

NFL Player Arrests

Measuring the impact of player arrests on NFL transactions, performance and social media sentiment

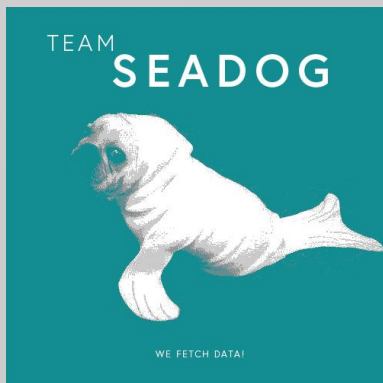
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David Hoebbel, *Excel Mystic*

Natalie Kramer, *Trend Amplifier*

Risa Prezzano, *Senior Git Guru*

March 2018



Scope of Analysis

3 Main Questions

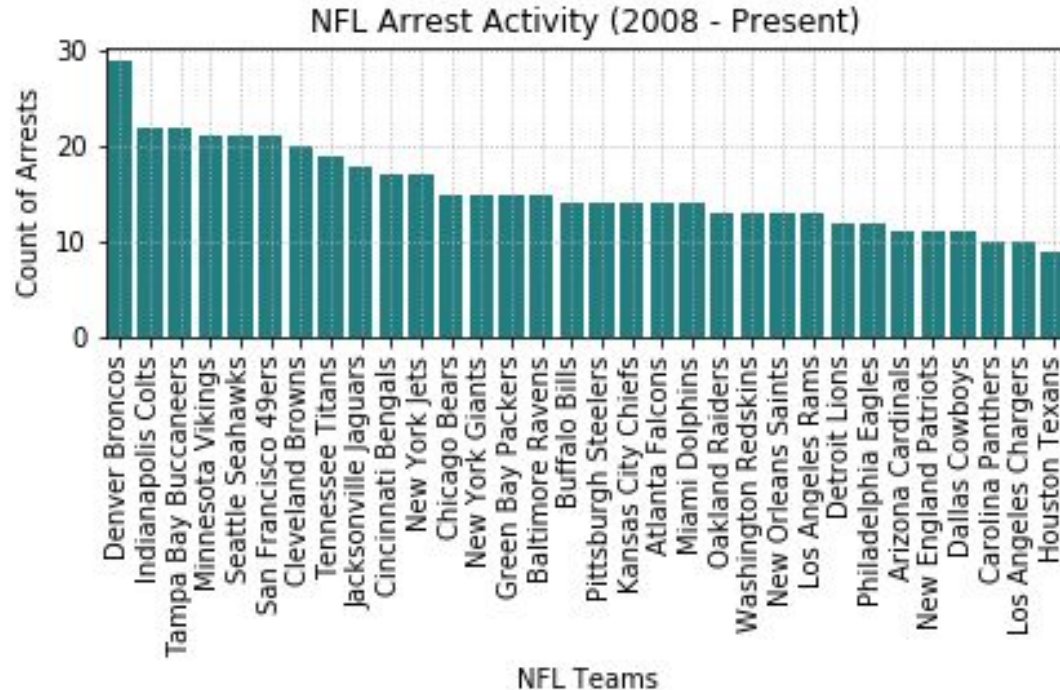
- 1) What is the effect (if any) arrests have on a football players career or tenure with a team?
- 2) Does arrest activity have any effect on a players perceived performance value?
- 3) Does arrest activity have any effect on a players public brand?

Methodology

- Limit analysis to last ten years
- Sample top 50 arrestees
- Pull player tweets a week prior to and after a transaction to maximize opportunity for Twitter discussion
- Pull player's fantasy value for the given period between trades to determine whether or not sentiment changes a result of declining ability

Arrests are not unique to team or region

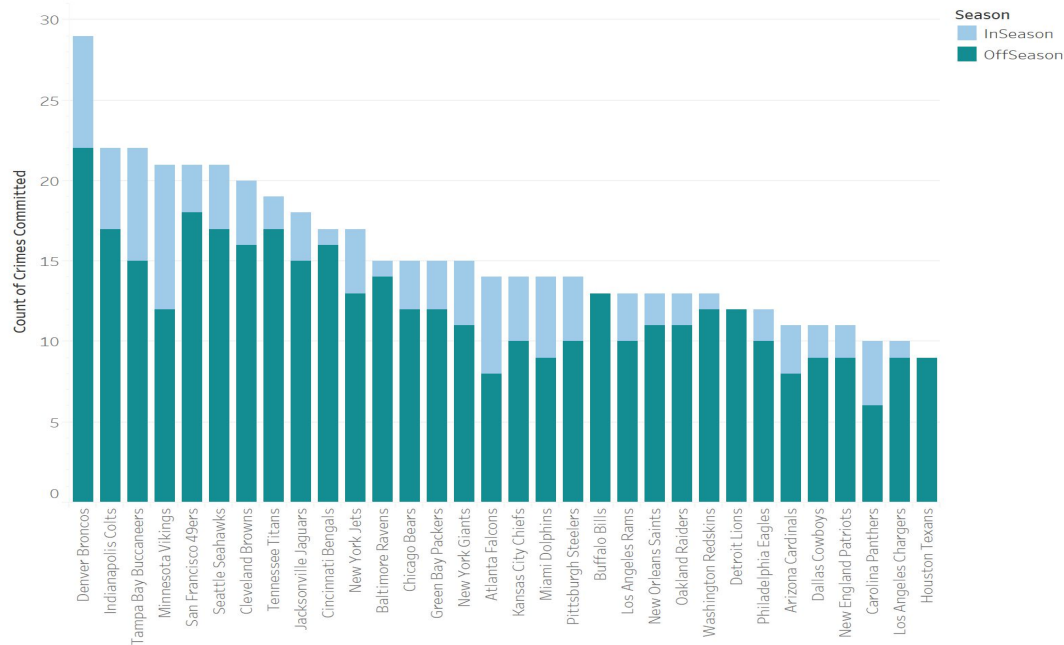
All 32 NFL Teams have encountered player arrests since 2008



Majority of NFL-related arrest activity occurs in offseason

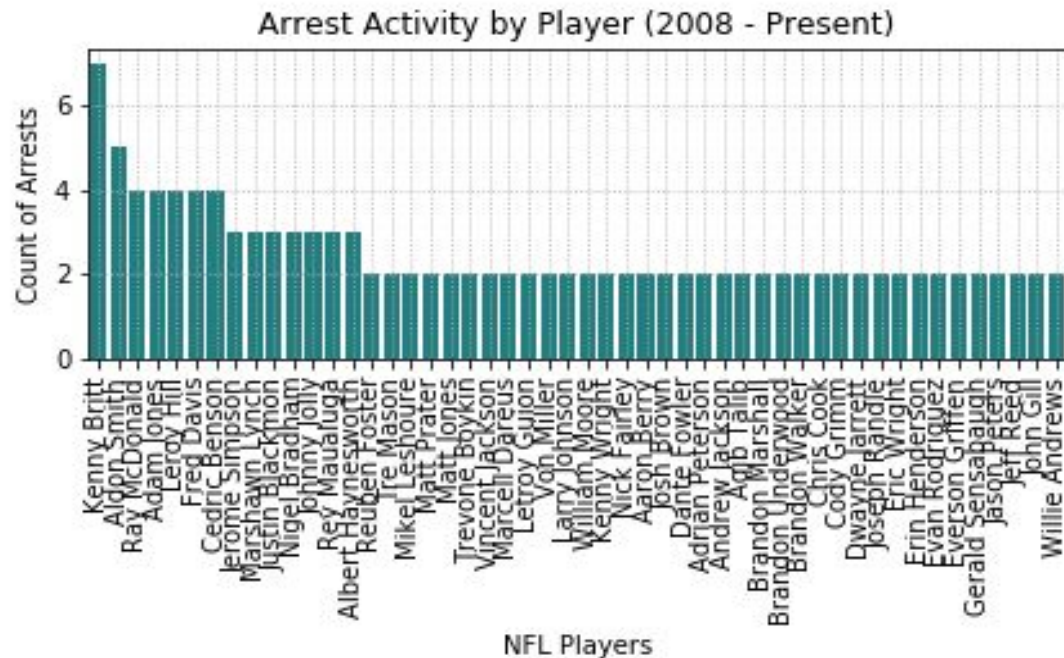
Of the 495 arrests, roughly 80% have occurred during the offseason

