HIGH SCHOOL EDITION
Journal of Student Research
Volume 12 Issue 3 (2023)

Analyzing Leadership Messaging Styles and Team Performance in the NFL: Insights from Post-First Loss Press Conferences

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ABSTRACT

This study investigates the impact of leadership messaging styles used by NFL head coaches on team performance, specifically focusing on messaging following a team's initial loss of the season. The research builds upon previous findings that indicate certain leadership styles, such as Deliberativeness messaging, influence performance throughout the season. However, this study examines the messaging patterns specifically after the first loss. Qualitative data, consisting of press conference transcripts from NFL head coaches after their teams' initial loss between 2020 and 2022, were collected and analyzed using DICTION, a computer-aided text analysis program. This software generated numerical scores indicating the prevalence of different messaging styles: Activity, Optimism, Certainty, Realism, and Commonality. These scores facilitated quantitative tests and correlation analyses. The results reveal that most messaging styles exhibit weak associations with team performance. Nonetheless, the analysis identifies distinct tendencies among coaches, with a propensity for high levels of Optimism, low levels of Certainty and Realism, and moderately high levels of Commonality. These findings suggest that coaches may adopt these messaging patterns due to their effectiveness. Understanding these tendencies can assist amateur coaches in enhancing team performance following the first loss of the season. By leveraging the messaging tendencies identified in this study, coaches can potentially improve team outcomes.

Introduction

NFL fans from all over the United States watch their head coaches' post-game conferences to see what their coach thought of the game. These press conferences have been found to reflect head coaches' leadership styles (Goosby Smith, 2009). Different coaches will use different coaching styles, which will have varying effects. However, it has also been speculated that the content of coach press conferences has little to do with team performance or success in actual games because the majority of coaches often use vague language seen as "fluff" when answering questions (Riddle, 2012). There is a lack of clarity about which messages among the "fluff" carry significance. Some messages will likely correspond better to performance than others do. Evaluation of the current body of research on messaging in sports coach press conferences begs the question: Which types of messaging in NFL head coach post-game press conferences after the first loss of the season relate best to team performance?

A study that analyzes the content of head coach press conferences and measures its relationship with team performance would be beneficial in providing clarity about the significance of coaches' messages by identifying what kinds of coaching messages affect team performance the most. Amateur coaches would be able to use this study's results to identify possible messages from NFL head coaches to implement into their coaching styles after a loss. Fans would also be able to use this study's results in interpreting coach press conferences. This topic is especially relevant because NFL regular-season viewership has reached 17.1 million people, the highest it's been since 2015, and more

fans watching games will create a greater interest in coach press conferences (Shea, 2022). In this study, leadership style will be examined through head coach NFL post-game press conferences after the first loss of a team's season.

Literature Review

To examine which coaching messages correlate with performance, it must first be established that coaches do in fact affect their team's performance and that players are not winning or losing because of talent alone. In the MLB, managers focused on winning have been found to affect team performance (Jacobs & Singell, 1993). Christopher Berry and Anthony Fowler, two professors from the University of Chicago, expand on previous research, inquiring about more than just baseball by applying their method for estimating coaching effects called the Randomization Inference for Leader Effects to the MLB, NBA, NHL, NFL, college football, and college basketball. Their research found coaches in general to explain about 20-30% of the variation in a team's success across all sports. Berry and Fowler also found college football coaches to have more of an effect on performance than NFL coaches (2019). This may be due to a decrease in skill variance in the NFL compared to college as every player is a professional. General similarity in skill could make it harder for coaches to affect performance. Coaching methods are indeed reflected in press conferences as Gordon Bloom, kinesiology and physical education professor at McGill University, and colleagues conducted a study interviewing 21 professional coaches and concluded that coaches do set pre- and post-game routines that reflect their unique styles of coaching (1997). Furthermore, in an article published in *Team Performance Management,* Jaye Goosby Smith, writes that press conferences "will yield insight into the coaches' skills as sensemakers, sensegivers, and agents of the intentional change process" (2009, para. 3) Building on this conclusion, Robert G. Lord, professor of leadership at Durham University, and colleagues conducted a content analysis of public NFL head coach press conferences to determine how personality affects coaching as outlined in their article *Leadership in the National Football League: Do Leaders Make a Difference?*; The study found that the trait of deliberativeness specifically had the greatest impact on team performance (2016). This finding about deliberativeness is consistent with the idea that press conferences will reflect coaches' role in the "intentional change process" from the *Team Performance Management* article as both terms are referring to the same trait.

