
'It's incredible – trust me': exploring the role of celebrity athletes as marketers in online social networks

Marion E. Hambrick*

Health and Sport Sciences,
University of Louisville,
HP/Studio Arts Room 104,
Louisville, KY 40292, USA
E-mail: marion.hambrick@louisville.edu
*Corresponding author

Tara Q. Mahoney

Health and Sport Sciences,
University of Louisville,
HP/Studio Arts Room 110,
Louisville, KY 40292, USA
E-mail: tara.mahoney@louisville.edu

Abstract: Sport marketers have acknowledged the popularity of online social networks, but have struggled with transforming them into viable revenue generators. Using celebrity athletes to promote products via online social networks such as Twitter may represent one potential revenue opportunity. This study examined how Lance Armstrong and Serena Williams used Twitter for promotional purposes and utilised content analysis to analyse their combined 7,202 Twitter messages. The celebrity athletes wrote promotional messages 12% of the time, primarily to promote their corporate sponsors and products, charitable organisations and personal activities. Twitter represents a unique marketing resource and communication channel for celebrity athlete product endorsements.

Keywords: celebrity athletes; online social networks; product endorsements; social media; Twitter; sport marketing.

Reference to this paper should be made as follows: Hambrick, M.E. and Mahoney, T.Q. (2011) 'It's incredible – trust me': exploring the role of celebrity athletes as marketers in online social networks', *Int. J. Sport Management and Marketing*, Vol. 10, Nos. 3/4, pp.161–179.

Biographical notes: Marion E. Hambrick is a Sport Administration Assistant Professor in Health and Sport Sciences at the University of Louisville, Louisville, KY, USA. His research interests include lead users and the diffusion of innovations in the sporting goods industry and the use of social media within sport.

Tara Q. Mahoney is a Sport Administration doctoral student in Health and Sport Sciences at the University of Louisville, Louisville, KY, USA. Her research interests include sport-related non-profit organisations, corporate social responsibility and the use of social media within sport.

1 Introduction

Twitter has experienced exponential growth since its inception in 2006. The online social network started with 450,000 United States (US) users in its first year (Fisher, 2009), and has grown to over 175 million global users – adding close to 370,000 new users daily (Twitter, 2011). Industry analysts have attributed much of Twitter's growth to the sport industry, where sport consumers and organisations use the online social network for a variety of reasons (Fisher, 2009). US sport properties such as the National Lacrosse League (NLL) and Women's National Basketball Association (WNBA) use Twitter to post game scores and encourage ticket and merchandise sales. Athletes such as Tiger Woods and Michael Vick used Twitter to reconnect with fans as they moved beyond past transgressions. US college coaches like Les Miles and John Calipari keep fans informed about team activities and upcoming games and events via Twitter. Sport media personnel like ESPN's Pat Forde and Bonnie Ford have Twitter accounts and provide commentary about the latest sport news stories. Additionally, sporting goods companies such as the North Face and Adidas use Twitter to interact with customers and spread information about promotional sweepstakes, new products and coupons.

Witnessing the diversity of Twitter activities, sport industry executives have acknowledged the online social network's popularity, but have noted challenges with transforming Twitter from a popular cultural phenomenon into a viable and sustainable revenue generator. Using celebrity athletes to promote products through the online social network may represent one potential opportunity (Fisher, 2009). Celebrity athletes such as Lance Armstrong and Serena Williams use Twitter regularly and have millions of followers, or Twitter users who subscribe to and read messages posted by the athletes. In turn, the athletes use their Twitter messages, or tweets, to promote themselves, corporate sponsors, charitable organisations and events. For example, Armstrong generates awareness about and solicits donations for the Lance Armstrong Foundation and Livestrong through Twitter. Williams posts tweets regarding her branded products and partnership with HSN – the Home Shopping Network. These messages represent a few of the marketing opportunities Twitter provides. Other athletes could follow in the footsteps of Armstrong and Williams, using Twitter as a platform to market products through their promotional tweets as they spread their messages to millions of followers and potential consumers worldwide.

Twitter presents a variety of opportunities for its users, and researchers have devoted time to exploring the online social network and understanding these opportunities in greater detail. Studies have focused on Twitter's use as a communication tool by sport fans (Clavio and Kian, 2010) as well as sport properties and media outlets (Schoenstedt and Reau, 2010). Two studies have explored Twitter's potential as a marketing mechanism within the sport industry (Kassing and Sanderson, 2010; Pegoraro, 2010). This study extended the Twitter research and specifically addressed how celebrity athletes use the online social network for promotional purposes.

2 Celebrity athletes as online product endorsers

Researchers have conducted numerous studies to examine celebrity athletes – individuals who achieve fame through the sports they play. Hausman and Leonard (1997) studied

professional basketball players such as Michael Jordan, Larry Bird and Magic Johnson and the effect of their celebrity status during the 1990s. The study results revealed the celebrity athletes generated significant gains for their respective teams through increased ticket and merchandise sales as well as additional local and national broadcast rights. The researchers estimated Jordan alone created an additional \$50 million annually for his team and the National Basketball Association (NBA; Hausman and Leonard, 1997). Lawson et al. (2008) documented similar benefits with their study of David Beckham and Major League Soccer (MLS). The researchers found having Beckham on the Los Angeles Galaxy's team roster had a positive effect on the team's game attendance, which increased by 33% even when the celebrity athlete did not play because of injuries. Ticket sales grew another 24% when he did play, and benefits accrued not just to Beckham's team but to MLS on the whole (Lawson et al., 2008).

Celebrity athletes can provide numerous benefits to their teams and leagues. They can also transform their fame into personal monetary gains through product endorsements. Research has shown 20% of advertisements include celebrities, and 60% of those advertisements contain celebrity athletes (Carlson and Donovan, 2008). Sport consumers watching television or reading magazines may see the athletes promoting a variety of products – for example, Maria Sharapova and Cristiano Ronaldo endorsing Nike's sport equipment and apparel. Other celebrity athletes use their sport appeal to endorse non-sport products such as Michael Phelps and Michael Strahan with Subway or Ray Lewis with Old Spice (Lefton, 2010).

Studies have examined celebrity endorsements and reported advertisements featuring celebrity athletes, particularly female athletes, have proliferated over several decades (Ruihley et al., 2010). Many of the ads have incorporated athletes from team sports such as US professional football and baseball (Lear et al., 2008) along with athletes from individual sports like golf and automobile racing (Jones and Schumann, 2000). The athletes have promoted a wide array of goods and services, including sport and leisure products, apparel, banking and financial services, automotives, electronics, restaurants, retailers as well as food and beverages (Carlson and Donovan, 2008; Jones and Schumann, 2000; Lear et al., 2008; O'Reilly and Braedley, 2008; Ruihley et al., 2010; Stone et al., 2003).