Crimes Committed Inseason vs Offseason



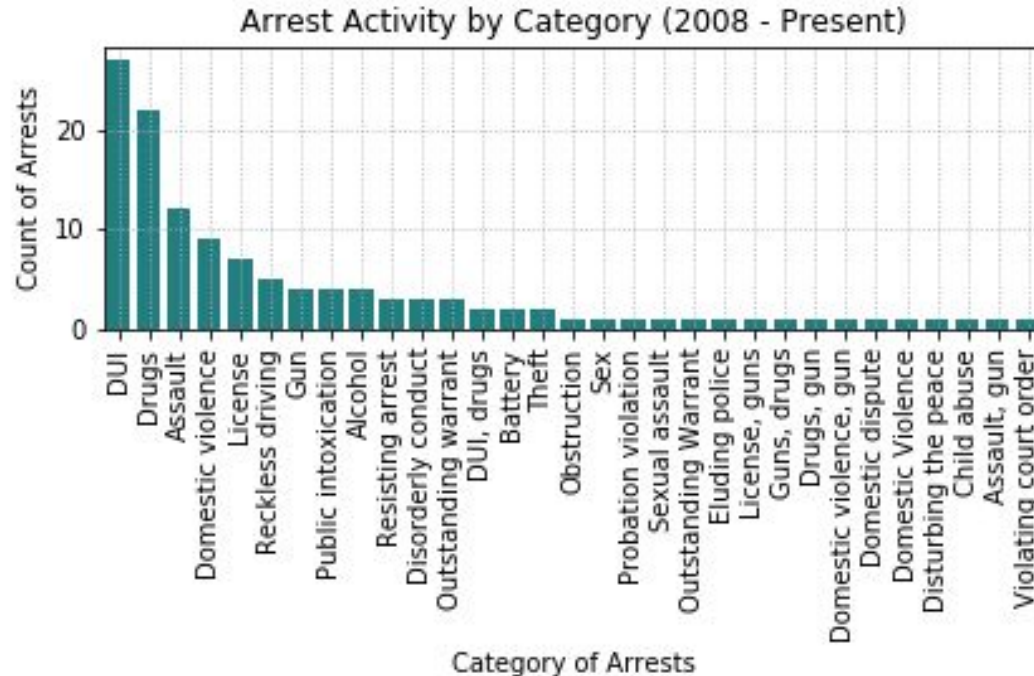
Player Spotlight

TOP 50: 125 combined arrests among players with 2 or greater arrests



Overall activity among top arrestees varies

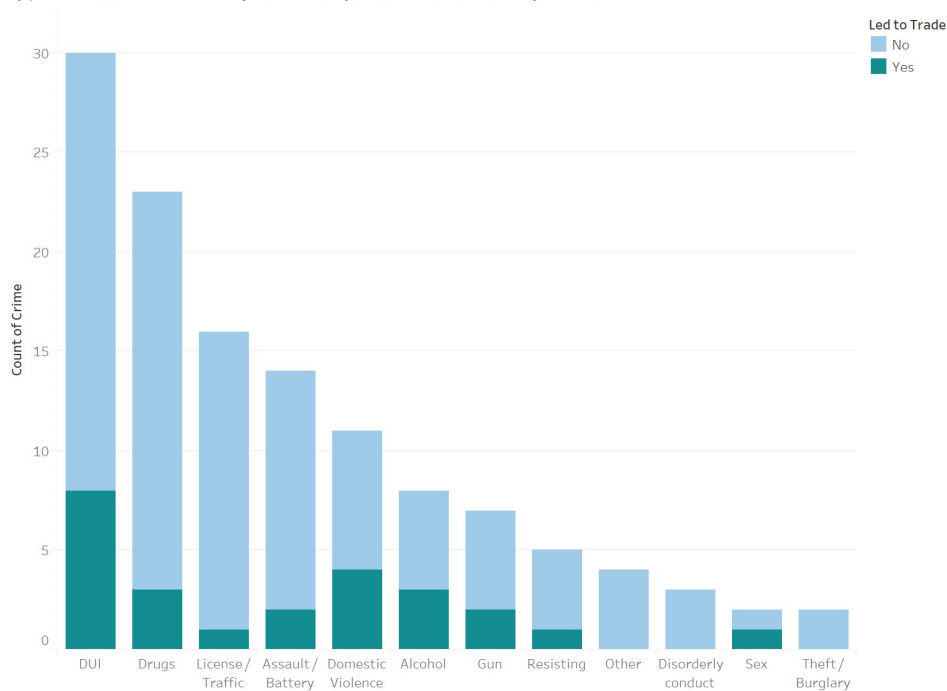
Despite variety, DUI, drugs, and alcohol represent 49% of all arrest activity



Does arrest activity affect trades?

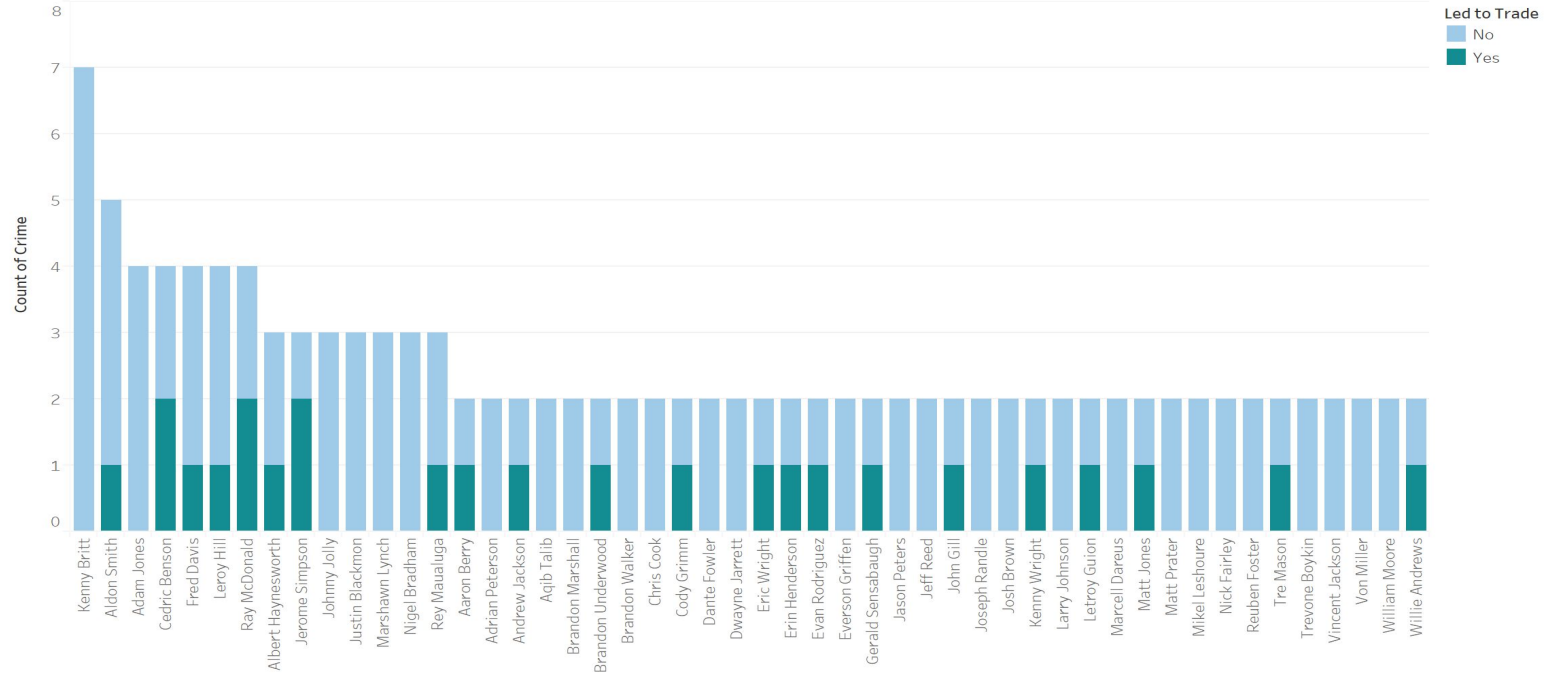
Based on trade assumptions, roughly 19% of arrests potentially led to a player trade/release