There are a variety of different styles and methods that coaches use with their players. Servant Leadership is a form of coaching that involves coaches seeing themselves as working for the players to improve their play instead of players working for the coaches to win for the team. Servant Leadership emphasizes trust, inclusion, and humility. Servant leadership is especially useful with younger players as it has been shown to have a positive correlation with performance and a negative correlation with burnout in college athletes (Cho & Kim, 2014; Umanets & Song, 2023). It is likely that servant leadership would similarly have the best results with younger NFL players. Jon Stokes, former Senior Fellow in Management Practice at the University of Oxford, compares the charismatic leadership style to the inspirational leadership style. The article states that "Charismatic leadership promotes an "as if" mentality, inspiring leadership promotes a "what if" mentality. Charismatic leadership creates a divided state of mind, inspiring leadership encourages a more integrated state of mind. Actual leaders use both styles of leadership to varying degrees." (2021, para. 1). The style of leadership that coaches use will be different depending on the situation. Coaches do not use one style. They create a combination of many styles. Another important factor in coaching is how a coach treats the media. When it comes to the press, coaches may consider "the managing of fame, the challenges and ambitions of the players, the fans and the general public" (Ilharco, 2017, para. 1). Different coaches will choose what messages they want the public to hear.

Coaching methods will vary depending on the situation. This study will focus on the situation of the first loss of the season. Diana Dumitriu, writing for the *Romanian Journal of Communication and Public Relations*, studied how coaching messages in post-match conferences are affected by context (whether the team won or lost). The study found that coaches frequently addressed questions by showing praise to the other team, referred to as sports courtesy speech: "a high level of similarity between coaches' discourses, the sport courtesy speech acts work both as a way of establishing a consensual frame of interaction between the participants, as well as a way of building and maintaining a positive face for the speaker and his team" (2011, para. 1). The work of Smith and Bloom et al. establish that press conferences are a place where coaches display their differences in how they coach. However, there are some general

commonalities in messaging that coaches share such as praising the other team and trying to stay positive to the public after a loss. In *"Bouncing Back" From a Loss: Entrepreneurial Orientation, Emotions, and Failure Narratives*, Marcus Wolfe, Associate Professor of Entrepreneurship at the University of Oklahoma, and Dean Shepard, Professor of Entrepreneurship at the Mendoza College of Business, Notre Dame University, performed a content analysis of college football coaches' messages in press conferences after the first loss of the season to search for how different messages correlate with success in the very next game after the first loss of the season. These researchers recognized the value of specifying the situation because it is likely that different game situations will call for different messaging styles. They specifically studied positive emotional content, negative emotional content, and entrepreneurial activity in the form of opportunity recognition, development, and exploitation. The researchers found entrepreneurial content after the first loss of a season to have a U-shaped relationship with subsequent performance. Extremely high or extremely low levels of entrepreneurial content were optimal for performance. Negative emotional content was found to have the same relationship with performance. The opposite was true for positive emotional content; moderate levels were ideal and extreme levels caused decreased performance levels (2015). This research provides support to the idea that there is no "best" method of coaching because there are a variety of different coaching styles that can be effective. The extremely low levels of entrepreneurial content on the U-Shaped curve may be due to coaches who put little effort into answering conference questions. These coaches may be more entrepreneurial outside of press conferences. Josh Compton, professor of speech at Dartmouth College, studied college coaches' open letters to fans during losing seasons, which is a method of image repair. Compton found "three primary strategies attempted during losing seasons: evading responsibility, reducing offensiveness, and corrective action" (2014, para. 1). Compton's research identifies ideas losing coaches might internally believe, but choose not to discuss in front of the press. The messages of evading responsibility and reducing offensiveness are quite different from maintaining a positive face as seen in press conferences in Dumitriu's research. Coaches' words would likely be different in conferences because of the inability to restrict their messages to a specific audience. Compton suggests that wider audiences do influence coaches' messages: "open letters distributed via electronic media channels widen the audience of such letters, but also, complicate issues of timing and of targeted audience analysis" (2014, para. 1). Paul Turman, Vice President for Research & Economic Development for the South Dakota Board of Regents, further studies coaches' non-public interactions with their athletes. Coaches were found to frequently use "regret messages: individual performance, accountability, social significance, collective failure, regret reduction, and future regret" (2007, para. 1). In private, coaches are willing to be more negative for accountability messaging. Criticism is still used to achieve a positive goal (to help the athlete), but negative content in messages did occur frequently after a loss when coach-athlete interactions were private. This article builds on Compton's research and provides more evidence of a disparity between the content of coaches' public messages and internal beliefs.

Previous work in the field has shown that NFL coaches do affect performance. Different coaching styles do affect players differently, and style differences can be analyzed in post-game press conferences. According to Marcus Wolfe, the ability to recover from a loss is an important coaching trait: "One of the key factors involved in both entrepreneurial sporting teams and entrepreneurial firms is the ability to cope with failure" (2015, para. 26). Wolfe also finds that a "relative paucity of research remains on precisely how narrative elements differ in providing an understanding of past events as well as providing justification for future activities" (2015, para. 3). Wolfe partially fills this gap in studying college football coaches' messages after a loss. However, there is still a lack of research on how head coaches' messages after the first loss of the season affect team performance in the NFL specifically. This study attempts to address this gap by applying models created in previous research to NFL coaching press conference messages' relationship with recovery from loss. In this paper, the DICTION 7.2 text-analysis software will be used to examine NFL head-coach press conferences after teams' first loss of the season from the years 2020-2022.

