (upset loss + upset loss × LSU degree)	0.01	0.24	0.02	0.32	0.01	0.34
Controls						
Season, week, and days of week	Yes	Yes	Yes	Yes	Yes	Yes
Judge	No	No	No	No	No	No
Juvenile	Yes	Yes	Yes	Yes	Yes	Yes
Game	Yes	Yes	Yes	Yes	Yes	Yes
Offense fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Judge fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors, which are clustered at the judge level, are reported in parentheses. Columns 1 and 2 include all bye weeks irrespective of ranking during the bye weeks. Offense classifications (felony and non-felony) are based on the Louisiana Office of Juvenile Justice categorization. See notes to Tables 4 and 8 as well as the text for data and control variable details. The *p*-value represents the null hypothesis that the sum of the coefficients in the first two rows is equal to zero.

Table A3—The Effect of Emotional Shocks from LSU Football Games on Disposition Length Imposed by Judges: Alternative Specifications

	log of dependent variable	Excluding Katrina years	Excluding bowl games	Including serious offenses	Including offenders with criminal history
	(1)	(2)	(3)	(4)	(5)
Upset loss	0.054	31.460	31.545	29.671	30.066
	(0.023)	(12.960)	(13.176)	(13.394)	(13.085)
Close loss	0.016	15.412	6.073	0.071	2.627
	(0.036)	(21.588)	(20.143)	(18.092)	(16.066)
Upset win	−0.024	−12.048	−10.665	−12.544	−2.586
	(0.038)	(21.093)	(21.310)	(21.213)	(20.217)
Predicted win	0.021	10.596	8.917	7.576	5.281
	(0.026)	(14.814)	(14.682)	(14.687)	(12.492)
Predicted close	−0.002	−1.783	−1.928	−0.342	−4.204
	(0.035)	(16.163)	(16.572)	(15.833)	(14.127)
Predicted loss	0.037	12.394	13.298	10.250	1.692
	(0.031)	(18.508)	(18.031)	(17.807)	(17.315)
Sample size	9,231	8,379	8,873	9,267	10,458
Controls					
Season, week, and days of week	Yes	Yes	Yes	Yes	Yes
Judge	No	No	No	No	No
Juvenile	Yes	Yes	Yes	Yes	Yes
Game	Yes	Yes	Yes	Yes	Yes
Offense fixed effects	Yes	Yes	Yes	Yes	Yes
Judge fixed effects	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors, which are clustered at the judge level, are reported in parentheses. See notes to Table 4 and the text for data and control variable details.

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