In addition to analysing celebrity athlete endorsement trends, sport marketers and researchers have attempted to document what makes celebrity athlete endorsements effective marketing tools. "A successful endorsement campaign requires, at a minimum, that a celebrity athlete is both among the top performers in his or her sport, and able to project a likeable and trustworthy persona to consumers" [Ruihley et al., (2010), p.133]. Sport consumers develop perceptions as they watch athletes perform, and listen and respond positively to celebrity athlete endorsements when they find the athletes personable and skilled in their sports. The development of positive perceptions regarding athletes may lead a consumer to learn more about and ultimately purchase products promoted by the celebrity athletes (Ruihley et al., 2010). Ohanian (1990) developed a conceptual framework to outline three key elements successful celebrity endorsers should possess: physical attractiveness, expertise and trustworthiness. The author conducted exploratory and confirmatory factor analyses to develop scale items for the three variables. Terms such as 'beautiful', 'elegant' and 'sexy' described the physical attractiveness variable. 'Dependable', 'honest' and 'sincere' captured the expertise variable, while 'experienced', 'knowledgeable' and 'qualified' defined the trustworthiness variable. The researcher found when consumers believed celebrity

endorsers possessed physical attractiveness, expertise, and trustworthiness, they took steps to learn about and purchase the endorsed products (Ohanian, 1990).

Sport marketers and advertisers partner with celebrity athletes, hoping the product endorsements will generate positive results. Researchers have identified numerous reasons for using such endorsements: linking products to revered celebrity athletes (Dix et al., 2010; Lear et al., 2008), creating favourable perceptions about the products through positive associations with the celebrity athletes (Ohanian, 1990), generating brand awareness (Lear et al., 2008; O'Reilly and Braedley, 2008), developing brand loyalty (Dix et al., 2010), reaching specific target markets (Lear et al., 2008), increasing product sales (Carlson and Donavan, 2008; Dix et al., 2010; O'Reilly and Braedley, 2008) and boosting stock prices (O'Reilly and Braedley, 2008).

Researchers have also found certain demographic groups respond favourably to celebrity athlete endorsements, including Generation Y consumers. Marketers have targeted these consumers because of their noted interest in celebrity athletes, viewing the athletes as role models based on their social status, physical attractiveness and likeability (Bush et al., 2004). As a result, when the consumers had favourable perceptions of the celebrity athletes, they purchased products and expressed loyalty for the endorsed brands. They also reported a willingness to engage in positive word-of-mouth – telling others about the products, recommending them, and even persuading others to purchase them (Bush et al., 2004; Dix et al., 2010).

The above studies detailed the benefits of using celebrity athlete endorsements to promote and sell a wide variety of consumer products. Studies have explored the effectiveness of celebrity athlete endorsements and identified numerous benefits. They have examined the endorsements found within various media outlets, including magazine advertisements (Ruibley et al., 2010; Stone et al., 2003) and television broadcasts (O'Reilly and Braedley, 2008). More recently, researchers have examined celebrity athlete endorsements found online, particularly in online social networks (Kassing and Sanderson, 2010; Pegoraro, 2010). Studying athletes who use online social networks like Twitter may provide better insights into how the athletes can effectively endorse products through this communication channel. Celebrity athletes and other sport consumers have embraced Twitter as a way to interact with friends and keep current with the latest news.

The online social network lets users create a free homepage at Twitter.com by inputting a username and personal information. After creating their homepages, users can post 140-character messages, or tweets, about topics of their choosing. The user's homepage displays the tweets and represents a diary of sorts; other Twitter users can scroll through and read the messages displayed in reverse chronological order. Users can subscribe to, or follow, messages posted by other users, and each user has an individualised news feed, which provides constant updates of the tweets posted by the users they choose to follow.

Twitter's functionality promotes an open and interactive environment, where users can read tweets from and send tweets to fellow users, effectively loosening the social restrictions found in many other sport environments. Traditionally, sport fans have had limited access to athletes, watching them from afar at sporting events or on television. One-way communications from the athlete to the sport consumer represent the norm. An athlete conducts an interview with a sportscaster or sends a message through a public relations official. Sport fans can see or read the interviews and messages, but often cannot

respond directly to the athlete. Instead, communication outlets, sports agents or public relations personnel filter the messages. Twitter lowers these hurdles and creates a more open environment. Within the online social network, sport fans can send messages to their favourite athletes, who can in turn read and respond to them. This emergent form of media offers fans the opportunity to engage in two-way communication with athletes and fellow Twitter (2011) users.

Researchers have noted this interactive environment distinguishes Twitter from other online social networks and mainstream forms of communication such as television, magazines and newspapers. Interactions via Twitter give sport fans the chance to communicate directly with and learn more about athletes and other Twitter users within the sport industry. The online social network provides the average sport consumer with a chance to engage in personalised interactions with their favourite athletes, teams and leagues – dialogues not often found within mainstream media outlets (Dittmore et al., 2008; Kassing and Sanderson, 2010; Pegoraro, 2010). As a result, Twitter has distinguished itself and captured the attention of sport consumers. The online social network has become a cultural phenomenon, and sport industry executives and researchers have tasked themselves with understanding and finding ways to capitalise on Twitter's popularity (Fisher, 2009).

As part of their efforts, researchers have spent more time learning about Twitter – who uses it, how they use it and what opportunities exist through this usage within various sport contexts. Some researchers have explored how sport properties and media outlets use the online social network as a communication tool (Schoenstedt and Reau, 2010), while other studies have examined how sport fans use Twitter to learn about their favourite athletes (Clavio and Kian, 2010). Researchers have also addressed how professional athletes use Twitter. For example, Kassing and Sanderson (2010) examined Twitter use among professional cyclists during the 2009 Giro d'Italia and found the athletes used the online social network to discuss race conditions during the event. The cyclists wrote messages about music, television shows and restaurants; they also invited followers to check out pictures, blogs and websites. One cyclist even promoted a cycling manufacturer and praised the company's product through his tweet; in turn, his Twitter followers provided similarly positive feedback about the product. Through this exchange of tweets, the manufacturer received free advertising and unsolicited product testimonies which may have encouraged other Twitter users to learn about or purchase the product (Kassing and Sanderson, 2010).

Pegoraro (2010) also studied professional athletes' use of Twitter and found evidence of using the online social network for marketing purposes. The researcher examined professional athletes' tweets across multiple sports (e.g., Major League Baseball, National Football League, golf and tennis) to identify how the athletes used Twitter, whether discussing topics of interest to them or interacting with their friends and fans. The study also looked for evidence of tweets 'relating to business life', or athletes using Twitter to discuss their athletic activities and promote products. The researcher found the majority of tweets involved athletes exchanging messages with other athletes and Twitter followers. A much smaller percentage of tweets fell into the 'business life' category, and only a few of those messages contained product endorsements. The researcher highlighted several athletes – Lamar Odom, Freddy Adu and Serena Williams – who specifically used Twitter for marketing purposes (Pegoraro, 2010). Researchers in a separate study reported similar findings after examining professional athletes and

their Twitter activities. Their results revealed the athletes used Twitter primarily to interact with other Twitter users and discuss non-sport related topics such as their favourite musicians or restaurants. Only 5% of the analysed messages contained promotional content (Hambrick et al., 2010). Both studies identified an underutilised opportunity – using professional athletes and Twitter to promote products. Athletes use Twitter to interact directly with thousands or even millions of followers, and the online social network may represent an effective way to market to a wide audience through their tweets (Hambrick et al., 2010; Pegoraro, 2010).

