

Gender Effect Through Media: A Twitter Analysis of the NFL's Carolina Panthers

by

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Abstract

The National Football League (NFL) is the most popular sport in the United States (Norman, 2018). Of the NFL's passionate fan base, 46 percent are women (Bazilian, 2014). This research analyzes Twitter content from the NFL's Carolina Panthers, examining the discrepancy between Panthers communication strategies with male and female audiences from January and February, 2018. Word concordance tests found that male pronouns occurred more than female pronouns across the months of January and February. There was an increase found in female pronoun usage in February. Linguistic inquiry and word count modeling transformed Twitter content to variables; "clout" was a unique significant predictor of "drive" in January. In February both "clout" and "tone" are significant predictors. Sentiment analysis for February found the level of negative sentiment in communication decreased, while the level of positive sentiment increased. These tests demonstrate that there is an increase in tone and positive sentiment in February, while there is a decrease in negative sentiment in the same month. February data also indicated there was an increase in the use of female pronouns. NFL teams can use this information to assess gender communication. That may include the increased use of female pronouns as well as increase the use of language that contains positive tone in its communication.

Introduction

The National Football League (NFL) is the most popular sport in the U.S. (Norman, 2018). This research examines the type of communication the NFL has with women. Women comprise 46 percent of the NFL's fanbase, so if there is no direct communication to them, it displays a lack of a public relations effort designed to engage female stakeholders (Bazilian, 2014). To give context of the distribution of teams with the most female fans, it is important

to note that the Pittsburgh Steelers has the largest female fanbase in its market, comprised of 34% women (NFL, 2012). In contrast, the Tampa Bay Buccaneers has one of the smallest female fan bases in its market, which is under 10% (Cueto, 2015). The Panthers' social media feed will be analyzed to see how often it appears to be communicating to female fans, as well as how the team communicates with them through social media.

Before delving into the Panthers communication, it is important to consider the corporate culture of the NFL. Narratives present in the corporate culture are important because they may play a role in the NFL's hesitation to communicate overtly with women, because the league may fear it will perpetuate the previous sexist dialogue (Freeman, 2017). Over the years, there have been many controversies, including sexism, sexual assault, domestic abuse, and intent to murder a romantic partner, on the part of players (Fowler, 2015). Although the NFL cannot control individual players' actions, its response to these actions communicates a specific narrative to women. ESPN's Keith Olbermann phrased it well, when referencing the recent domestic violence scandal involving Ray Rice, a player from the Baltimore Ravens, saying that the "images of Rice's assault were 'symbolically knocking out every woman football fan in this country,'" which is not a welcoming message (Harwell, 2014). Also, the NFL is unintentionally communicating to women how it feels about the respect they deserve by how it portrays cheerleaders. There have been many lawsuits initiated by NFL cheerleaders who have been paid poorly and "harshly examined through physical 'jiggle tests'" and expected to sit in strangers' laps at public appearances (Harwell, 2014). These actions on the part of the league speak volumes to women who hear these stories and connect with these women. To remedy the communication, the NFL will also have to confront these deeper problems because of the inadvertent message they convey.

The main obstacle is the lack of communication with women and the conflicting narratives surrounding the NFL that may give women the impression that men want it to stay the boys' club (Freeman, 2017). Without first addressing this inequity in how the NFL is treating women, it will be hard to create a convincingly friendly and welcoming narrative toward perspective female fans. By addressing the problems and making a concerted effort to appeal to female fans, the NFL will have a higher likelihood of retaining its already present fans.

Throughout the paper, the muted group theory will be examined as it applies to female fans and how the NFL targets them. Sexist and tone-deaf themes are expected to emerge, due to the league-wide trends in communication that the NFL has had trouble with in general. These themes include addressing issues of domestic violence scandals, disrespectful comments undermining women, and only referencing women in communication if it involves cheerleading or selling NFL merchandise. Due to this past, it is important that the NFL and Panthers start to communicate with women as a viable fanbase, so that the fanbase can be sustained and continue to grow.

Depending on what is found, an objective that may need to be set in place for the Panthers to make a concerted effort to target its female fanbase directly if it is failing to do so currently. In unison with that, the NFL in general may need to make it a goal, to make it evident in any team's communication that female fans are a recognized target. The Panthers team is making it a goal to use its communication via social media in a dynamic and engaging manner, and are also currently at the top of the NFL as far as social media fan engagement and growth (Perez, 2016). This makes the Panthers an increasingly important and fascinating team to look at, as it has been one of the most successful in the league at using this medium.