Type of Criminal Activity That May Have Caused Player Trades



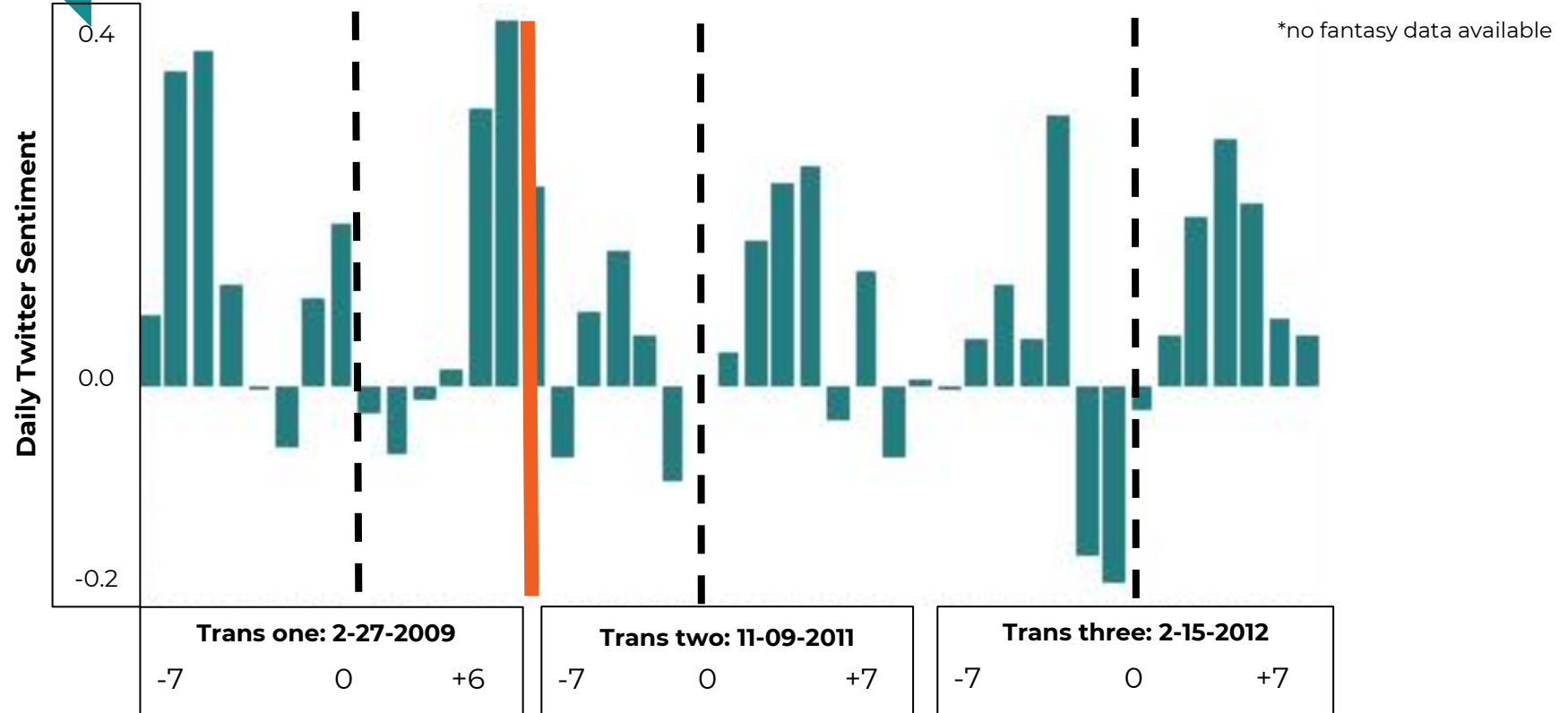
Arrest activity appears to have little effect on a players longevity with a team.