Previous research provides evidence of Twitter's potential as a marketing mechanism within the sport industry. This study explored the opportunity in more detail by examining how celebrity athletes use Twitter for promotional purposes. Sport executives looking for revenue opportunities may benefit from understanding celebrity athlete Twitter usage and identifying ways to transform such use into revenue streams. Therefore, the purpose of the study was to explore how celebrity athletes use Twitter from a promotional perspective. The study addressed two research questions.

- 1 How do celebrity athletes use Twitter in general?
- 2 How do celebrity athletes use Twitter for promotional purposes?

3 Method

This exploratory study used content analysis to achieve the research purpose and address the research questions. Content analysis represents “any qualitative and sense-making effort that takes a volume of qualitative material and attempts to identify core consistencies” [Patton, (2002), p.453]. Researchers have used the analytical technique frequently within sport contexts, including examining corporate sponsorships (Cunningham et al., 2009) and customer satisfaction (Greenwell et al., 2007). Sport communication studies have used content analysis to analyse commercials (Kelly and Turley, 2004), advertising clutter (Carroll, 2009), and celebrity athlete endorsements (Jones and Schumann, 2000; O'Reilly and Braedley, 2008; Ruyhley et al., 2010; Stone et al., 2003).

The above studies demonstrate the various uses of content analysis within sport research, including examining celebrity athletes. Pegoraro (2010) and Hambrick et al. (2010) also used content analysis to study celebrity athletes and their Twitter use. Both studies categorised a large collection of tweets posted by professional athletes, and used a set of categories derived from Clavio (2008) and Seo and Green (2008). Clavio (2008) examined how sport fans used sport-related message boards, while Seo and Green (2008) studied sport consumers and their general online sport consumption. Pegoraro (2010) and Hambrick et al. (2010) used categories from the above studies to classify a wide range of professional athlete tweets. The researchers conducted content analysis to understand how the athletes used Twitter – whether to interact with other Twitter users, share personal and sport information or promote products and events (Hambrick et al., 2010; Pegoraro, 2010).

This study used a similar research approach and categories for the content analysis. The first three categories originated from research conducted by Clavio (2008).

- 1 *interactivity* represents direct communication between Twitter users
- 2 *diversion* reflects the discussion of non-sport topics like movies and restaurants
- 3 *information sharing* includes the discussion of sport-related topics such as athletic practices and competitions.

The remaining three categories derived from Seo and Green (2008).

- 4 *content* represents tweets containing links to pictures, videos and websites
- 5 *fanship* includes messages with comments about other athletes and teams
- 6 *promotional* reflects endorsements of sporting events, corporate sponsors, products and activities.

The study focused on two celebrity athletes and how they used Twitter for promotional purposes. Previous studies conducted by Pegoraro (2010) and Hambrick et al. (2010) included a wide array of athletes and examined a small number of tweets posted by each athlete. Conversely, this study used purposeful sampling, focusing on a smaller number of athletes while examining a larger sample of messages posted by the athletes. “Qualitative inquiry typically focuses on relatively small samples, even single cases ($N = 1$)...selected *purposefully* to permit inquiry into and understanding of a phenomenon in depth” [Patton, (2002), p.46]. The study used purposeful sampling to gather more detailed insights into a smaller selection of athletes using Twitter for promotional purposes.

The study focused on Lance Armstrong and Serena Williams, two popular celebrity athletes in the Twitter environment. At the time of the study, Armstrong had 2.7 million followers, and Williams had 1.9 million followers. Their follower numbers placed them in the Top 100 most popular Twitter users; of the more than 175 million Twitter users, Armstrong ranked 32nd and Williams 74th. Other athletes in the Top 100 included Shaquille O’Neal, Tony Hawk and Dwight Howard (Humidity Labs, 2011). Additionally, Williams and Armstrong ranked among the top most influential celebrity athletes in Twitter based on their calculated impact factors. The impact factors range from zero to 100 and represent a Twitter user’s level of influence, or the number of people following the user and how often she or he posts messages. Using this criterion, the research firm Twitalyzer declared Brazilian comedian Rafinha Bastos the most influential Twitter user with a score of 90, and the NFL’s Chad Ochocinco came in second place with 89. Excluding Ochocino, Twitalyzer’s ranking of the Top 10 most influential sport figures placed Williams first and Armstrong second with impact factor scores of 72 and 50, respectively (Leonhardt, 2011).

This study chose to analyse Armstrong and Williams because of their significant Twitter popularity and influence. Both athletes also had numerous product endorsement contracts. Armstrong endorsed products for 24 Fitness, FRS Healthy Energy, Giro, Honey Stinger, Johnson, Michelob Ultra, Nike, Nissan, Oakley, RadioShack, SRAM and Trek (Armstrong, 2011). Williams also had a product endorsement contract with Nike along with EA Sports, Gatorade, Hewlett-Packard, HSN, Mission Skincare, Oreo and Wilson (Williams, 2011). The athletes promoted products through television and magazine advertisements, yet Armstrong and Williams could conceivably go beyond the scope of traditional media outlets and use Twitter as another platform to promote their

sponsors and products. Thus, this study utilised content analysis to explore how the celebrity athletes used Twitter for promotional purposes.

The content analysis required retrieving posted messages from each athlete's Twitter homepage. The two athletes wrote a combined 12,000 tweets since creating their accounts. Twitter limits the number of archived messages readers can access; however, the site still displayed 3,579 messages from Armstrong and 3,623 from Williams. Their 7,202 tweets fell into one of six categories derived from previous studies examining internet usage in sport (Clavio, 2008; Hambrick et al., 2010; Pegoraro, 2010; Seo and Green, 2008). The two researchers independently placed the messages into the aforementioned categories. They compared their initial categorisations and found a 94% match, which reflected a high level of inter-rater reliability (Kassarjian, 1977). Together, the researchers discussed the remaining tweets which did not have a category match until ultimately a match existed for 100% of the messages. Frequency tables captured the message categories and the percentage of tweets for each category (Table 1). Further analysis included placing the promotional messages into newly identified sub-categories (Table 2) and examining each athlete's corporate sponsors and related promotional tweets (Tables 3 and 4).