Methods

To examine the relationship coaches' press conferences have with performance, a content analysis method was performed. The content of press conferences does reflect different coaches' leadership styles (Goosby Smith, 2009; Bloom et al., 1997). Other methods of gaining data from press conferences would include analyzing other visual aspects of press conferences. One option was a Kinesics study, which would analyze the body language and movement of coaches while answering questions. Such a study would provide a unique perspective regarding the relationships between coaches' body language and team performance. On the other hand, for the purpose of this study, the content of coaches' speeches is most relevant because the specific gap being studied lies in the messages that coaches create. Furthermore, fans can listen to press conference recordings without actually seeing the coaches, so the verbal content is more relevant. Another option would be an evaluation study that would measure the effectiveness of a specific type of leadership style. Such a study would allow for an in-depth analysis of multiple aspects of one leadership style. However, this method was ruled out because it would limit the study to only one type of messaging style. As previously discussed, many different styles of leadership can be effective (Stokes 2021). The purpose of this study is not to examine the advantages and drawbacks of one style of leadership, but to study several different leadership messaging styles that NFL coaches use. Thus, a content analysis of these conferences was determined to be the most logical method to address the question of inquiry as it directly studies coaches' messaging. Content analysis allows for the examination of multiple variables, which is compatible with the variability in coaching styles. This method is also supported by the previous research of Lord et al and Wolfe, who determined coaches' speech to be the optimal method for studying leadership style. This study utilized a computer-aided text analysis program. Such programs measure the occurrence of words from pre-defined dictionaries in a body of text. Automated content analysis is as reliable as manual content analysis so long as the computer program being used is accurate (Anastasiei, I.-A., & Georgescu, M. R., 2020). Some research has also found computerized methods to be more accurate than human-scored methods. This is because some form of coding error is unavoidable due to human error and observer bias. Computer-aided analysis programs can minimize this (Rosenburg et al., 1990).

This study utilized the DICTION 7.2 software to analyze coaching content. DICTION is an established text-analysis tool that has been employed in many academic research studies. It is commonly used in strategic management research and leadership studies of political figures and CEOs (Scheuerlein & Chládková, 2022; Short & Palmer, 2008; Kabanoff et al., 2001). The software's strengths lie in its ability to provide precision in statistical analysis without sacrificing context and qualitative data (Stiehler-Mulder, 2019). DICTION has also been applied to sports text-analysis research (Mendenhall, 2015). The methods used in this study were inspired by Wolfe's and Shepard's research, as his study also analyzed post-game conferences from American football coaches after teams' first loss of the season. However, these researchers used the Linguistics Inquiry and Word Count (LIWC) software to perform their content analysis. The DICTION software was chosen over LIWC because of its ability to analyze not only word choice but also verbal tone. DICTION compares texts to a body of 20,000 texts as opposed to only counting words from a specific dictionary (Stiehler-Mulder, 2019). DICTION searches documents for words in the dictionaries for each of DICTION's 35 sub-features. These 35 sub-features are then used to generate a numerical score for each of DICTION's five Master Variables: Activity, Optimism, Certainty, Realism, and Commonality (Digitext Inc., 2013).

