

## To tweet or not to tweet: The question of emotion and excitement about sporting events

Jon Gratch<sup>1</sup>, Gale Lucas<sup>1</sup>, Nikolaos Malandrakis<sup>1</sup>, Evan Szablowski<sup>2</sup>,  
Eli Fessler<sup>3</sup>

*University of Southern California<sup>1</sup>, University of Oxford<sup>2</sup>, Pomona College<sup>3</sup>*

Sporting events can serve as laboratories to explore emotion and computational tools provide new ways to examine emotional processes “in the wild”. Moreover, emotional processes are assumed -but untested- in sports economics. For example, according to the well-studied uncertainty of outcome hypothesis (UOH), “close” games are more exciting and therefore better attended. If one team were certain to win, it would take away a major source of excitement, reducing positive affect, and therefore decreasing attendance. The role of emotion here is assumed but has not been tested; furthermore, the measures used (ticket sales, attendance, TV-viewership) do not allow for such a test because they are devoid of emotional content. To address this problem, we use tweets per minute (specifically, tweets posted during 2014 World Cup with official game hashtags). Sentiment analysis of these tweets can give interesting insights into what emotional processes are involved. Another benefit of tweets is that they are dynamic, and novel results from dynamic analyses (of TV-viewership) suggest that the UOH effect can actually reverse as games unfold (people switch channels away from close games). We therefore also reconsider the UOH, specifically, extending it by both examining sentiment and dynamic changes during the game. To consider such changes, we focus on games that could have been close (high in uncertainty), but ended up being lower in uncertainty. We operationalize such unexpected certainty of outcome as the extent to which games are predicted to be “close” (based on betting odds), but ended up with a bigger difference between the teams’ scores than was expected. Statistical analyses revealed that, contrary to the UOH, games with a bigger difference in score between teams than expected had higher tweets per minute. We also performed sentiment analysis, categorizing each tweet as positive, negative or neutral, and found that games with higher tweets per minute also have a higher percentage of negative tweets. Furthermore, games that have a bigger difference than expected have a higher percentage of negative tweets (compared to games closer to what is expected). This analysis seems to suggest that, contrary to assumptions in sports economics, excitement relates to expressions of negative emotion (and not positive emotion). The results are discussed in terms of innovations in methodology and understanding the role of emotion for “tuning in” to real world events. Further research could explore the specific mechanisms that link negative sentiment to excitement, such as worry or out-group derogation.