To provide context for the Panthers most recent communication regarding women, it is important to note a communication crisis that occurred in 2017. Cam Newton, the quarterback for the Panthers, made a comment to a female reporter, Jourdan Rodrigue, that came across as sexist. There were conflicting narratives of whether Newton apologized or not because the reporter said that it was worse once she talked to him after the incident. However, the director of communication, Steven Drummond, claimed that Newton had “expressed regret” for his choice of words (Newton, 2017). This situation shows a few things: Newton was supposed to adjust once this became a scandal and Drummond tried to state that Newton had apologized when the affected journalist did not receive it as such. Though the statement that Drummond made it seem like the discussion was more amicable than it was, he did point out that they have a goal as a department to make the media coverage environment comfortable for everyone covering the team, which indicates the team’s standard opinion on potential female media crew members (Newton, 2017). The Panthers tried to take a stance on the issue, however, it is tricky ground to tread considering the face of the team is the one who misspoke. Newton stated in his apology that he used some “‘extremely degrading and disrespectful’ choice of words” when speaking with Rodrigue, but failed to refer to her directly by name in the video. The NFL weighed in on the situation, stating that Newton’s word were “just plain wrong and disrespectful to the exceptional female reporters and all journalists. . . [and that] they do not reflect the thinking of the league,” entirely denouncing what Cam Newton chose to say (Newton, 2017). This statement made it clear to female stakeholders that a player’s opinions do not equate to the opinion of the league.

The Panthers Twitter page was selected for the sake of this research because it is a text-based platform, so it is representative of the type of textual communication that the team is creating day-to-day to reach out to fans. It is important to analyze the Twitter platform specifically because women comprise the majority of Twitter users (Moltz, 2014). Also, platforms such as Facebook and Instagram are more picture and video-based. These platforms would not be ideal for this research, since there has not been much development in the pursuit of quantifying the sentiment of pictures and videos. Social media communication is the focus of the research because a great deal of industries, such as the NFL, are moving toward this medium to try to build relationships with fans. It is important to address whether the NFL communicates with women or not, so that they may be able to use this relationship-building platform to communicate with women as well, if those relationships are not already formed and maintained.

The communication theory that best applies here is the muted group theory, when evaluating how the Panthers communicate with women. There are various ways to communicate to target demographics, but some of them are not effective manners of forming relationships, or they suggest a deficit in the effort to communicate to targets, such as female audiences. The muted group theory suggests that public vocabulary is focused on male-specific experiences and opinions, which in the context of the Panthers' communication with women suggests that to ensure females are not a muted group, the team must reference female experiences and perceptions (Gregg & Walker, n.d.). For example, when the team posts communication oriented toward the fan experience, it needs to include not only male names and pictures, but female as well. In the case of using pronouns, as is analyzed later in this paper, by increasing the use of female pronouns in its communication, the Panthers can

also increase the reference of female experiences and perceptions and avoid treating its female audience as a muted group. Ultimately, the goal of muted group theory is “to change the “man-made” linguistic system,” so that women’s experiences and opinions are no longer underrepresented in conversation (Gregg & Walker, n.d.). The communication by the Panthers will be analyzed by examining the aspect of muted group theory that suggests that there is an underrepresentation of women in media.

The Panthers is a fascinating team to analyze because a great deal of its communication is available online, which is also the case for the response to its communication. This provides a unique opportunity, since not all communication history can be traced for most franchises. As noted before, the team is also the leader in fan engagement and following among other teams in the league, so that adds more interest in analyzing its communication instead of others. For this research, the only data used were the tweets that the Panthers posted. The purpose of this research is to see if the NFL, specifically the Panthers for the sake of this research, is maintaining their relationship with women, which is a quickly growing subset of their fanbase.

RQ 1: What are the similarities and differences in how the Panthers communicate among men and women?

RQ 1: Do similarities and differences in communication change over time?

RQ 3: Is there a gender affect in the “muting” of Panthers communication?

Methodology

To analyze the Panthers communication, the team’s personal Twitter page was selected and scraped using a Google Chrome add-on called “Data Miner”. Scraping is the

process of extracting specific data from a web page. Scraping is done using code formulas called “recipes” on Data Miner, that are designed to gather information selectively from a page or document (“What is Web Scraping,” n.d.). The recipe used for this research gathered data including the number of likes, retweets, comments, and other information, such as the tweet itself, date it was posted, and who posted it.