Trades Potentially Caused by Criminal Activity

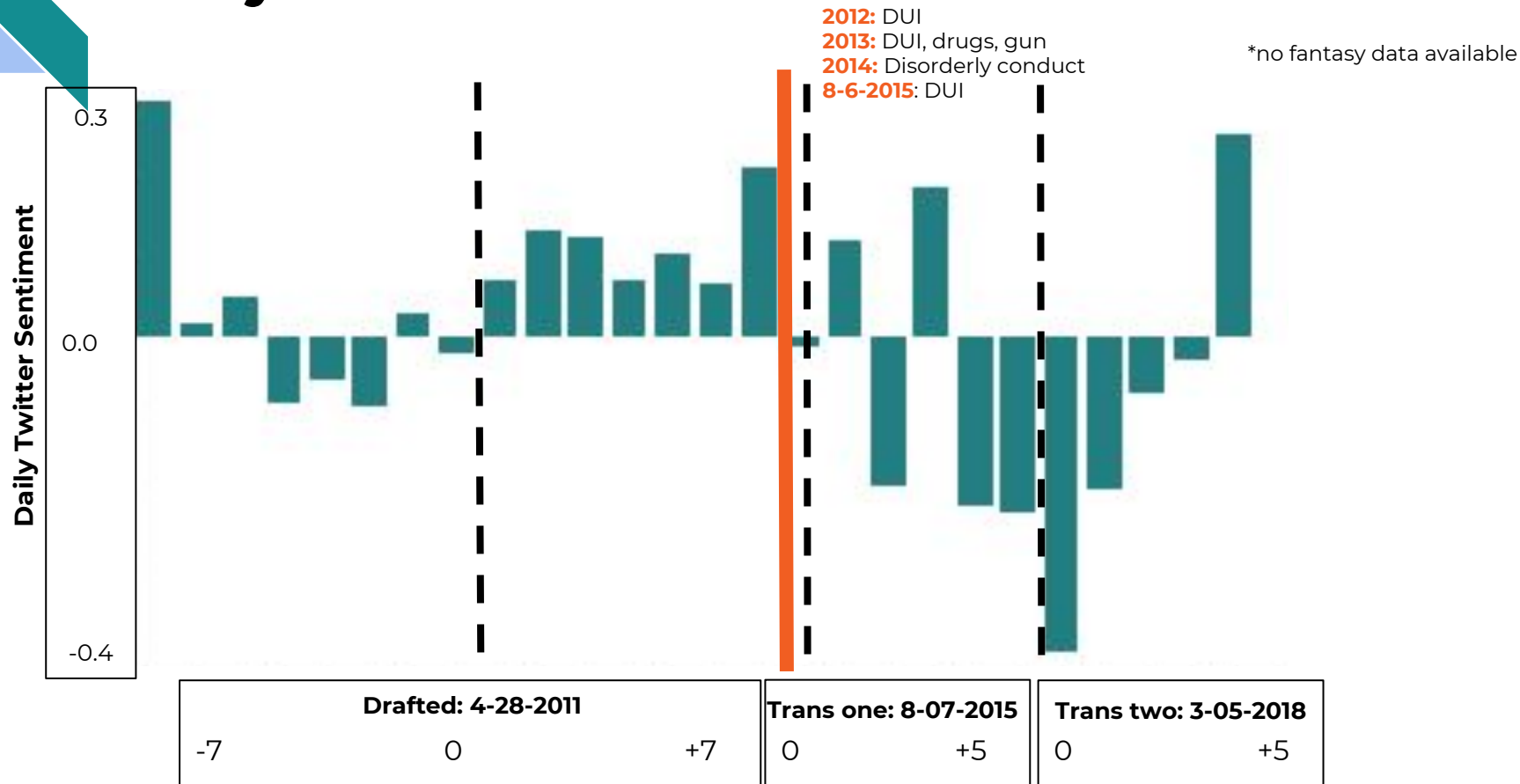


Player Case : Albert Haynesworth

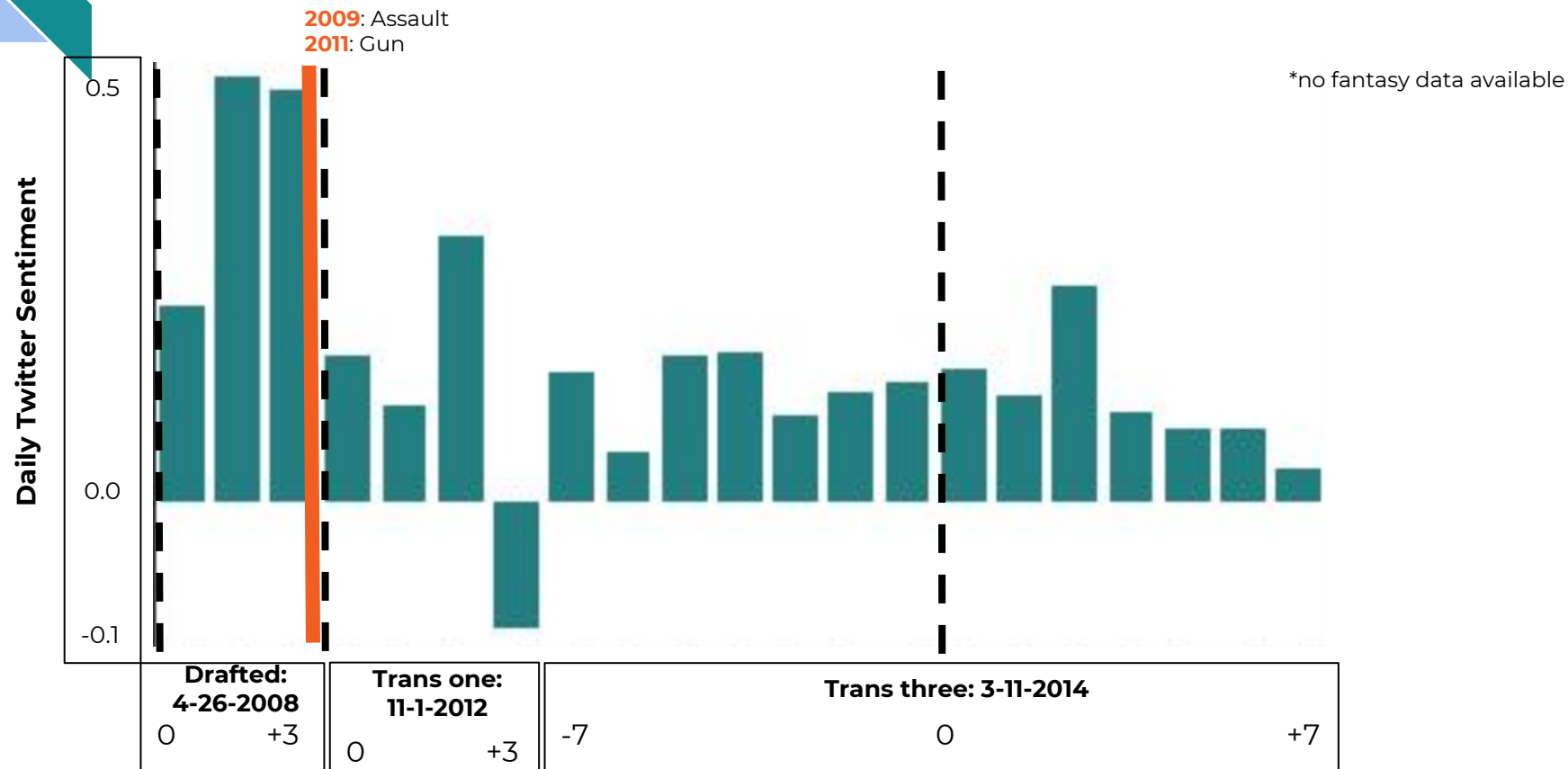
2009: Reckless Driving
2011: Assault, Sex



