

Josef Scheuerlein ¹
Helena Chládková
Klaus Bauer

TRANSFORMATIONAL LEADERSHIP QUALITIES DURING THE FINANCIAL CRISIS - A CONTENT ANALYSIS OF CEOs LETTER TO SHAREHOLDERS

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Abstract: *The present study investigates whether the leadership qualities of CEOs from major U.S. companies changes in times of the Financial Crisis. The focus lays on important transformational leadership qualities and their corresponding linguistic markers. These have been previously identified to be either, a crucial part of effective leadership, or leadership in general. Leadership attributes are measured through the quantitative content analysis software Linguistic Inquiry and Word Count 2015 (LIWC2015). The written language use of 104 CEOs within 594 letters to shareholders is investigated on the change of a) Visionary-, b) Present Achievement- and c) Emotionality scores (as measured through positive and negative emotion words). The results reveal significant changes of Present Achievement and Emotionality scores. The findings show that the Financial Crisis provoked substantial changes in linguistic indicators of transformational leadership qualities. Further, in times of crisis, some favorable leadership attributes seem to become highlighted, whereas other important aspects dramatically decrease. Lastly, the limitations and future directions are discussed.*

Keywords: *Transformational Leadership, Quantitative Content Analysis, LIWC2015, Financial Crisis, Language Changes*

1. Introduction

1.1. Transformational Leadership

Years of observation and study have link transformational leadership theories with leadership and effectiveness. (e.g. Lowe et al., 1996; Avolio et al., 1999; Bass and Bass, 2009; Avolio and Bass, 1995). The word "*transformare*" originates from Latin and means altering or changing (something) in its shape. Burns (1978) was the first to introduce the term into the social sciences by analysing

the biographies of political leaders. Later Bass (1985a) extended his work by further explaining the underlying psychological mechanisms. He puts the transformational leader in a favourable light; they are described as agents of social and organizational change (Bass, 1985a). Further, the relationship between the leader and the follower is not solely based on a simple "give and take" exchange (Bass and Bass, 2009). Rather, the leader tries to intellectually stimulate his employees to be more creative and innovative. He considers both, the needs of

¹ Corresponding author: Josef Scheuerlein
Email: josef.scheuerlein@gmail.com

the individual and the entire group, pays attention to the group's developmental demands, supports it and coaches the employees. Through this, the leader is able to shift the values and ideas of the followers from their own self-interests and individual goals to long-term, higher ordered goals (Bass and Bass, 2009). Moreover, the leader tries to intrinsically motivate the followers through being a role model, fostering the personal development of each employee and communicating the way to the set goals. In return, the followers develop trust, loyalty and respect. Here, Conger and Kanungo (1988) agree; leaders are indeed perceived as being transformational if they serve as role models, challenge their employees and motivate them to accomplish extraordinary performances. However, adding that they also try to develop their strengths and abilities in order to promote independent and creative problem-solving skills (Conger and Kanungo, 1988). Bass (1990, p.154) stated that a great way to accomplish this is by providing a "*clear, appealing and inspirational vision*". Other researchers would describe this influence as intellectual stimulation, individualized consideration, motivational inspiration or charisma (e.g. Weber, 1947; cited in Weber, 2009).

1.1.1. Visions

However, the question remains: How does this "*clear, appealing and inspirational vision*" according to Bass (1990, p.154) look alike? Generally speaking, visions are goals that are forward-looking and meaningful. They give a road map to the future with an emotional appeal to its followers (Bryman, 1993). The modern media likes to portray these individuals and due to their charisma and their foresight they serve as role models for many. Here, up-to-date examples include Steve Jobs, Barack Obama, Elon Musk or John F. Kennedy, amongst others.

One characterization of a good vision is their need for achievements, thus showing the followers what is possible and can be done

(Avolio and Bass, 1995). Further, it should explain complex ideas in simple words and be a clear and credible statement. Additionally, it should contain an optimistic, positive outlook. By doing so they give an ideal image of prospective achievements (Avolio and Bass, 1995). Further, a good vision is able to connect beliefs about what can be accomplished and they set desirable, collective goals, which are attainable (Thoms and Greenberger, 1995). As a consequence, a good vision explains why it is desirable to go for in the first place and they set a clear time frame until it can be fulfilled. Avolio and Bass (1995) argue that a great way to motivate the followers to reach out for the vision is by promising extrinsic or intrinsic rewards. This could be, for example, through assuring that there will be a raise in salary, an award, positive feedback, praise or approval (Bass and Bass, 2009, p. 623).

Indeed, it was found that articulating a vision has a strong influence on leadership ($r = .57$) (Hoffman et al., 2011). For this reason, transformational leaders must be able to motivate and inspire their followers through a persuasive way of communication (Conger and Kanungo, 1988). The ability to talk excitingly aligns with the findings of Levine et al. (2010). The researchers revealed that the verbs most often used to define Bass's (1985b) transformational leaders are the ability to *communicate*, *influence*, *motivate*, and *inspire*. Thus, the capability to communicate effectively and influence people, not only within, but also outside the organization, is one of the key parts of a transformational leadership style. To sum up, visions can be a powerful source to motivate the followers, but they need to be communicated effectively. Inspiring visions have an optimistic and positive tone, but they also focus strongly on the collective, group goals (Avolio and Bass, 1995; Fiol et al., 1999; Seyranian and Bligh, 2007). Furthermore, they target towards achievements and these can be motivated through promising rewards (Bass and Bass, 2009, p. 623).

