GOAALLL!: Using Sentiment in the World Cup to Explore Theories of Emotion

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***Abstract*—Sporting events evoke strong emotions amongst fans and thus act as natural laboratories to explore emotions and how they unfold in the wild. Computational tools, such as sentiment analysis, provide new ways to examine such dynamic emotional processes. In this article we use sentiment analysis to examine tweets posted during 2014 World Cup. Such analysis gives insight into how people respond to highly emotional events, and how these emotions are shaped by contextual factors, such as prior expectations, and how these emotions change as events unfold over time. Here we report on some preliminary analysis of a World Cup twitter corpus using sentiment analysis techniques. After performing initial tests of validation for sentiment analysis on data in this corpus, we show these tools can give new insights into existing theories of what makes a sporting match exciting. This analysis seems to suggest that, contrary to assumptions in sports economics, excitement relates to expressions of negative emotion. The results are discussed in terms of innovations in methodology and understanding the role of emotion for "tuning in" to real world events. We also discuss some challenges that such data present for existing sentiment analysis techniques and discuss future analysis.**

Index terms—Sentiment, sentiment analysis, sport, emotion models, twitter

I. Introduction

When Germany defeated Argentina in the final of the 2014 World Cup, the city of Berlin exploded in fireworks, chants and cheers. Halfway across the world, the streets of Buenos Aires were filled with tearful dejected crowds, but also wracked with angry riots and dozens of arrests. Worldwide, the game was watched with a mixture of emotions by about 1/6th of the planet.

Clearly, sporting events command our interest and evoke strong emotions, yet do so in a structured and repeatable way that makes them of particular interest to social science research. Athletics has long served as a natural laboratory for investigating psychological and economic theory. This research, in turn, shapes the way sports are played as, for example, sports economists use findings to make games more exciting and addictive to their fans [1]. Sport involves high stakes for the participants and stimulate strong emotions and considerable economic investment on the part of spectators. Here, we illustrate ways that sentiment analysis techniques can expand our ability to exploit this natural laboratory.

This article briefly reviews the importance of sporting events as a natural laboratory to study human behavior, especially emotion. We next describe a corpus we collected from the 680 million tweets generated during the 2014 World Cup. Our work on analyzing this data is in its preliminary stages but we illustrate one example of its potential. We use sentiment analysis techniques over this dataset to examine a theory from sports economics concerning what makes a sporting event exciting. Specifically, the Uncertainty of Outcome Hypothesis (UOH) argues that close games are more exciting and therefore draw a larger audience [2]. The role of emotion is assumed by this theory but never tested. We show that sentiment analysis of game tweets can give interesting insights into what emotional processes are involved in people's decisions to watch an athletic match.

II. Background

A. Sport as an Emotion Laboratory

Sporting events have long served as a natural laboratory to study cognitive processes and emotion in particular. Because they follow uniform rules, are repeated many times, and elicit a variety of measurable (and faithfully recorded) events, sport provides a rich source of data against which to test psychological and economic theories.