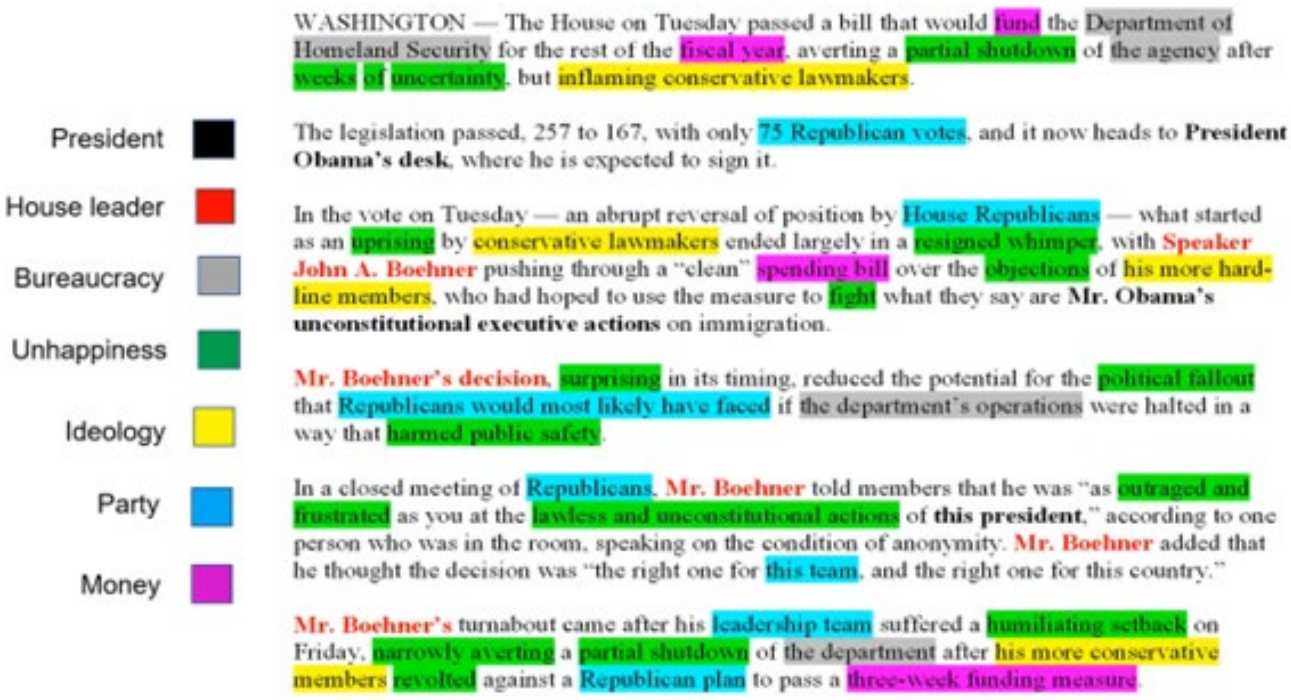

Figure 1. DICTION Analysis of Political Text

Note. In this example, DICTION scanning for several political themes. In this study, the five Master Variables are the only themes that will be examined. From *Tutorials,* Digitext Inc, https://dictionsoftware.com/video-tutorials/. Copyright 2023 by Digitext, Inc.

Figure 1 displays an example of how DICTION would process a piece of text. Analyzing a document for these five Variables produces a rich understanding of a text because all five features have zero statistical correlation, so DICTION can look at a body of text in five completely different ways (Craig and Amernic, 2021).

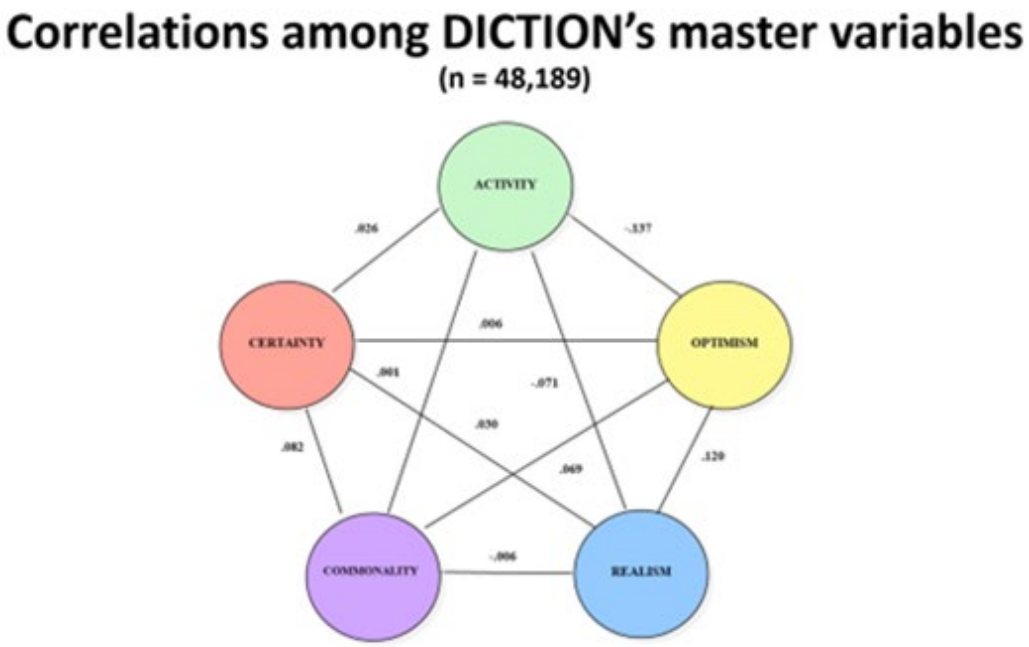

Figure 2. Correlation among DICTION's Master Variables
Note. From *Tutorials,* Digitext Inc, https://dictionsoftware.com/video-tutorials/. Copyright 2023 by Digitext, Inc.

Figure 2 displays each Master Variable's correlation strength. The software also provides pre-determined score ranges that the average speaker's content falls into for each Variable. This allows comparison of coaches' messaging to that of the average speaker.

In this study, linear correlation tests studying DICTION's Master Variable scores' ability to predict team performance will be assessed using the following three measures of performance. Regular Season Win Rate (number of regular season wins plus 0.5 times the number of ties all divided by the number of games played in the regular season) is a general measure of success in a season. Post-season success on a scale of 0-5 (0 = no playoff berth, 1 = lost in wildcard playoff game, 2 = lost divisional playoff game, 3 = lost conference championship game, 4 = lost in Super Bowl, and 5 = won Super Bowl) is a more specified measure of success. Subsequent performance (calculated by subtracting the points scored on a team from points scored by a team in the game after the team's first loss) provides a measure of a team's direct recovery after a loss. This measure of subsequent performance was chosen over a simple win-loss variable to provide a more in-depth measure of how a team performed that could be used in a correlational analysis.