The next step was selecting the tweets to be analyzed. The data scraped tweets ranging from December of 2017 to March of 2018, however, the months of December and March were incomplete, due to having dates that fell in the middle of the months and not the beginning and end. Given this fact, the months chosen were the ones where there was data available for every day, so that comparisons could be made between the content of complete months of communication. The months selected were January and February, because these were the only two complete months out of the data collected.

The next tool that was implemented was KH Coder, which runs word concordance tests that searches for a word in context. First, data was downloaded into an excel sheet after being split up into the months of January and February. Once the data was in an excel sheet, it was opened in KH Coder to run a word concordance test. The words, “he,” “she,” and “they,” were analyzed, to see the presence of pronoun specific communication. The program also searched for similar words that describe these pronouns in context. For example, when “he” was run through the program, it also searched for queries such as “his” and “him”. Results are characterized as “hits” within the system, which indicates how many instances of that word appears within the data set.

Once the data was downloaded as an excel sheet, it was converted into a Google Sheet and processed using a Google Sheet add-on called “Aylien,” which is a text analysis

tool that analyzes the sentiment of communication. The goal of this test was to quantify the polarity of the emotion in one direction or another, ranging from subjective to objective, as well as the degree to which the communication was negative, positive, or neutral (Thakkar, 2017). Polarity is described as the power of emotion that the communication possesses (Thakkar, 2017). An algorithm scores communication based on the types of sentiment that words in the selected communication portray and then outputs a numerical representation of this polarity ("About Semantria's," 2013). These scores are based on the algorithm that measures the polarity of the communication, and where the specific communication may land on that continuum ("About Semantria's," 2013). Data from this was inputted in the Google Sheet automatically by the Aylie program next to the tweet that it analyzed. The data was then processed through excel formulas on Google Sheets to find the average of each of the dimensions the program analyzed.

The next software used to analyze the tweets was Linguistic Inquiry and Word Count (LIWC). Data is run through LIWC by selecting an excel sheet, and then processes into a .txt file, which can then be converted into an excel sheet again. The data displays other variables, but the variables selected to analyze for the purposes of this research were analytic, clout, authentic, tone, and drive. Once in the excel sheet, these dimensions were then averaged using excel formulas, so that trends could be identified for the two months of communication. Scores in LIWC are on a 0 to 100 scale, so the lower or higher the score for each measure, the more meaningful the score is regarding the variable it is measuring.

The first measure is analytic, which when there are higher numbers indicates that the communication is more formal, logical, and hierarchical in thinking (Elwert, 2018). In contrast, lower numbers reflect more casual communication that is closer to narrative

thinking and is personal (Elwert, 2018). This will demonstrate the type of thinking that the tweets usually display. The next measure, clout, will determine the level of expertise the team is trying to speak from and with what certainty they have (Elwert, 2018). When clout is present, higher numbers represent the communicator is speaking with confidence and high expertise, lower numbers suggest a more humble style of communication (Elwert, 2018). Authentic scores that are higher indicate disclosing more and being more honest and personal in communication, whereas lower numbers indicate distance in communication (Elwert, 2018). Tone will also be important in the analysis, as high tone scores indicate positive, upbeat communication, and lower numbers suggests presence of anxiety and hostility; however, scores ranging in the middle suggest ambivalence or lack of feeling (Elwert, 2018). Lastly, drive is an all-encompassing indicator, which is influenced by the presence of motivations such as affiliation, achievement, power, reward focus, and risk focus (Elwert, 2018).

The final program that the data was run through was JASP, which is a statistical analysis software. JASP was used to conduct a linear regression and to create a correlation matrix of the data collected using the LIWC software. The data collected from LIWC was in an excel sheet for January and February, which were then imported into JASP, and run separately, so that the linear regression and correlation matrix tests could be compared. A test of correlation finds the relationships between pairs of variables. To run this test, the big five factors in the data from LIWC: analytic, clout, authentic, tone, and drive, were selected to find relationships. The test analyzed the data and compiled a table, which includes a p-value and Pearson's R for each data point. A linear regression identifies significant predictors of a dependent variable. In this case, analytic, clout, authentic, and tone, were independent

variables ran against drive as the dependent variable. The data for this test included a score for each data point and a significance score of that measurement.