Table 1 Content analysis of celebrity athlete total Twitter usage

| <i>Categories</i> | <i>Lance Armstrong</i> | | <i>Serena Williams</i> | |
|---------------------|-------------------------|-----------------------------|-------------------------|-----------------------------|
| | <i>Number of tweets</i> | <i>Percentage of tweets</i> | <i>Number of tweets</i> | <i>Percentage of tweets</i> |
| Interactivity | 1,275 | 36% | 2,660 | 73% |
| Diversion | 674 | 19% | 281 | 7% |
| Content | 573 | 16% | 127 | 3% |
| Promotional | 437 | 12% | 428 | 12% |
| Information sharing | 390 | 11% | 28 | 1% |
| Fanship | 230 | 6% | 99 | 3% |
| Total | 3,579 | 100% | 3,623 | 100% |

Table 2 Content analysis of celebrity athlete promotional Twitter usage

| <i>Sub-categories</i> | <i>Lance Armstrong</i> | | <i>Serena Williams</i> | |
|-----------------------|-------------------------|-----------------------------|-------------------------|-----------------------------|
| | <i>Number of tweets</i> | <i>Percentage of tweets</i> | <i>Number of tweets</i> | <i>Percentage of tweets</i> |
| Product | 131 | 30% | 148 | 35% |
| Charity | 125 | 29% | 87 | 20% |
| Athlete | 114 | 26% | 113 | 26% |
| Sport | 63 | 14% | 6 | 1% |
| Friends and family | 4 | 1% | 74 | 17% |
| Total | 437 | 100% | 428 | 100% |

Table 3 Lance Armstrong's corporate sponsors and related promotional tweets

| <i>Corporate sponsors</i> | <i>Number of tweets</i> | <i>Example promotional tweets</i> |
|---------------------------|-------------------------|---|
| RadioShack | 37 | What's 28? Watch the new @RadioShack spot to find out. http://bit.ly/bJXepj #TRS #Team28 #TourdeFrance |
| Trek | 19 | Easy recovery ride w/ @fastrack9. Rode the new Trek Unity TT bike. Love it. |
| Nike | 15 | Not how you start, but how you finish. Check out the new #justdoit spot from Nike. I was proud to be a part! http://go.nike.com/humanchain |
| Nissan | 11 | Loving my new Nissan LEAF. Anyone wants to get behind the wheel of one then check this out! https://www.drivenissanleaf.com/Event/ |
| Michelob Ultra | 6 | Just heard our new Mich Ultra spot will show during the Super Bowl! Here is a sneak peek, full spot during the game. http://bit.ly/ultrasb |
| Oakley | 5 | Meeting Pat and Steph from @Oakley – looking at some cool new product. |
| Honey Stinger | 3 | Good 3ish hour ride w/ @Len_Zanni and all the guys from @HoneyStinger. Love their products. |
| SRAM | 3 | New MTB [mountain bike] is insane. First ride on the new SRAM XX as well. Hands down best shifting I've experienced on a MTB. |
| FRS Healthy Energy | 2 | In honor of @Livestrong Day, my partners @FRS are donating 30% of all sales to @Livestrong through Wednesday. Check out FRS.com! |
| 24 Fitness | 0 | |
| Giro | 0 | |
| Johnson | 0 | |
| Total | 101 | |

Table 4 Serena Williams' corporate sponsors and related promotional tweets

| <i>Corporate sponsors</i> | <i>Number of tweets</i> | <i>Example promotional tweets</i> |
|---------------------------|-------------------------|---|
| HSN | 117 | In my HSN collection, mostly the prices range from \$29–\$49. EVERYTHING is under \$100. I want everyone to have something. |
| Nike | 12 | Hey guys! I am on a plane to NYC. I am doing a NIKE event there with John Mc!! Love NIKE, I'm so excited!! |
| Gatorade | 11 | Thanks to @Gatorade for helping me evolve the game! Check out the G Series ad made in honor of my Wimbledon win! http://bit.ly/aBWp0L |
| Mission Skincare | 7 | Hi guys! Check out my NEW Mission Skincare products TONIGHT at 11:30pm EST and tmrw at 1:30pm EST and 7:30pm (cont) http://tl.gd/646pdg |

Table 4 Serena Williams' corporate sponsors and related promotional tweets (continued)

| <i>Corporate sponsors</i> | <i>Number of tweets</i> | <i>Example promotional tweets</i> |
|---------------------------|-------------------------|--|
| HP | 1 | Just found out my trainer Mackie Shilstone has an iPad!!! He's in the in crowd!!! Do u all have an iPad?? I'm an HP girl!! |
| EA Sports | 0 | |
| Oreo | 0 | |
| Wilson | 0 | |
| Total | 148 | |

4 Results

The content analysis revealed diversity in the celebrity athletes' Twitter uses. Armstrong used Twitter to discuss a range of topics distributed among the six categories, whereas Williams used Twitter primarily to have conversations with other athletes, family members, friends and fans. However, both athletes incorporated promotional tweets among the various messages on their Twitter homepages.

Armstrong wrote 3,579 tweets, which fell into one of six categories. The interactivity category (1,275 tweets, 36%) included direct conversations with fans, friends and family members. The diversion category (674 tweets, 19%) contained messages about non-sport related topics ranging from his favourite musicians to upcoming travel plans. The content category (573 tweets, 16%) included messages where Armstrong shared pictures and website links with his Twitter followers. The promotional category (437 messages, 12%) reflected messages promoting Livestrong and his corporate sponsors, among other organisations and activities. The information sharing category (390 tweets, 11%) included discussions about sport-related topics such as cycling team activities, events and training. Lastly, the fanship category (230 tweets, 6%) contained messages about sport figures and teams Armstrong admired. The celebrity athlete mixed tweets about cycling, Livestrong and his daily life with his promotional messages and direct communication with fellow Twitter users. Armstrong varied the content of his tweets throughout the six categories, and used Twitter as a promotional tool by interspersing product endorsements among a broader range of messages.

Williams posted a total of 3,623 messages. The interactivity category (2,660 tweets, 73%) captured ongoing conversations with her celebrity athlete sister Venus Williams and other Twitter users. The promotional category (428 tweets, 12%) featured her corporate sponsors and updates about her upcoming HSN appearances. The diversion category (281 tweets, 7%) contained tweets about her time spent going to rock concerts and restaurants with friends. The content category (127 tweets, 3%) included shared links to her favourite websites. The fanship category (99 tweets, 3%) contained encouraging messages for teams such as the Miami Dolphins. Finally, the information sharing category (28 tweets, 1%) included messages about tennis tournaments and related activities. The results of the content analysis revealed Williams used Twitter primarily for interactivity, or conversing with Twitter users.

While differences existed between their category percentages, both athletes used Twitter for promotional purposes, and the study explored each athlete's promotional

tweets more fully. The celebrity athletes promoted a variety of corporate sponsor products as well as events and products of personal importance to them. Fisher (2009) noted the interest of corporate sponsors and sport managers in transforming Twitter into a sustainable revenue generator. Having celebrity athletes use their Twitter messages to promote products may represent one such activity. Five promotional sub-categories arose from the promotional tweets, which were placed into one of the following:

- 1 *product* contained direct mentions of the athlete's corporate sponsors or other organisations and their respective goods, services and events
- 2 *charity* included tweets about fundraising or non-profit organisations
- 3 *athlete* represented promotional messages about the athlete's personal life and activities
- 4 *sport* included messages regarding an upcoming or current sporting event
- 5 *friends and family* represented tweets promoting the athlete's personal acquaintances and endeavours.