Post-game press conference transcripts were retrieved from NFL teams' official team websites and official media center websites and copied into Microsoft Word text files to be imported into DICTION. All text that consisted of reporters' questions was deleted prior to analysis so that only the coaches' speech would be analyzed. This study used DICTION's Standard Segmented Analysis, which was chosen over DICTION's other analysis settings because it divides passages into 500-word units to account for differences in the length of press conferences. DICTION was then used to generate a score for each Master Variable. Each score is calculated by adding sub-features that positively correlate with each Master Variable and subtracting sub-features that negatively correlate with each Master Variable (see Appendix for more information about how DICTION calculates its score for each Variable and what tones fall into each Variable). For a general overview, the Variables represent Activity (Language featuring movement, change, the implementation of ideas), Optimism (Positive language endorsing some person, group, concept, or event), Certainty (Language indicating resoluteness), Realism (Language describing tangible, immediate, recognizable matters), and Commonality (Language highlighting the agreed-upon values of a group). DICTION also compares these scores

to the average score for DICTION's corpus of texts in each Master Variable. However, DICTION's corpus is not primarily composed of sports texts, so this measure will compare the sample's scores to the average speaker and not the average football coach.

This method is accompanied by some drawbacks. The main source of uncertainty lies in the limited volume of content available for analysis. Not all NFL teams have accessible public post-game transcripts for every game across the years studied, which limited the sample size. It must also be established that these transcripts are being studied after the fact, and coaches' messaging content cannot be manipulated as an independent variable. Some themes may correlate with performance, but no causal relationships can be determined. They can only be speculated upon. For example, if a certain Master Variable such as optimism correlates strongly with performance, this may be due to coaches with more talented teams simply being more optimistic because they know the team is talented as opposed to the coaches' optimism causing the team to improve. However, Lord et al. justify this with the fact that the NFL does limit teams from having significantly better rosters than others due to constraints put on every team. Each team has a salary cap that limits how much money a team can spend on signing players and a limited number of players allowed on a roster (53) and practice squad (16). Better performing teams are also disadvantaged in the following year through rookie draft picks being in order from worst performing to highest performing teams (2016). There also must exist some form of coding error as DICTION was not specifically designed for NFL content analysis research. So, some technical terminology or expressions specific to an NFL context may be misinterpreted by the software, leading to inaccuracies in Master Variable scores.

It was hypothesized that NFL messaging relationships will generally have minimal correlation with performance. Berry and Fowler found coaches across all sports to explain only 20% to 30% of the variance in performance, and NFL coaches were less significant compared to college coaches. Though Variables are hypothesized to show trends that differ from the average speaker, the correlation between these Variable scores and performance were hypothesized to be minimal. The Activity Variable involves similar messaging to "deliberativeness" as studied by Lord et al. and the "sense-giving intentional change process" as studied by Goosby Smith (Lord et al., 2016; Goosby Smith, 2009). So, this Variable was hypothesized to have the strongest positive correlation with performance compared to the other four Variables. Optimism was also hypothesized to show high scores for most coaches due to the level of praise (see Appendix for how praise factors into DICTION score) coaches tend to show other teams as described by Dumitriu.

Results

The DICTION 7.2 software was used to analyze 14 teams' first press conferences after the first loss of the season over the past three years yielding a total sample size of 42 press conferences scored. All other teams were excluded due to a lack of public access to press conference transcripts.

Table 1. Mean and Standard Deviation of each Master Variable Score

Master Variable	Mean	Standard Deviation
Activity	50.3	6.3
Optimism	51.0	2.5
Certainty	48.7	4.0
Realism	49.1	3.9
Commonality	49.4	1.1

Presented in Table 1 are the means and standard deviations of scores for each Variable. Activity and Optimism show the highest average scores. Activity has the most deviation from the mean, and Commonality has the least deviation from the mean.

The scores for each Variable were plotted against the teams' Regular Season Win Rate for that year in a linear correlation graph. The scores for each Variable were also plotted against the teams' Subsequent Performance.