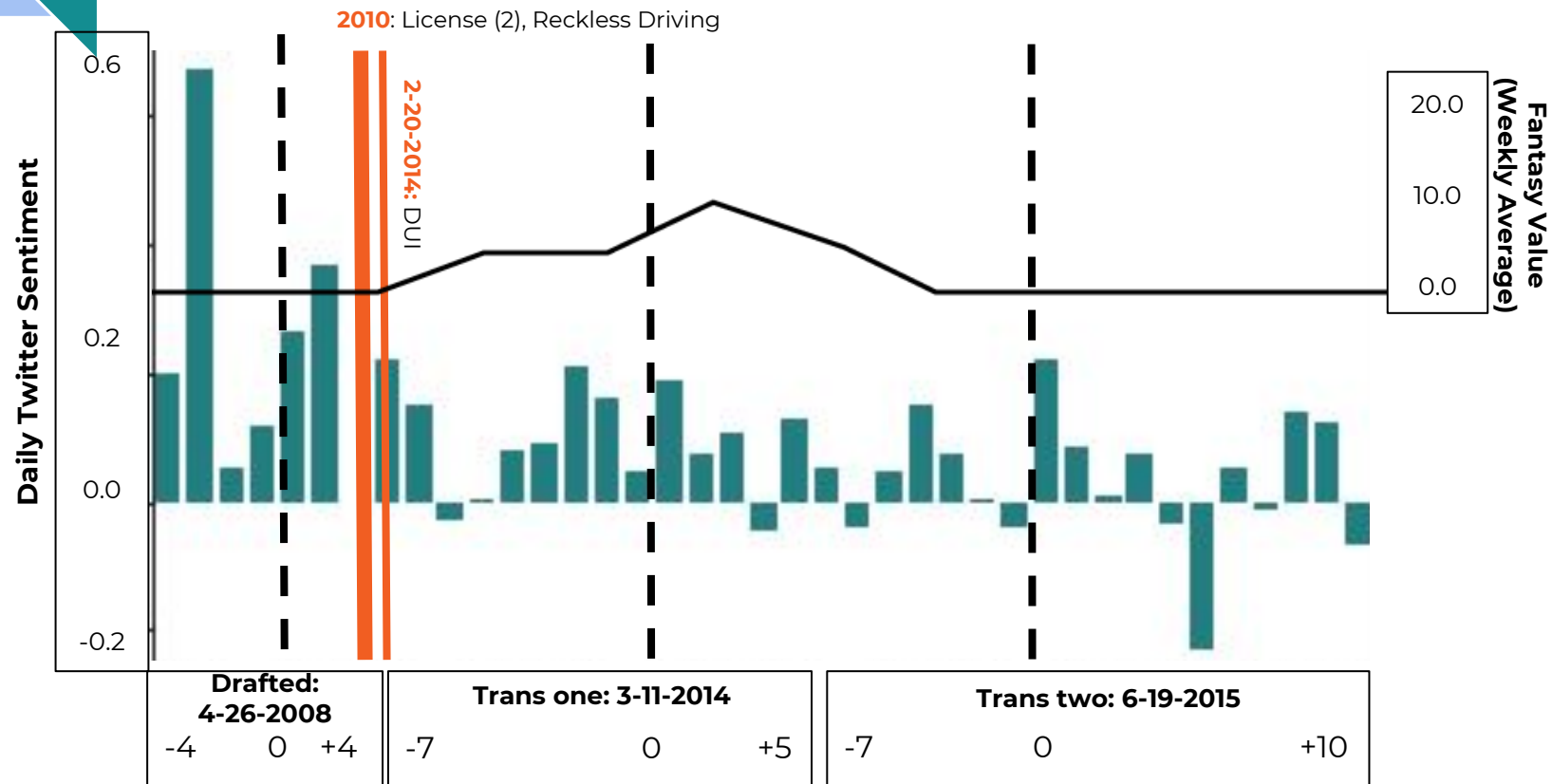
Player Case : Aldon Smith



Player Case : Aqib Talib



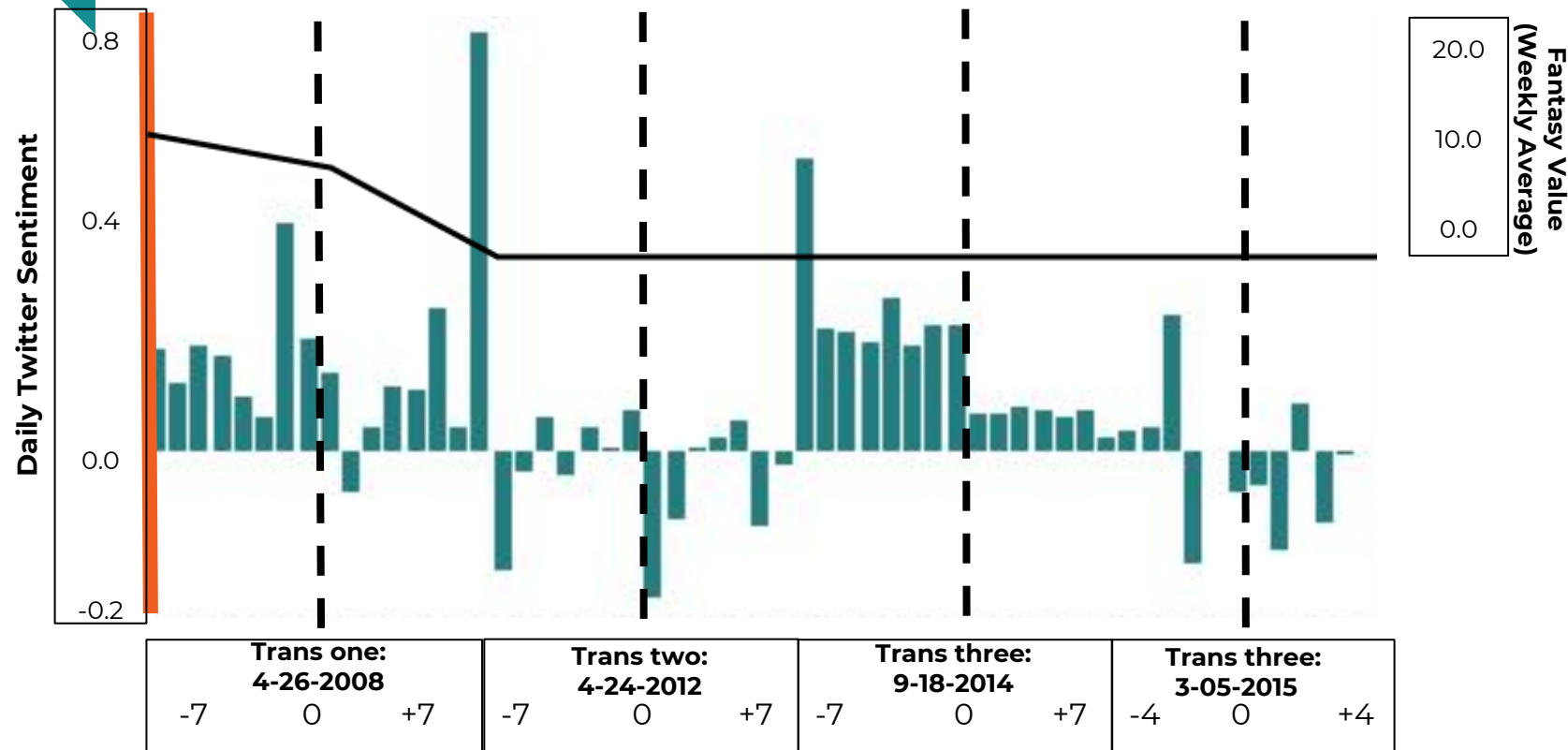
Player Case : Fred Davis



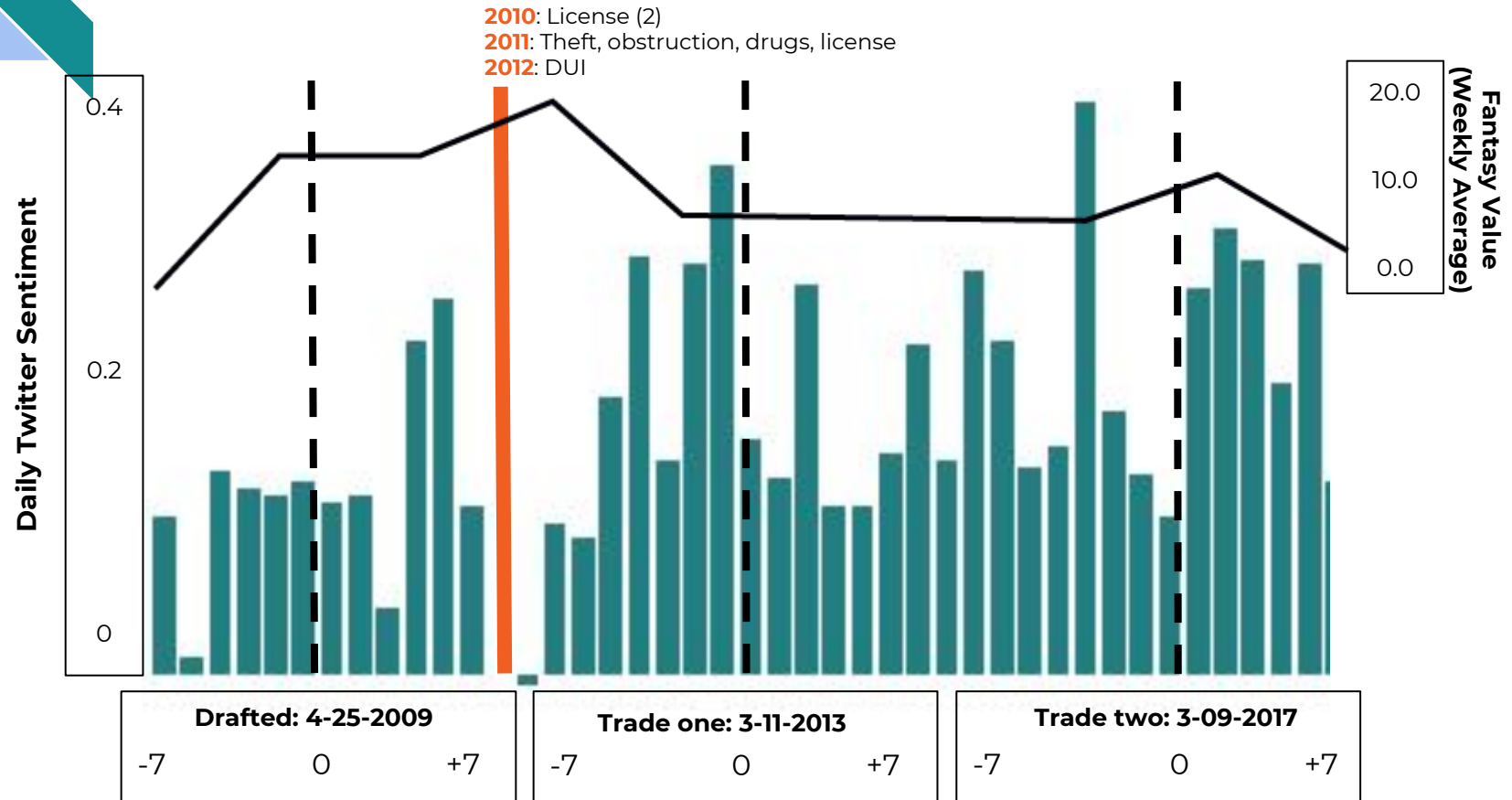
Player Case : Jerome Simpson

2009: Assault

2011: Gun

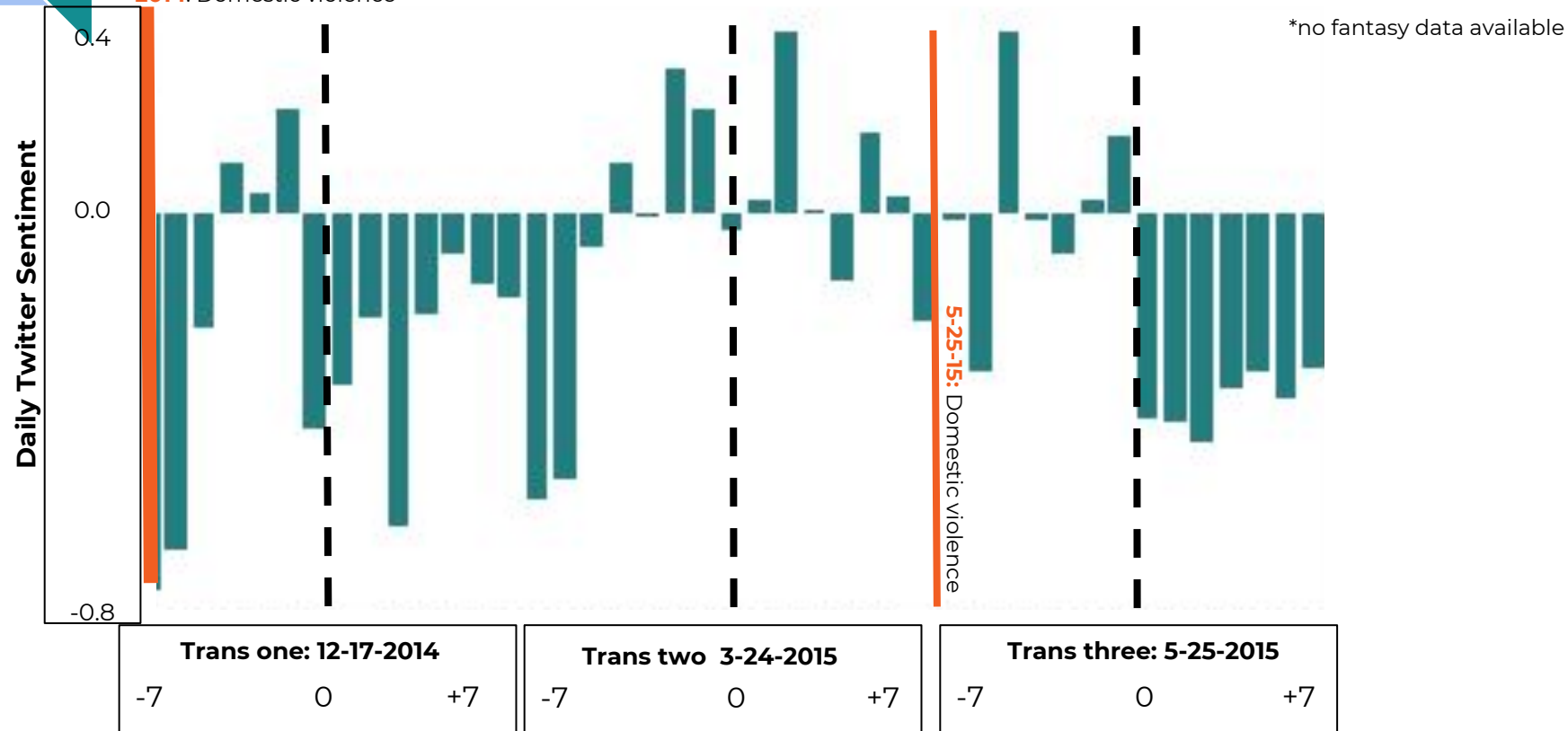


Player Case : Kenny Britt

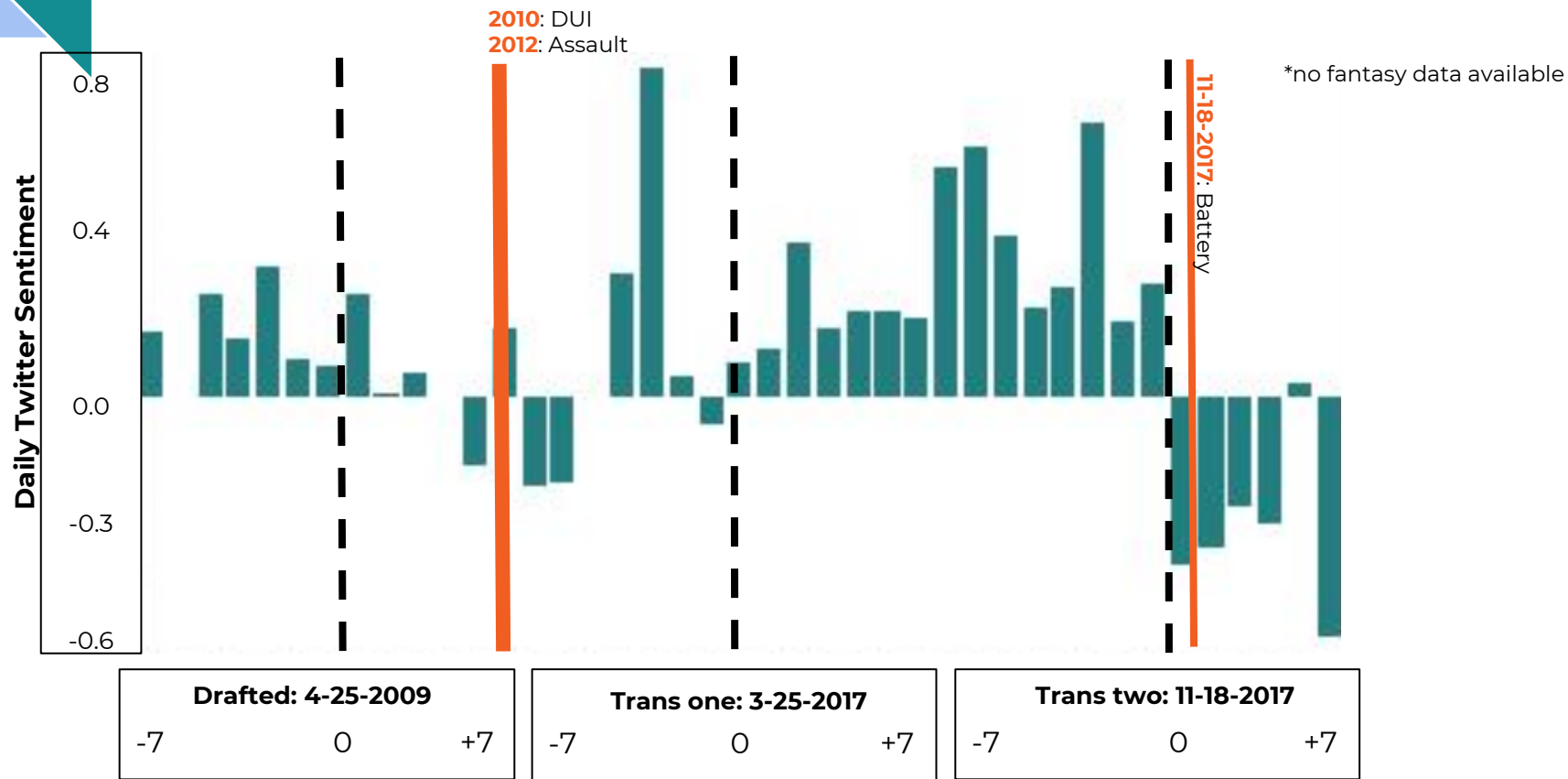


Player Case : Ray McDonald

2010: Alcohol
2012: Outstanding warrant
2014: Domestic violence



Player Case : Rey Maualuga





Appendix

Sentiment analysis scoring

About the Scoring

- The **compound score** is computed by summing the valence scores of each word in the lexicon, adjusted according to the rules, and then normalized to be between -1 (most extreme negative) and +1 (most extreme positive). This is the most useful metric if you want a single unidimensional measure of sentiment for a given sentence. Calling it a 'normalized, weighted composite score' is accurate.