Armstrong posted 437 promotional tweets, representing 12% of his 3,579 total tweets. The product sub-category (131 tweets, 30% of the promotional tweets) contained the most promotional tweets. Of these tweets, 101 messages specifically highlighted Armstrong's corporate sponsors (Table 3). At the time of the study, Armstrong had 12 corporate sponsors: 24 Fitness, FRS Healthy Energy, Giro, Honey Stinger, Johnson, Michelob Ultra, Nike, Nissan, Oakley, RadioShack, SRAM and Trek. RadioShack received 37 mentions with messages like "Gonna reserve my new iPhone 4 @RadioShack on 6/15. Can't wait!! #verylimited". Armstrong mentioned Nike 15 times with tweets such as "Filmed a new Nike spot on tomorrow's finish climb the day after Tour de Suisse. Gorgeous area. Will fwd link in just a bit". The cyclist tweeted about Nissan 11 times, including the tweet "Back in ATX and about to get my new Nissan LEAF. Can't wait! I'll send pics ASAP". Michelob Ultra was mentioned six times with messages such as "Just announced a new partnership w/ Michelob Ultra. About to walk out and speak to 5,000 distributors from around the USA. #ultra". Other corporate sponsors receiving mentions included FRS Health Energy, Honey Stinger, Oakley and SRAM. While nine of his corporate sponsors had tweets written about them, three sponsors – 24 Fitness, Giro, and Johnson – received no mention among Armstrong's 3,579 tweets. Instead Armstrong used the remaining messages to highlight some of his favourite books, restaurants and musicians. In one such promotional tweet, he wrote, "Listening to Dark Was the Night. A benefit album for @redhotmusic. It's incredible – trust me".

Following the product sub-category, the charity sub-category (125 tweets, 29% of the promotional tweets) included messages supporting various charitable organisations. The vast majority of these tweets supported Livestrong with messages such as "RadioShack joins #LIVESTRONG's Haiti Relief. Folks in the USA go to your local store to make a \$1 donation. www.livestrongblog.org". This message served dual purposes, promoting the fundraising efforts for Haitians and generating goodwill for his cycling team sponsor RadioShack, which matched donations for the cause. The athlete sub-category (114 tweets, 26% of the promotional tweets) contained self-promotional messages with many of the tweets discussing *Comeback 2.0*, a book documenting his return from his first retirement. His tweets often noted special book signing events with messages like

“Hey Los Angeles! I’m doing a Comeback 2.0 book signing @Borders. 2:30 tomorrow. 14651 Ventura Blvd. Sherman Oaks, CA. Come on out”. The sport sub-category (63 tweets, 14% of the promotional tweets) contained messages promoting the sport of cycling. One such tweet was “Someone told me tonight that viewership for Versus’ Tour coverage is up 80+%. Great news, been an exciting TdF. Tune in folks!”. His message promoted the Tour de France and Versus, which had exclusive US television broadcasting rights to the event. Finally, the friends and family sub-category (four tweets, 1% of the promotional tweets) included messages promoting Armstrong’s friends and his US residence in Austin, Texas.

Similar to Armstrong, Williams posted 428 promotional tweets, or 12% of her total 3,623 Twitter messages. The same five promotional sub-categories were used to classify Williams’ tweets. Like Armstrong, Williams had numerous corporate sponsorships at the time of the study with eight organisations: EA Sports, Gatorade, Hewlett-Packard, HSN, Mission Skincare, Nike, Oreo and Wilson. The product sub-category (148 tweets, 35% of the promotional tweets) contained messages representing her endorsements deals, and all of the tweets promoted her corporate sponsors (Table 4). HSN received 117 mentions with tweets such as “Did anyone see my coat dress yesterday on HSN?? Thoughts?? I’m back on with it in 1 hr! :)”. Williams tweeted about Nike 12 times, including “Visit my Facebook fan page for details on the Nike Tennis Event for your chance to meet me! www.facebook.com/serenawilliams”. Gatorade received 11 mentions with tweets such as “Just finished an amazing @Gatorade presentation. Love Gatorade. I am so excited for the new products!! Are you??” Williams also tweeted about Mission Skincare seven times, including “Hey guys. Thanks for the support for my @HSN_Official. I will be BACK on at 1:30 for Mission Skin Care!! And 2pm for more clothes!! Yea!”, and Hewlett-Packard received one mention. Unlike Armstrong, Williams only posted about her corporate sponsors in her product tweets. However, while Williams made more product mentions than Armstrong, she too neglected to tweet about three sponsors – EA Sports, Oreo and Wilson – amidst her 3,623 tweets.

The athlete sub-category (113 tweets, 26% of the promotional tweets) allowed Williams to promote herself with messages such as “Visit my website: www.serenawilliams.com to see backstage video blogs of my appearance on Oprah!” The tweet not only highlighted her appearance on the television show, but provided followers with extended access to information found on her personal website. The charity sub-category (87 tweets, 20% of the promotional tweets) contained messages dedicated to promoting various charitable organisations. Most of the tweets (58) supported charities with which Williams had a personal affiliation. One message said, “I recently opened my second Secondary School in Africa. Visit www.theswf.org for more information. Please support the 92K Mission!” The friends and family sub-category (74 tweets, 17% of the promotional tweets) included messages promoting her friends and family and their activities. Messages included “La La’s Full Court Wedding is premiering 2nite on VH1 at 10:30pm est. Who’s gonna watch?” Lastly, the sport sub-category (six tweets, 1% of the promotional tweets) contained messages to promote tennis with tweets such as “Playing the first annual Williams Invitational. Singles are happening now...Hopefully my partner @vernondavis85 and I will win doubles!”

The study results showed both Armstrong and Williams used promotional tweets 12% of the time. The athletes promoted their corporate sponsors, charitable organisations, sports and themselves. Of the five promotional sub-categories, both athletes used the product sub-category most frequently. Williams publicised her products and appearances

on HSN; Armstrong promoted his product and team corporate sponsors. However, the athletes failed to mention three of their respective sponsors throughout their numerous messages. Both Williams and Armstrong used promotional tweets to support some of their favourite products and the endeavours of their friends and family members. The charity sub-category contained numerous tweets as the athletes promoted charitable events and organisations while soliciting donations and support. Additionally, as highly recognised celebrity athletes, Williams and Armstrong used Twitter and the athlete sub-category to promote themselves and their personal activities – television show appearances and interviews, photo and commercial shoots and other awards and recognition. Finally, the athletes diverged on the last two sub-categories. Armstrong used the sport sub-category more frequently to promote cycling events like the Tour de France and his team, while Williams used the friends and family sub-category more often to promote her closest acquaintances and their activities. Overall, the results revealed the celebrity athletes used Twitter in a variety of ways to promote organisations, individuals and events of importance to them.