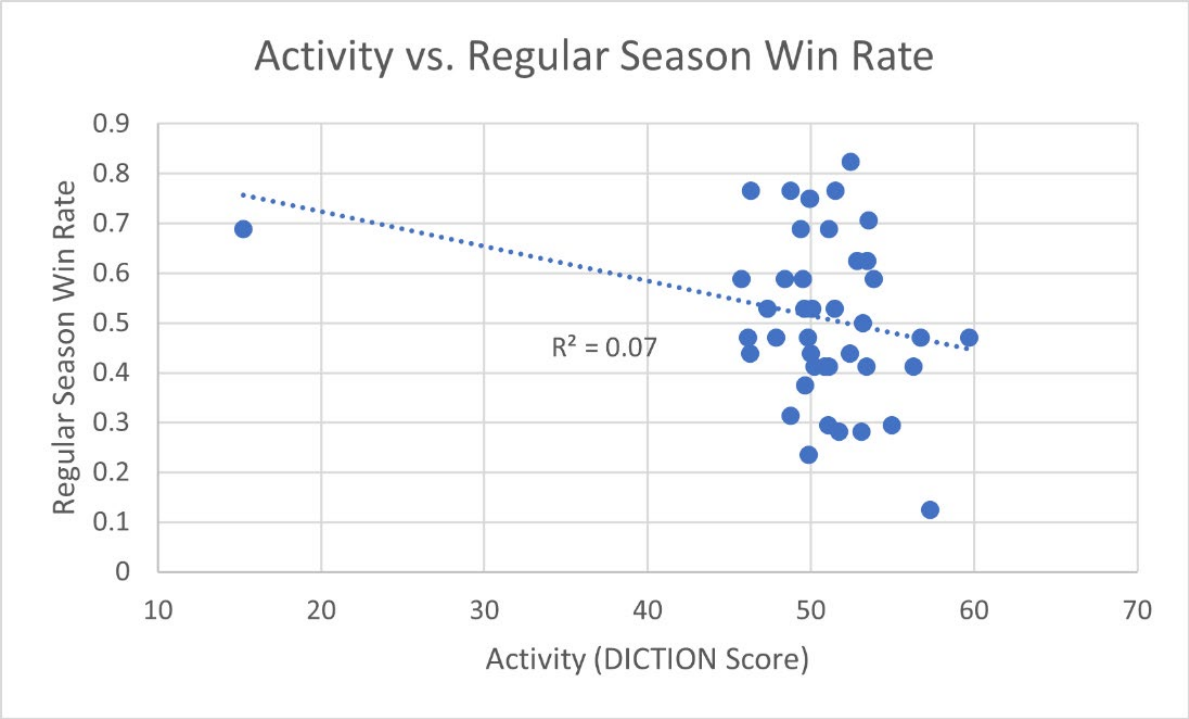

Figure 3. Activity (DICTION Score) vs. Regular Season Win Rate

Figure 3 displays Activity's relationship to Regular Season Win Rate. The graph shows a low R^2 value, showing a weak negative correlation between Activity and Regular Season Win Rate. According to the data, seven percent of Regular Season Win Rate can be attributed to Activity. This is not in support of the hypothesis, which predicted a weak positive correlation. However, it is relevant to note a major outlier. Bruce Arians' (former head coach of the Tampa Bay Buccaneers) press conference in 2020 showed an abnormally low Activity score of 15.24. The Buccaneers went on to win the Super Bowl that season. More data could reveal the results of other conferences with extreme scores, leading to new insights into scores that highly differ from the majority. This data point could also have skewed the R^2 values in correlation tests as an outlier.

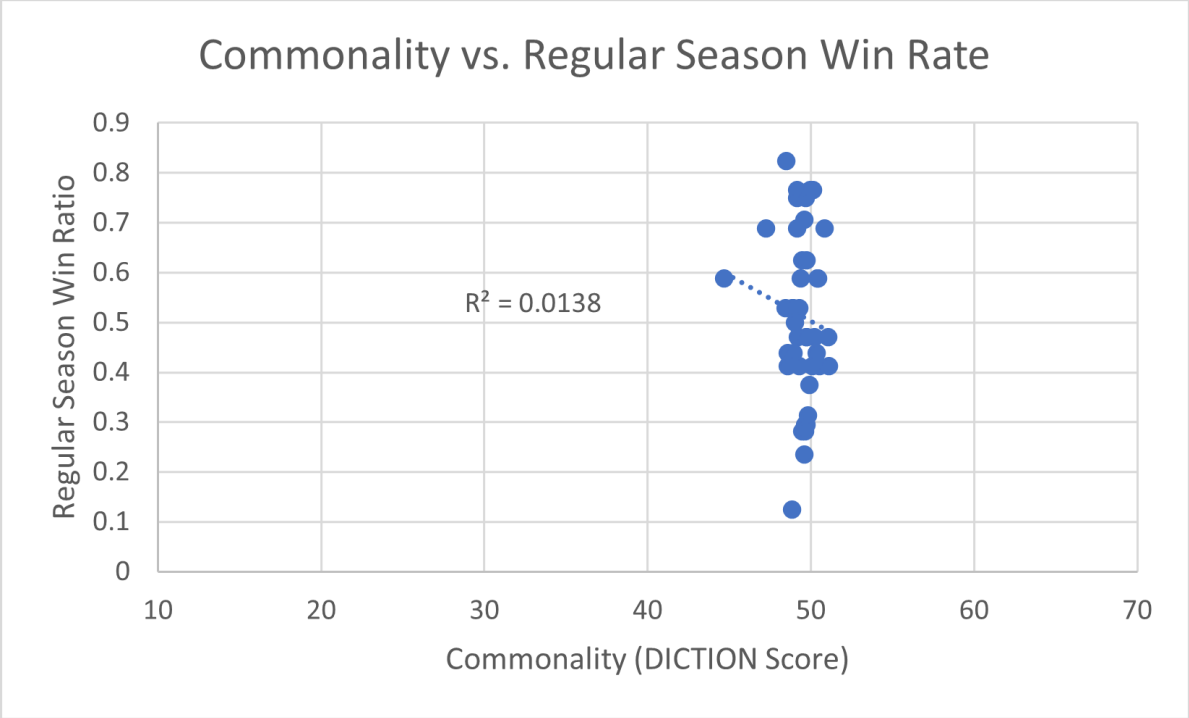

Figure 4. Commonality (DICTION Score) vs. Regular Season Win Rate

As seen in Figure 4, Commonality shows an extremely low R^2 value. It is logical that the relationship between Commonality and Regular Season Win Rate would be weak because there is little variance in Commonality as shown in Table 1. If press conferences with more Commonality variance are studied, new insights into Commonality's relationship with performance may be revealed.