Results

There were 788 tweets scraped from the Panthers Twitter page, which tweeted from December 23, 2017 to March 13, 2018. When examining the 788 tweets gathered using Data Miner in KH Coder's word concordance software, the male pronoun "he" and other variations of male pronouns showed up 15% of the time and "she" and its variations showed up .07% of the time. As far as non-gender specific pronouns mentions goes, about 3% of tweets mentioned the word "they". Out of the tweets, around 18% of tweets contain pronoun references and the rest do not, leaving 82% of tweets not even referencing pronouns at all. In January, 16% of tweets contained male pronouns, .03% female pronouns, and 4% gender neutral pronoun references. Conversely, in February, 21% of tweets had male pronouns, 2% female pronouns, and 4% gender neutral pronouns. In January, 80% of communication did not contain pronouns, however, in February, only 73% of communication did not.

The calculation made using the Aylien software determined that the 788 tweets gathered from the Panthers were subjective 57% of the time, and objective 43%. These ratings had a confidence score of 96%. The results from Aylien indicated that 15% of the time the communication was positive, 8% of the time is was negative, and the remaining 77% of communication was neutral. The confidence score these results had was 79%. When analyzing the months separately, January was subjective 53% of the time, and objective the remaining 47%. These ratings had a 78% confidence score. January was positive 15%, negative 9%, and neutral 76% of the time. The confidence score for these ratings was 95% (Table 1).

Table 1. Sentiment analysis of January.

January	Objective	Subjective	Negative	Neutral	Positive
Mean	47%	53%	9%	76%	15%

In February, communication was subjective 54%, and objective 46% of the time. The confidence in these ratings was 96%. February was positive 21%, negative 3%, and neutral 76% of the time. The confidence score was 81% (Table 2).

Table 2. Sentiment analysis of February.

February	Objective	Subjective	Negative	Neutral	Positive
Mean	46%	54%	3%	76%	21%

The LIWC data in January found communication was analytic 85% of the time, indicated clout 78%, was authentic 19%, had a tone of 47%, and a drive of 13% (Table 3).

Table 3. LIWC Quantitative data for January.

January	Analytic	Clout	Authentic	Tone	Drive
Mean	85%	78%	19%	47%	13%

In February, communication was analytic 84%, had clout 80%, was authentic 15%, had tone of 57%, and had a drive of 5% (Table 4).

Table 4. LIWC Quantitative data for February.

February	Analytic	Clout	Authentic	Tone	Drive
Mean	84%	80%	15%	57%	5%

The data for the correlation matrix ran through JASP on the January data found that there was a significant negative correlation between authentic and clout ($R = -.0241$, $p < .001$). In February, there was still a negative correlation, but it was not statistically significant. In January, there was also a highly positive correlation between drive and clout ($R = .527$, $P < .001$). The same trend of a positive correlation between drive and clout is seen in February ($R = .504$, $P < .001$). In the linear regression test using JASP, the tests ran on both January and February were significant. In January, clout is a significant predictor of drive. In February, both clout and tone are significant predictors of drive.

Discussion

In pursuing the question of the differences in how the Panthers communicate among men and women, various tests were run on the data. The month of January was originally expected to have more pronounced communication to women because the Super Bowl occurred in that month, so the hypothesis was that the Panthers would increase its targeted communication to female fans to optimize the viewer engagement of the game. In comparison, February was hypothesized to have less overall gender references in its communication. It is important to note that the number of tweets varied between these months, with January containing 370 tweets and February containing 131 tweets. The Super Bowl fell on February 4 of 2018, so the reasoning was that it would be in the Panthers best interest to tweet a great deal leading up to the super bowl in the month of January (Haislop, 2018). In KH Coder, by doing a search in the word concordance software for pronouns associated with each gender, specifically “he” for men and “she” for women, men are more readily discussed in the Twitter content that the Panthers produce than women are. This indicates that there is a discrepancy in the use of female-specific references, considering

female specific pronouns showed up in less than 1% of the Panthers tweets, whereas male-specific references occurred in 15% of the overall communication. Although, it is important to note that the reference of men includes males in the organization, ranging from players to coaches. This percentage may be due to the team being heavily dominated by men, but there are still a great deal of tweets that do not mention female pronouns in comparison to male pronouns. Additionally, non-gender specific pronouns such as “they” come up more frequently than female ones. This suggests that most of the Panthers’ gender-specific communication is exclusively talking about men, but another portion of their communication is gender ambiguous, or does not use pronouns at all. Given the ratio of gender specific communication leaning heavily toward referencing males, it begs the question of if this communication is supposed to appeal to both men and women, or just men. When examining January and February, the references of pronouns in the varying months of tweets also add some insight into the motivation behind their usage. Between the two months, male pronouns still dominate the percentage of pronoun specific communication, with an increase in male pronoun usage seen in February, which is the month that the Super Bowl occurred. Though there were still a great deal less female specific pronoun references, the percentage of female pronouns also increased in February. It was assumed that there would be a great deal of specific target audience communication in preparation for the Super Bowl in January, since it was early in the month, however, February had more specific pronoun references in comparison. This also contradicted the prediction that February would have less specific gender references, as it ended up having more female pronoun usage out of the two months. This indicates that there may have been a shift in the content of communication that sparked or allowed more pronoun usage.