5 Discussion

Celebrity athletes have the ability to attract a potential consumer's attention through their athletic abilities and personable natures, making them ideal candidates to endorse products (Shuart, 2007). The study used content analysis to examine celebrity athletes Lance Armstrong and Serena Williams and their Twitter usage, and focused on how they used Twitter in general as well as for promotional purposes. Online social networks such as Twitter have emerged as an efficient means to reach millions of current and potential consumers. They can also provide fans with unprecedented access to their favourite athletes. This direct communication between athletes and their fans through Twitter represents a vehicle whereby athletes can promote themselves, their sport, team and corporate sponsors. As such, the online social network may provide organisations with numerous opportunities to leverage this unique interaction – attracting and connecting with sport consumers and increasing consumption behaviours.

5.1 Theoretical implications

The study followed previous research analysing the promotional uses of Twitter and extended the knowledge regarding the use of social networking sites as marketing platforms. The focus of the study was on celebrity athletes Lance Armstrong and Serena Williams and how they used Twitter from a promotional perspective. Researchers have documented the benefits of using celebrity athletes to market products (Bush et al., 2004; Dix et al., 2010; Shuart, 2007). The results of the study revealed the athletes used Twitter for marketing purposes, incorporating promotional tweets amidst a broader range of topics for their combined 4.6 million followers.

Previous research has identified numerous examples of celebrity athlete product endorsements, primarily to promote consumer goods and services (e.g., sport equipment and apparel, restaurants, food and beverages, automobiles and automotive services) (Carlson and Donavan, 2008; Jones and Schumann, 2000). This study used content analysis to examine the tweets of two celebrity athletes and their promotional tweets in more detail. Studies have used content analysis to explore celebrity athlete endorsements

featured on television and in magazine advertisements (O'Reilly and Braedley, 2008; Rauhley et al., 2010; Stone et al., 2003) as well as online social networks such as Twitter (Hambrick et al., 2010; Kassing and Sanderson, 2010; Pegoraro, 2010). Armstrong and Williams had a combined 20 corporate sponsors from various consumer products organisations, and an examination of their tweets revealed numerous product endorsements interspersed among their 7,202 messages.

Approximately 12% of each athlete's tweets consisted of promotional messages. The product tweets represented a blend of endorsements for sport-related equipment with other consumer products. Armstrong's 131 product promotional messages highlighted products such as Trek bicycles, Nissan automobiles, and Michelob Ultra beer. Similarly, Williams' 148 product promotional messages featured products such as Nike sport equipment, Mission Skincare and the HSN. As such, the findings reflected previous literature suggesting celebrity athletes can partner with sport and non-sport related organisations to sell a variety of goods and services (Carlson and Donovan, 2008; Jones and Schumann, 2000).

Armstrong and Williams represent two of the more influential Twitter users in sport (Leonhardt, 2011), which suggests the two athletes could serve as effective celebrity endorsers in the Twitter environment. Corporate sponsors use celebrity product endorsements to attain numerous benefits such as increased brand awareness and sales (O'Reilly and Braedley, 2008). Of his 138 product tweets, Armstrong made 101 tweets specifically about nine of his twelve corporate sponsors with his cycling team sponsor RadioShack mentioned in 37 tweets. Similarly, Williams used all of her 148 product tweets to post promotional messages about five of her eight corporate sponsors; HSN received the most coverage with 117 tweets.

The other promotional messages posted by the athletes focused on several areas of importance to them, including their respective sports, charities, friends and family members. Armstrong used Twitter to promote numerous activities and organisations closely linked to him such as Livestrong and Mellow Johnny's, an Austin-based bicycle shop. Williams also posted promotional messages in support of famous family members and friends such as Venus Williams and Kim Kardashian. Yet Williams' frequent promotion of her celebrity athlete sister likely represented a unique occurrence. While Armstrong mentioned a few famous friends, he engaged in this activity less frequently than Williams, who posted nearly 30 messages about her celebrity sister in addition to tweets about fellow celebrities. Other celebrity athletes would probably post about friends and family members more in line with Armstrong's frequency than with Williams'.

Both Williams and Armstrong created promotional messages which presented the sponsoring organisations in a positive light and created a call to action, whether encouraging consumers to check out the manufacturer's website or purchase the product – benefits corporate sponsors seek when partnering with celebrity athletes to create endorsements (O'Reilly and Braedley, 2008). Interestingly, the athletes used Twitter to promote charitable organisations. This finding differs from previous research where celebrity athlete endorsements featured primarily consumer goods and services (Carlson and Donovan, 2008; Jones and Schumann, 2000). Armstrong and Williams have close affiliations with several charitable organisations. Armstrong posted 125 messages about charities, and the vast majority of the tweets supported Livestrong – encouraging Twitter followers to donate or keep current with the organisation's latest happenings. His other charity messages promoted cancer research and related organisations. Likewise, Williams posted 87 messages about charities. The majority of her tweets promoted the

Serena Williams Foundation and fundraising efforts for the 92K Mission and BuildAfricaSchools.com. Twitter presents a unique outlet for celebrity athletes because they can discuss topics of their choice (Kassing and Sanderson, 2010; Pegoraro, 2010). A traditional celebrity endorsement found in a magazine or on television might focus primarily on the endorsed product. With Twitter the athletes can intersperse corporate sponsor product endorsements amongst messages promoting organisations, events, products and people of personal interest to them (Kassing and Sanderson, 2010; Pegoraro, 2010). Charitable organisations and the promotion of corporate social responsibility activities may represent an untapped opportunity for celebrity athletes to use their persuasive voices via social media for the good of non-profit organisations.

With the promotion of charities and corporate sponsors, the celebrity athletes used promotional tweets more than twice as frequently as professional athletes in previous studies examining athlete Twitter usage (Hambrick et al., 2010; Pegoraro, 2010). However, the athletes in this study took care to ensure they avoided overwhelming their followers with promotional tweets, positioning the messages among thousands and providing unique benefits to their followers. For example, Armstrong used Twitter to maintain a positive rapport with his fan base and promote his 'TwitterRides' where he invited Twitter followers in various cities to meet him for casual bicycle rides. His tweets included, "Hey Vermont – let's ride!! 4pm in Waterbury. Corner of Main St and Warren Ct at what looks like a park to me (on Google Earth). #TwitterRide!" This kind of Twitter interaction increased his accessibility to fans, which may have indirectly influenced their interest in his product endorsements. Using celebrity athletes to present unique offerings through a mix of tweets from different categories not only keeps followers interested and grows the fan base, but also provides an excellent medium for the promotion of sponsors, products and events (Hambrick et al., 2010; Kassing and Sanderson, 2010; Pegoraro, 2010).