- It is also useful for researchers who would like to set standardized thresholds for classifying sentences as either positive, neutral, or negative. Typical threshold values (used in the literature cited on this page) are:
 1. **positive sentiment:** compound score ≥ 0.5
 2. **neutral sentiment:** (compound score > -0.5) and (compound score < 0.5)
 3. **negative sentiment:** compound score ≤ -0.5
- The pos, neu, and neg scores are ratios for proportions of text that fall in each category (so these should all add up to be 1... or close to it with float operation). These are the most useful metrics if you want multidimensional measures of sentiment for a given sentence.

Data Sources

Arrest Data(API): nflarrest.com/api/

Trade Data (web scrape): prosportstransactions.com/football/

NFL Fantasy Data (web scrape): fantasydata.com

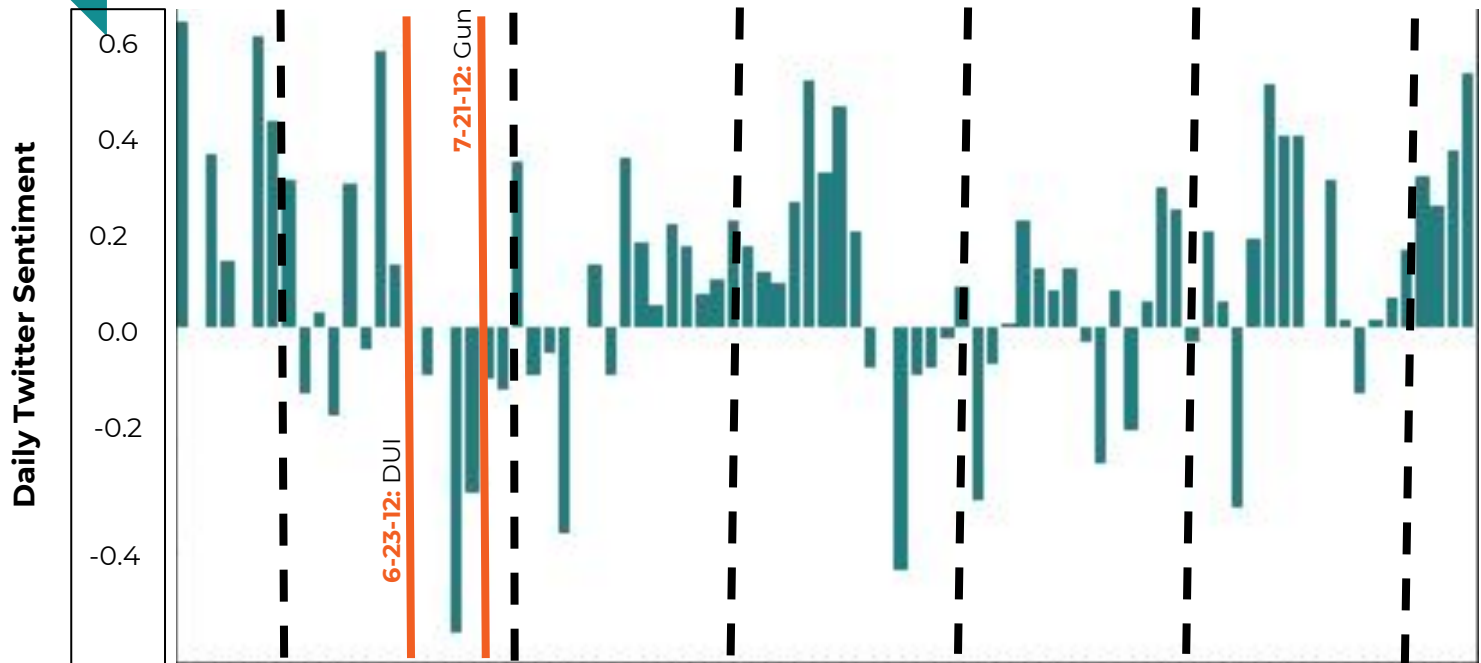
Twitter Sentiment (web scrape): <https://developer.twitter.com/>