There were not many extreme differences in the communication found in the averages of LIWC data, however, the percentage of drive lowered 10% from January to February. This may indicate that the drive lowered, due to less of an emphasis on the motive of affiliation moving out of the Super Bowl month. That would be reasonable, as the communication leading up to the Super Bowl probably contained more of a focus on affiliation, as it may have discussed things such as preparation for the game and how the team would perform. Also, the level of tone varied as well by increasing 10%, meaning the communication become more upbeat and positive in the month of February. When ranges of tone fall in the middle, it suggests a level of ambivalence or disconnect. The increase showed a trend of the team moving away from that level of ambivalence as it segued into the month that it communicated more with women. The team had low presence of authentic communication, which suggests that the communication is more guarded and distant. To appeal to women more, the Panthers may need to increase the level of authenticity it conveys through its social media. In contrast, the clout present in both months is fairly high, indicating that the communication is confident and coming from a high level of expertise. Though this is good for portraying a strong team personality, partnered with being distant, it may not be the best message to have underlying communication with fans.

After discovering that there were differences in how men and women were communicated to, the data was then analyzed from the perspective of how these differences varied over time. The sentiment analysis data suggested that the Panthers communication is subjective usually, however, it may still be objective in cases that posts are communicating facts about things such as scores during the season. The confidence score for the tests was relatively high, which suggests that these scores are fairly accurate at measuring the

subjectivity and objectivity of the communication. Tools such as Aylien give insight into how often communication implemented comes across a certain way, which can be used to analyze whether there should be a shift in how the Panthers communicate, as stronger sentiment is usually indicative of more intense emotions (Thakkar, 2017). The sentiment of the communication changed by having an increase in positive sentiment and a decrease in negative sentiment in the month of February. This suggests that in the month that included more female pronouns, there is also a shift in the sentiment of communication.

The last thing to examine was how the muted group theory applied to the Panthers' communication and whether women were in fact a muted group. The muted group theory suggests that there is a negative impact on communication when organizations fail to represent female experiences and opinions. It appears that men are not a muted group in the Panthers communication, as the pronouns directed toward them are more prevalent, and are constantly present in the data. The data found through word concordance tests suggests that women may be a muted group in Panthers communication, as the presence of pronouns referring to them is small. The correlation matrix ran in JASP found that drive was a positive, significant predictor of tone in the month of February, where there is more reference to female pronouns, but not in January, where there are fewer female pronouns. This suggests that in the months that female pronouns were present, drive was a significant predictor of tone. Additionally, it indicates that the drive, which is most nearly the power of affiliation, is correlated to tone. The regression also found a similar correlation that in the month of January, clout was a unique significant predictor of drive, however, in the month of February, both clout and tone were indicators of drive.

Recommendations

A suggestion for the Panthers is that it increase the level of tone in its communication, which would involve having a more positive, upbeat style of communication, as was present in the month that the team was communicating more to women. Also, it is recommended that the Panthers start using more female pronouns, as that is the most direct way the team could display its communication of female experiences. By applying these changes and combating elements that make women a muted group, there can be progress toward unmuting women and including them in the conversation surrounding the enjoyment of football.

Future research

A section of the results that must be noted is the great percentage of communication that appeared to not take advantage of targeting a specific gender through pronoun usage. Given the direct nature of pronoun use and its apparent communication implications, it is difficult to narrow down what the tweets lacking pronouns discuss and whether those discussions imply gender, but do not make specific pronoun references. The question of what the 82% of non-pronoun communication discusses exceeds the scope of this research, but would be a natural continuation in the examination of how the Panthers is communicating to its target audiences. If the communication simply does not imply gender, it may be helpful for analyzing how to make this gendered communication gap less striking by using this ambiguous communication to target gender.

Limitations

This was an exploratory study, which examined a snapshot in time of the communication by the Panthers. A longitudinal study may be able to expose more trends, for instance, if the data were able to span multiple years, or at least a full season. The tools here

took an in-depth look at the implications that the current communication has. If pursued further, this research could be used to inform future communication decisions on behalf of the Panthers, so that it may better target its female audience.

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