5.2 *Practical implications*

Celebrity athletes and sport marketers can use social media as part of a viable communication strategy to connect with fans to build and maintain relationships over time. Emphasising long-term relationships with sport consumers can decrease price sensitivity and increase brand loyalty and product consumption (Bush et al., 2004; Dittmore et al., 2008). Therefore, sport marketers should consider capitalising on communication opportunities with the hopes of maximising future profits. The majority of the product promotional tweets focused on each athlete's respective corporate sponsors. In Armstrong's case, a relatively even distribution existed among the messages posted for his corporate sponsors. Conversely, most of Williams' product messages focused on her HSN corporate sponsorship. Additionally, the athletes failed to mention six sponsors during their 7,202 tweets. Corporate sponsors use celebrity athlete endorsements to attain numerous benefits; however, they can only attain those benefits if their celebrity athletes work diligently to promote the products. Organisations sponsoring celebrity athletes such as Armstrong and Williams may want to emphasise promotional opportunities for their athletes when using social media outlets like Twitter. They may also want to ensure a balanced approach exists with the promotional messages, distributing them with enough frequency among a broader array of messages.

Marketers have expressed an interest in using Twitter more frequently. In response to this demand, Twitter created a special online guide called 'Twitter for business' to assist

the business community with learning about Twitter and finding ways to monetise the online social network by creating Twitter homepages and posting messages for current and potential consumers. Previous research has suggested when consumers believe celebrity athletes possess physical attractiveness, trustworthiness and expertise, they engage in positive behaviours after seeing the endorsements (Ohanian, 1990). These behaviours include learning more about and purchasing the endorsed products (O'Reilly and Braedley, 2008).

Corporate sponsors may benefit from highlighting the personable qualities of their celebrity athletes while using the product endorsements more effectively in online social networks. Mercedes-Benz represents one example of a company incorporating social media and celebrity athletes into its marketing strategy. The company developed an elaborate Twitter campaign and event as a lead up to the premiere of its first ever Super Bowl commercial. Mercedes-Benz created four automotive teams around the country and held a 'tweet-fuelled' race to the 2011 Super Bowl in Dallas. Each team was assigned a celebrity coach, including Serena Williams, who served as the coach for the Chicago-based team. Williams posted messages on her Twitter homepage such as "Don't forget to include #MBteamGL in your tweets today! I need your help to win the #MBtweetrace! Follow @Hoo_de_Hoo for more details". The four teams and their coaches encouraged Twitter users to follow them on Twitter and tweet for their favourite teams; the team accumulating the most tweets won the race. Mercedes-Benz hoped to attract new customers by promoting its products through a creative social media initiative, linking the campaign to a major sporting event and using celebrity athletes like Williams to generate interest in the promotion (Mercedes-Benz, 2011).

Organisations within and outside of the sport industry can use celebrity athletes and online social networks to promote their products. However, they must recognise social media represents an unfiltered form of communication, which may provide too much access to information or interfere with an organisation's overall objectives. Sport managers should recognise this two-way communication opens the door to both positive and negative comments from users and followers (Dittmore et al., 2008). For example, Williams expressed her discontent for British Airways with the tweets, "Ok British Air – I never know if I can fly this airline again... They are a big question... The customer service is....." and "Ok how about this guys – @BritishAirways is one of my worst experiences. Virgin on the other hand is amazing". Online social networks provide numerous opportunities for athletes and organisations to effectively reach their consumers, yet this unfiltered form of communication gives Twitter users the opportunity to express their negative opinions to a captive audience of millions. Corporate sponsors also face the risk of having their product endorsements surrounded by negative messages or overshadowed by other promotional tweets on an athlete's Twitter homepage. As such, sponsors may want to implement guidelines on how, when, and how often their messages occur in the endorsed athlete's Twitter feed.

Corporate sponsors using social media should also comply with the guidelines issued by the US Federal Trade Commission (FTC) in the 2009 Guides on Endorsements and Testimonials, which address the use of product endorsements found in online social networks like Twitter. Celebrities who use social media to make endorsements should disclose their relationships with the corporate sponsors upfront and make their readers and followers explicitly aware of the existing relationships. Additionally, the celebrity athletes should have firsthand knowledge of the products they endorse – that is, personally using the products they promote (McKelvey and Masteralexis, 2011). Many of

the tweets in this study incorporated the athlete's personal perspective as Armstrong and Williams encouraged consumers to check out products based on their personal satisfaction with them. For example, Armstrong posted "New MTB [mountain bike] is insane. First ride on the new SRAM XX as well. Hands down best shifting I've experienced on a MTB". Likewise, Williams wrote the tweet, "At grocery store..... I'm always buying Gatorade!! @Gatorade <http://tweetphoto.com/38818855>". The tweets let their Twitter followers know they personally enjoyed using the product, which might encourage others to purchase the same. Sport marketers using celebrity endorsements should ensure the messages their celebrities post appear believable and heartfelt, reflecting the characteristics of expertise and trustworthiness found important in previous studies examining celebrity endorsements (Ohanian, 1990; Shuart, 2007).

Twitter followers who view Armstrong and Williams as personally attractive, trustworthy, and experts in their respective sports may choose to learn about and purchase the products they promote. Online social networks represent a unique opportunity for celebrity athletes to endorse products. Interspersing promotional messages among a wide array of other personal messages may give the tweets a more genuine feel, one not found in traditional forms of advertising. Professional athletes can help organisations capitalise on this potential revenue opportunity as they promote themselves, important activities, events, corporate sponsors and products. Using celebrity athletes and mixing their promotional tweets with other messages may represent a viable strategy for athletes and organisations looking to endorse products without overwhelming or alienating Twitter users (Ruihley et al., 2010). Social networking sites such as Twitter can serve as a powerful communication resource in promoting sport and consumer product consumption.

6 Limitations and future research

Several limitations existed within the study. First, the study examined professional athletes and their Twitter messages. College athletes may use Twitter more frequently for promotional purposes or in different ways than identified in the study. Second, the study focused on Twitter usage from the celebrity athlete's perspective. Data collected from sport properties, organisations and consumers may provide a different picture regarding Twitter's effectiveness as a promotional tool. Finally, Twitter represents a dynamic environment. The celebrity athletes in the study have posted messages since the data were collected initially, and the content of their messages and percentages of promotional tweets may change over time.

To address these limitations, future research could examine social media usage at the intercollegiate level, focusing on student-athletes and how they use Twitter to discuss sport properties and products. Future research could also query sport fans and their perspectives about using Twitter as a marketing tool. Respondents could address whether they view celebrity athletes as effective product endorsers and why, whether some athletes and their endorsements meet a user's needs and prove more effective than other messages. Additionally, studies could continue to examine the Twitter environment and messages posted over time, gauging whether celebrity athletes, sport organisations and sport consumers identify increasingly sophisticated ways to use Twitter.