Sentiment Analysis

Hutto, C.J. & Gilbert, E.E. (2014). VADER: A Parsimonious Rule-based Model for Sentiment Analysis of Social Media Text. Eighth International Conference on Weblogs and Social Media (ICWSM-14). Ann Arbor, MI, June 2014

Player Case : Aaron Berry

*no fantasy data available



Drafted:
4-25-2010

-7	0	+7
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Trans one:
7-23-12

-7	0	+7
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Trans two:
10-1-2012

-7	0	+7
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Trans three:
7-27-13

-7	0	+7
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Trans four:
6-2-14

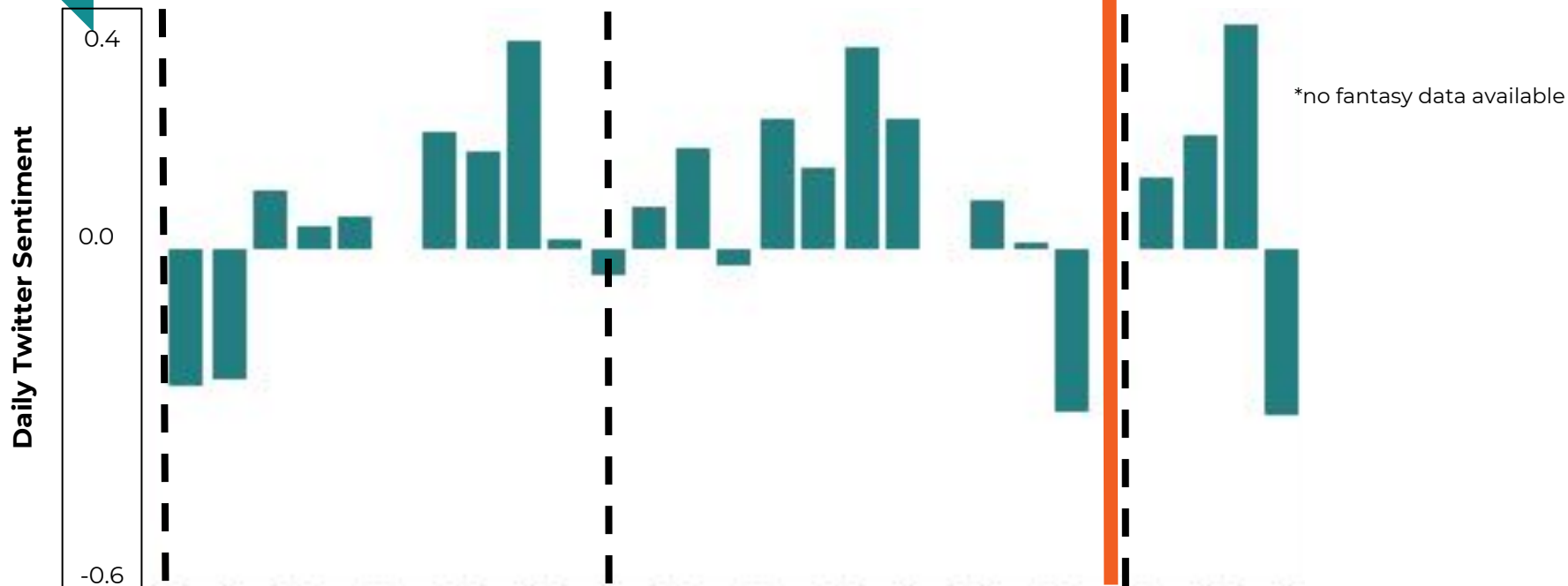
-7	0	+7
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Trans five:
9-9-14

-7	0	+7
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Player Case : Adam “Pacman” Jones

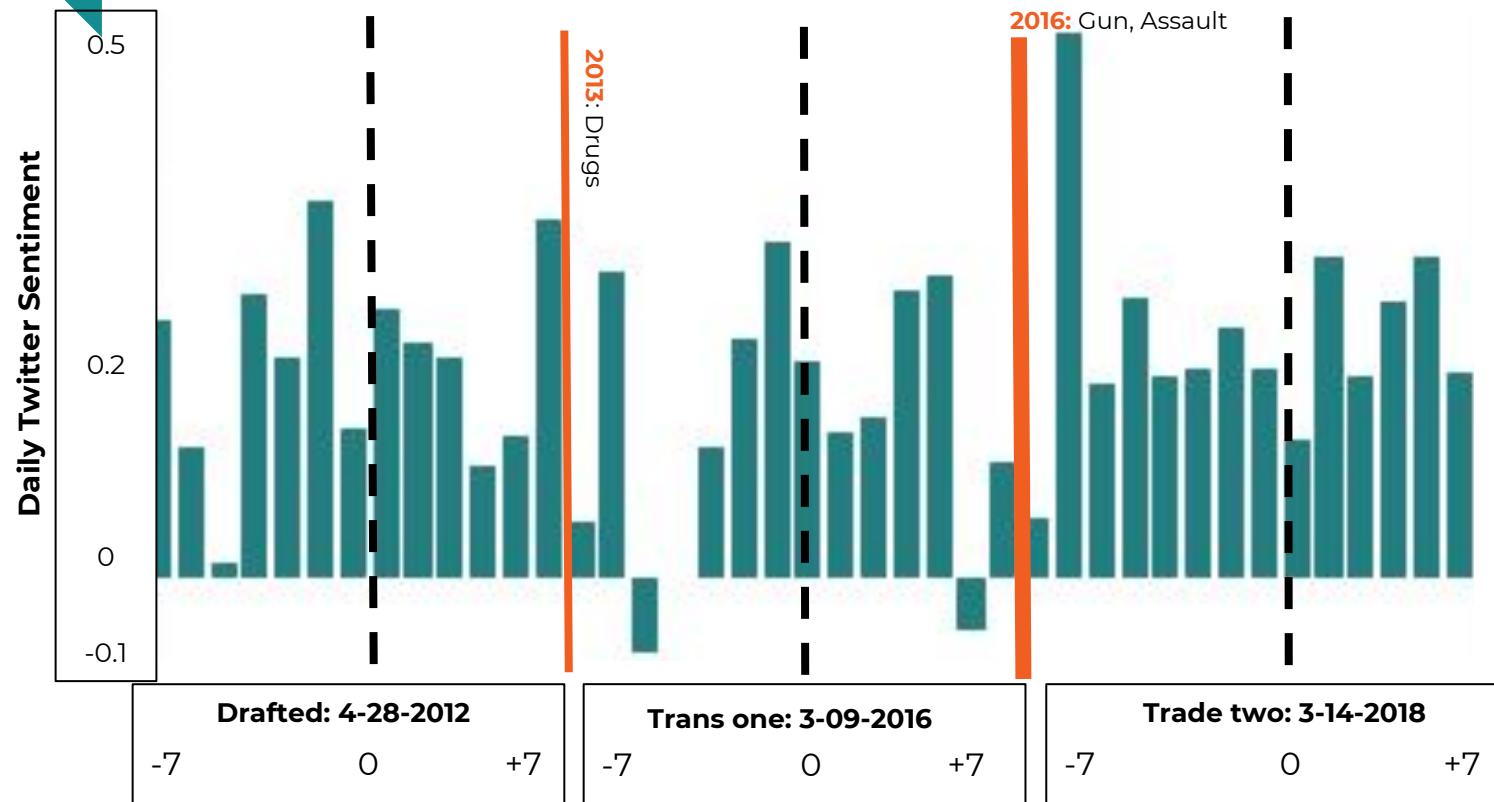
2011: Alcohol
2013: Disorderly conduct, Assault
2017: Assault