The other Variables showed similarly low correlations with Regular Season Win Rate. When graphed against Subsequent Performance, correlation generally decreased. These relationships are summarized in Table 2.

Table 2. R^2 Values of Relationship between Variables and Performance (Regular Season Win Rate and Subsequent Team Performance

Master Variable	**Regular Season Win Rate Correlation (R^2 value)**	**Subsequent Performance Correlation (R^2 value)**
Activity	0.07	0.01
Optimism	0.02	0.00
Certainty	0.06	0.03
Realism	0.00	0.01
Commonality	0.01	0.00

Variables generally showed weak correlations with both measures of performance. Subsequent Performance generally showed weaker correlation than did Regular Season Win Rate, suggesting that any relationship that does exist requires time for changes in performance to develop. Certainty and Activity were shown to have the strongest correlations with Regular Season Win Rate, and Realism, Commonality, and Optimism were shown to have no correlation with either measure of performance.

DICTION provides predetermined score ranges that the average speaker's tone falls into based on its extensive corpus of texts. The average speaker's Activity, Optimism, Certainty, Realism, and Commonality scores range from 46.74 to 55.48, 46.37 to 52.25, 46.9 to 51.96, 46.1 to 52.62, and 46.86 to 52.28 respectively. These Variables do not have the same ranges because the average speaker tends to use some tones more than others. For example, a Certainty score of 51.1 would be considered a high Certainty value, but an Optimism score of 51.1 would be considered a moderate Optimism value. For analysis of scores in relation to the average speaker, scores were disaggregated into four groups: "Low", "Moderately Low", "Moderately High", and "High". A "Low" score would fall into the bottom quartile of the average speaker's range for a variable. The next quartile would create the "Moderately Low" range and so on. Scores that fall below the average speaker's range were placed in the "Low" group, and scores that exceed the average speaker's range were placed in the "High" group. It is important to understand that the ranges for these four groups are based on the average speaker's tendencies and not the average NFL coach's tendencies among those studied. For example, A "Low" score is low compared to the average speaker, not low compared to the average NFL head coach. Table 3 displays the distribution of coaches scoring in each range and the distribution of winning seasons (seasons with more wins than losses) and losing seasons (seasons with more losses than wins) within these ranges for each Variable**.**

Table 3. Frequency Distribution of DICTION Scores across Average Speaker Score Range Quartiles and Winning and Losing Seasons

DICTION Score Range	**Winning Season**	**Losing Season**	**TOTAL**
Low Activity	60% (n = 6)	40% (n = 4)	24% (n = 10)
Moderately Low Activity	50% (n = 7)	50% (n = 7)	33% (n = 14)
Moderately High Activity	44% (n = 4)	56% (n = 5)	21% (n = 9)
High Activity	33% (n = 3)	67% (n = 6)	21% (n=9)
Low Optimism	50% (n = 2)	50% (n =2)	10% (n = 4)
Moderately Low Optimism	80% (n = 4)	20% (n = 1)	12% (n = 5)
Moderately High Optimism	45% (n = 5)	55% (n = 6)	26% (n = 11)
High Optimism	41% (n = 9)	59% (n = 13)	52% (n = 22)
Low Certainty	42% (n = 8)	58% (n = 11)	45% (n = 19)
Moderately Low Certainty	20% (n = 1)	80% (n = 4)	12% (n = 5)
Moderately High Certainty	40% (n = 2)	60% (n = 3)	12% (n = 5)
High Certainty	69% (n = 9)	31% (n = 4)	31% (n = 13)
Low Realism	39% (n = 7)	61% (n = 11)	43% (n = 18)
Moderately Low Realism	33% (n = 2)	67% (n = 4)	14% (n = 6)
Moderately High Realism	75% (n = 6)	25% (n = 2)	19% (n = 8)
High Realism	50% (n = 5)	50% (n = 5)	24% (n = 10)
Low Commonality	100% (n = 2)	0% (n = 0)	5% (n = 2)
Moderately Low Commonality	56% (n = 10)	44% (n = 8)	43% (n = 18)
Moderately High Commonality	40% (n = 8)	60% (n = 12)	48% (n = 20)
High Commonality	0% (n = 0)	100% (n = 2)	5% (n = 2)
TOTAL	48% (n = 20)	52% (n = 22)	100% (n = 42)

As seen in Table 3, Low Activity, Moderately Low Optimism, High Certainty, Moderately High Realism, and Low Commonality have the highest percentages of group members with winning seasons for each Variable. A representative sample of speakers would theoretically have a 25% distribution in each group. Activity messaging

among coaches appears to be the most similar to that of the average speaker. Compared to the average speaker, coaches seem to use more High Optimism, Low or High Certainty, Low Realism, and Moderately High or Low Commonality. To determine the extent to which NFL head coach's messages differ from the average speaker, a chi-squared goodness of fit test was performed. Table 4 displays how well coaches' scores fit a sample of the average speakers' scores for each Variable.