References

- Armstrong, L. (2011) 'Sponsors – Lance Armstrong', LanceArmstrong.com, available at <http://lancearmstrong.com/> (accessed on 30 April 2011).
- Bush, A.J., Martin, C.A. and Bush, V.D. (2004) 'Sports celebrity influence on the behavioral intentions of Generation Y', *Journal of Advertising Research*, Vol. 44, No. 1, pp.108–118.
- Carlson, B.D. and Donavan, D.T. (2008) 'Concerning the effect of athlete endorsements on brand and team-related intentions', *Sport Marketing Quarterly*, Vol. 17, No. 3, pp.154–162.
- Carroll, D.M. (2009) 'Commercial programming at a single-sport cable channel: strategies and practices at Golf Channel', *International Journal of Sport Communication*, Vol. 2, No. 2, pp.484–499.
- Clavio, G. (2008) 'Uses and gratifications of internet collegiate sport message board users', *Dissertation Abstracts International*, Vol. 69, No. 8, retrieved from ProQuest Digital Dissertations database (Publication No. AAT 3319833).
- Clavio, G. and Kian, T.M. (2010) 'Uses and gratifications of a retired female athlete's Twitter followers', *International Journal of Sport Communication*, Vol. 3, No. 4, pp.486–500.
- Cunningham, S., Cornwell, T.B. and Coote, L.V. (2009) 'Expressing identity and shaping image: the relationship between corporate mission and corporate sponsorship', *Journal of Sport Management*, Vol. 23, No. 1, pp.65–86.
- Dittmore, S.W., Stoldt, G.C. and Greenwell, T.C. (2008) 'Use of an organizational weblog in relationship building: the case of a Major League Baseball team', *International Journal of Sport Communication*, Vol. 1, No. 3, pp.384–397.
- Dix, S., Phau, I. and Pougnet, S. (2010) 'Bend it like Beckham: the influence of sports celebrities on young adult consumers', *Young Consumers: Insight and Ideas for Responsible Marketers*, Vol. 11, No. 1, pp.36–46.
- Fisher, E. (2009) 'Flight of fancy?', *Sports Business Journal*, available at <http://www.sportsbusinessjournal.com/article/62656> (accessed on 1 June 2009).
- Greenwell, T.C., Lee, J. and Naeger, D. (2007) 'Using the critical incident technique to understand critical aspects of the minor league spectator's experience', *Sport Marketing Quarterly*, Vol. 16, No. 4, pp.190–198.
- Hambrick, M.E., Simmons, J.M., Greenhalgh, G.P. and Greenwell, T.C. (2010) 'Understanding professional athletes' use of Twitter: a content analysis of athlete tweets', *International Journal of Sport Communication*, Vol. 3, No. 4, pp.454–471.
- Hausman, J.A. and Leonard, G.K. (1997) 'Superstars in the National Basketball Association: economic value and policy', *Journal of Labor Economics*, Vol. 15, No. 4, pp.586–624.
- Humidity Labs (2011) 'The Twitaholic Top 100 Twitaholics based on followers', *Twitaholic*, available at <http://twitaholic.com/> (accessed on 8 January 2011).
- Jones, M.J. and Schumann, D.W. (2000) 'The strategic use of celebrity endorsers in *Sports Illustrated*: an historic perspective', *Sport Marketing Quarterly*, Vol. 9, No. 2, pp.65–76.
- Kassarjian, H.H. (1977) 'Content analysis in consumer research', *The Journal of Consumer Research*, Vol. 4, No. 1, pp.8–18.
- Kassing, J.W. and Sanderson, J. (2010) 'Fan-athlete interaction and Twitter tweeting through the Giro: a case study', *International Journal of Sport Communication*, Vol. 3, No. 1, pp.113–128.
- Kelley, S.W. and Turley, L.W. (2004) 'The effect of content on perceived affect of Super Bowl commercials', *Journal of Sport Management*, Vol. 18, No. 4, pp.398–420.
- Lawson, R.A., Sheehan, K. and Stephenson, E.F. (2008) 'Vend it like Beckham: David Beckham's effect on MLS ticket sales', *International Journal of Sport Finance*, Vol. 3, No. 4, pp.189–195.
- Lear, K.E., Runyan, R.C. and Whitaker, W.H. (2008) 'Sports celebrity endorsements in retail products advertising', *International Journal of Retail & Distribution Management*, Vol. 37, No. 4, pp.308–321.

- Lefton, T. (2010) 'Endorsements remain buyers' market', *Sports Business Journal*, available at <http://www.sportsbusinessjournal.com/article/66990> (accessed on 20 September 2010).
- Leonhardt, D. (2011) 'A better way to measure Twitter influence', *The New York Times*, available at <http://6thfloor.blogs.nytimes.com/2011/03/24/a-better-way-to-measure-twitter-influence/> (accessed on 30 April 2011).
- McKelvey, S. and Masteralexis, J.T. (2011) 'This tweet sponsored by: the application of the new FTC guides to the social media world of professional athletes', *Virginia Journal of Sports and the Law*, in press.
- Mercedes-Benz (2011) 'Mercedes-Benz tweet race', available at <http://www.mbtweetrace.com/mercedes/map> (accessed on 30 April 2011).
- O'Reilly, N.J. and Braedley, L.A. (2008) 'Celebrity athletes and athletic clothing design: branding female tennis players', *International Journal of Sport Management and Marketing*, Vol. 3, Nos. 1–2, pp.119–139.
- Ohanian, R. (1990) 'Construction and validation of a scale to measure celebrity endorsers' perceived expertise, trustworthiness and attractiveness', *Journal of Advertising*, Vol. 19, No. 3, pp.39–52.
- Patton, M.Q. (2002) *Qualitative Research and Evaluation Methods*, 3rd ed., Sage, Thousand Oaks, CA.
- Pegoraro, A. (2010) 'Look who's talking – athletes on Twitter: a case study', *International Journal of Sport Communication*, Vol. 3, No. 4, pp.501–514.
- Ruihley, B.J., Runyan, R.C. and Lear, K.E. (2010) 'The use of sport celebrities in advertising: a replication and extension', *Sport Marketing Quarterly*, Vol. 19, No. 3, pp.132–142.
- Schoenstedt, L.J. and Reau, J. (2010) 'Running a social-media newsroom: a case study of the Cincinnati Flying Pig Marathon', *International Journal of Sport Communication*, Vol. 3, No. 3, pp.337–386.
- Seo, W.J. and Green, B.C. (2008) 'Development of the motivation scale for sport online consumption', *Journal of Sport Management*, Vol. 22, No. 1, pp.82–109.
- Shuart, J. (2007) 'Heroes in sport: assessing celebrity endorser effectiveness', *International Journal of Sports Marketing and Sponsorship*, Vol. 8, No. 2, pp.126–140.
- Stone, G., Joseph, M. and Jones, M. (2003) 'An exploratory study on the use of sports celebrities in advertising: a content analysis', *Sport Marketing Quarterly*, Vol. 12, No. 2, pp.94–102.
- Twitter (2011) 'Twitter 101: a special guide', Twitter.com, available at <http://business.twitter.com/twitter101> (accessed on 9 January 2011).
- Williams, S. (2011) 'Sponsors – Serena Williams', *SerenaWilliams.com*, available at <http://www.serenawilliams.com/sponsors.php> (accessed on 30 April 2011).