Trans one: 1-7-2009	Trans two: 4-24-2008	Trans three: 3-09-2018
0+7	-30+7	0+3

Player Case : Nigel Bradham

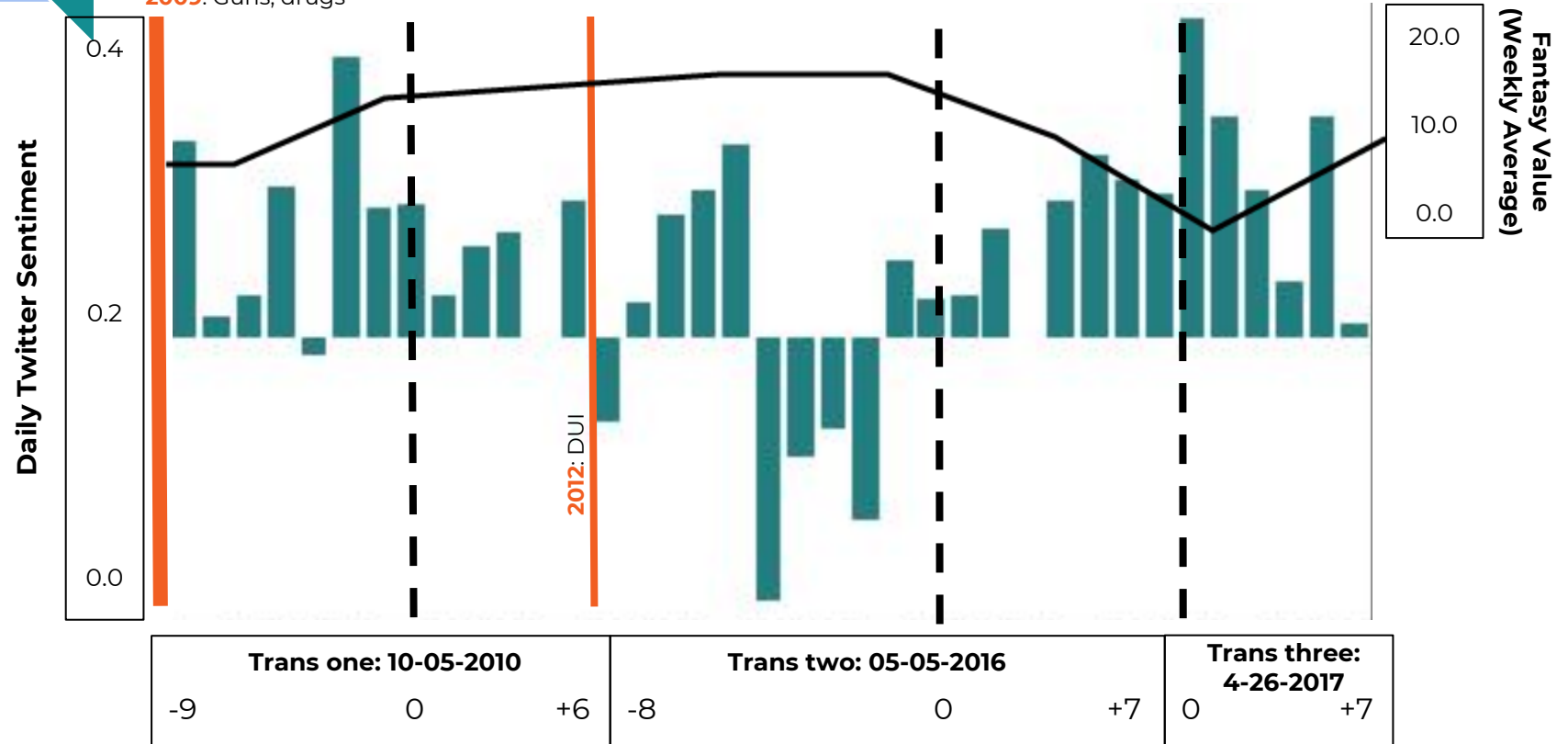
*no fantasy data available



Player Case : Marshawn Lynch

2008: Reckless driving

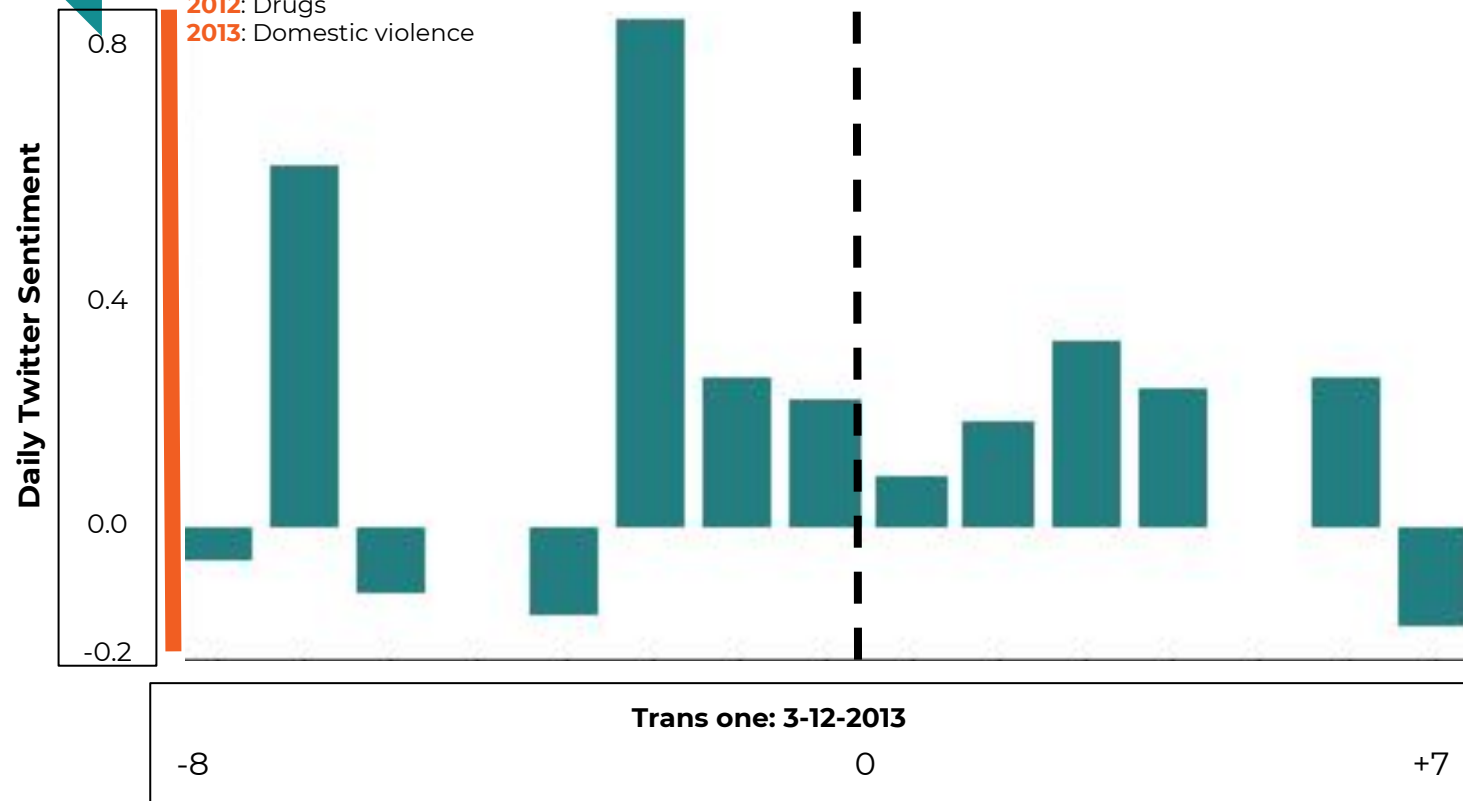
2009: Guns, drugs



Player Case : Leroy Hill

2009: Drugs
2010: Domestic violence
2012: Drugs
2013: Domestic violence

*no fantasy data available



Player Case : Justin Blackmon