Table 4. Chi-squared Goodness of Fit Test to Determine Difference in Distribution of Coach Master Variable Scores and Average Speaker Score Range

Master Variable	Chi^2 Value	P value
Activity	1.6	0.65508
Optimism	19.5	0.00021
Certainty	13.2	0.00415
Realism	7.9	0.04802
Commonality	25.619	0.00001

Activity has no significant score range difference from the expected score range for a sample of average speakers as indicated by a *p value* over 0.05. Realism was found to have a significant score range difference with a *p value* of 0.04802, though this could be substantiated with more data. Optimism, Certainty, and Commonality all have significant score range differences from the expected score range for a sample of average speakers with each *p value* lower than 0.00415. This data shows that coaches do differ from the average speaker in most Master Variables and that coaches do have different levels of messaging they tend to fall into.

Discussion

The data generally suggests an overall weak relationship between the content of NFL head coaches' messaging and team performance, as hypothesized. This suggests that most coaches' comments after a loss have little significance and that "fluff" is prevalent. However, this may be partially due to the low variance Master Variable scores. This was not accounted for when the method was designed. While most variables showed weak relationships, Activity and Certainty had the strongest correlations relative to the other Variables. The Activity Variable had a negative correlation with performance, which contradicts the original hypothesis. This is not in support of the findings of Lord et al. and Goosby Smith as the Activity Variable includes "Deliberativeness" as described by Lord et al. and the "intentional change process" as described by Goosby Smith (Lord et al., 2016; Goosby Smith, 2009). These studies analyzed messaging over the whole season. It is possible that Activity has a direct relationship with success in other situations, but not after the first loss of the season. This supports the idea that game situation is important to the type of messaging that is optimal. The second finding is that Certainty was found to have the second strongest correlation and a direct relationship with performance. This was unexpected, as none of the aforementioned studies discuss messaging themes related to Certainty. Overall, most Master Variables showed weak correlations. The third finding is that coaches seem to show tendencies for certain levels of messaging. The chi-squared goodness of fit test showed that coaches differed significantly from the average speaker in all Master Variables except for Activity. High Optimism, Low Certainty, Low Realism, and Moderately High Commonality were the most prevalent tendencies. NFL coaches are "experts" in their field. The NFL is the highest level of competition in the sport of football, and NFL head coaches are generally regarded as the most qualified and skilled coaches. So, if they do have tendencies that differ from the average speaker, these tendencies are likely to be the most optimal messaging styles. When compared to other NFL head coaches, there is minimal correlation. However, results might differ if this sample of NFL coaches were to be compared to a sample of amateur coaches, which would likely be more varied. The third finding is regarding Commonality. The

Commonality scores were clustered around the mean and showed little correlation, partly due to unusually low variance. DICTION's several unique features which allowed for these findings justify the use of an automated content analysis to study messaging after the first loss of the season.

Limitations

The generalizability of these studies is subject to certain limitations. Lord et al., discussed how messaging has a stronger effect on performance in situations of high competitiveness, such as a rivalry with the opposing team (2016). Conditions of rivalry vary from week to week. This factor was not controlled in the experiment, so certain press conferences' relationships to performance could be biased to be stronger or weaker. The study analyzes press conferences after teams' first loss of the season from the years 2020-2022. While fewer conferences are available, the years 2020-2022 have had a large increase in social media usage due to the COVID-19 pandemic, making these conferences the most relevant. However, certain press conferences were not publicly accessible during this period. Ideally, every press conference would be studied. In addition, an aspect of coaches' content is dependent on team press conference reporters. Coaches only answer the questions they are asked and there is no way to control what questions team reporters ask. Ideally, all coaches would be asked the same questions at each press conference. However, many types of questions are generally asked throughout all teams in the league such as what the coach believes to be the major causes of a loss. So, there is some form of standardization among conference questions, making question variability a smaller factor.

Implications

This study suggests that coach press conferences provide little information about a team's response to a loss. If the results of this study were to be taken as fact, they would call for fans to partly refrain from watching press conferences with the goal of learning about how their team will respond to a loss. However, press conferences may still be useful for displaying a coach's mannerisms and general tone of speaking. For fans to gain a more significant understanding of a coach's mindset on moving on from a loss, other methods of interaction may be necessary. The study also suggests that coaches have certain tendencies in messaging that differ from the average speaker's tone in Optimism, Certainty, Realism, and Commonality. So, amateur coaches may benefit from mimicking these messaging differences after a loss. DICTION would also be established as a useful software in sports-text analysis research.

Areas of Future Research

While previous studies have analyzed specific methods of messaging that improve performance over the whole season. The field may shift to studying how different messages affect performance in different situations, other than after a loss. For example, a method similar to the one used in this study could be used to analyze messaging after the first win of the season to see how themes differ in the new situation. Commonality was found to have extremely low variance. This phenomenon could be more clearly understood if examined more closely. Future research could study if this trend is similar in other sports. Future research could also compare messaging in NFL coaches to messaging in amateur coaches.

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