1.1.2. Focus on Achievements

Besides providing a good vision to the employees, a variety of studies emphasize that transformational leaders are having high performance expectations towards their employees (e.g. Avolio et al., 1999; Bass, 1990; Podsakoff, MacKenzie, Moorman and Fetter, 1990; Wang et al., 2011). The meta-analytic findings of Judge et al., (2002) have shown, that the motivation to achieve has a significant relationship with leadership and leadership effectiveness ($r = .23$). Individuals who focus on achievements motivate their employees to show great effort and work hard. They are encouraged to question the status quo and go beyond the minimum requirements of their job description. New ways of thinking are emphasized through considering the abilities of each follower. Furthermore, the transformational leader shows confidence that those abilities contribute to the overall work effectiveness (Judge et al., 2002).

Most importantly, through strongly focusing on achievements, they accomplish high levels of task performance (Podsakoff et al., 1990). This was confirmed by an extensive study, in which 3786 respondents were asked to describe their leaders based on multiple scales and leadership types (Avolio et al., 1999). Amongst others, the results showed that transformational leaders are perceived as being more effective, if they focus on achievements through recognizing and rewarding them. Additionally, raising awareness to relevant issues, emphasizing on the collective mission and talking optimistically are crucial factors (Avolio et al., 1999).

However, transformational leaders are not only having high expectations towards their followers, but also towards themselves and their own performances. Especially McClelland (1985) investigated this connection by looking at the influence of the human motives on the personality. Thus, motives, goals and the resulting behaviour can be explained by an individual's need for

achievement. Those individuals with high needs for achievements are actively searching for challenging situations and competitions, in which they can stand out of the crowd through excellence and their own accomplished efforts. Furthermore, they aim to master challenges better than others, which also manifests itself in their communication (McClelland, 1985). Indeed, a high focus on achievements and success manifests itself in the everyday language use. These individuals use more often words, such as *win*, *success*, *better* and *accomplish* than those with lower achievement needs (Tausczik and Pennebaker, 2010).

Clearly, the need for achievements is an important motive of transformational leaders. Individuals who have high achievement standards towards themselves and others gain satisfaction from successfully finishing ambitious tasks, reaching standards of excellence and developing better ways of doing things (Kirkpatrick and Locke, 1991). And especially top-executives, like the chief executive officer (CEO), perform an immense amount of work at an endless speed and thus they need to constantly work towards their improvements and success (Kirkpatrick and Locke, 1991). So not surprisingly, emphasizing strongly on things "getting done" by setting high standards, together with being detail-oriented and dedicated were all found to be personality characteristics of successful CEOs (Kaplan et al., 2012).

1.1.3. Positive and Negative Emotions

Moreover, researchers emphasize that emotions play a key role in the process of transformational leadership (Bono and Ilies, 2006). This seems logical, since emotions play a major role in all of our everyday lives; they have a large influence on the way we think, behave, and feel about others and ourselves. Evidence from clinical psychology has shown that negative emotions are experienced stronger than positive emotions (Baumeister et al., 2001). This is because they last longer and are more persistent and

therefore, their influence on the individual is more significant. Since emotions are crucial in the leadership process, we will have a closer look at the current state-of-the literature:

Firstly, transformational leaders transmit their current emotions and mood states onto their followers. This mechanism is called “emotional contagion” and describes the phenomenon that when leaders feel good, their followers are also likely to feel in a positive manner (Sy et al., 2005). In general, when individuals experience and express emotions, they send signals to others. Transformational leaders also communicate their goals, intentions and attitudes through their expressions of feelings. But, on the other side, they also transfer their negative mood states onto their followers (Sy et al., 2005). This can in return lead to a lower motivation and fewer group achievements. Interestingly, the researchers also found that leaders who are feeling good use more positive words such as *love*, *nice* and *sweet*. Whereas, leaders who experience negative emotions express more negative words, such as *hurt*, *ugly* and *nasty* (Sy et al., 2005).

Secondly, the general group affective tone, which is for example a positive group mood, has been tied to an increased sense of group effort and coordination (Sy et al., 2005), as well as an increased cooperation and fewer conflicts among group members (Barsade, 2002). In her broaden-and-build theory, Frederickson (2003) states that expressing positive emotions widen the association between thoughts and actions of individuals. Through that the employees get an increased sense of novelty and exploration of their ideas, which can increase the performance of the entire organization.

Thirdly, positive emotions influence motivation and effort. Those transformational leaders who are able to trigger emotional responses from their followers through a persuasive communication have a higher chance to accomplish changes in the work environment (Conger and Kanungo, 1998).

For example, CEOs who can build positive relationships with people at all levels of the company and inspire the followers can foster positive attitudes, which can lead to improved corporate performances (Nohria et al., 2003). Individuals who experience a positive affect have a stronger feeling that their efforts lead to performance and that this performance will result in rewards, compared to those individuals who are in a negative mood state (Erez and Isen, 2002). Lastly, researchers have found that individuals with positive moods set higher goals than those experiencing and expressing negative moods (Ilies and Judge, 2005).

1.2. Transformational Leadership during Crises

Now let’s have a closer look at how leaders behave during highly stressful situations because minor or major crises can have harmful and disruptive impacts on organizations. Therefore, the abilities of capable and highly skilled CEOs are crucial in order to ensure a safe future for the organization (Reilly, 1993). A large economic crisis, on the other side, is a more severe scenario. It accompanies greater levels of stress for companies, individuals and politicians. The economy rapidly and sharply transits into a recession and changes occur on a much larger scale. This can affect the national or even the global economy, as it could be seen during the Financial Crisis. According to Reilly (1993), acute crises have a great magnitude on organizations and therefore it is hard to give proper predictions. Since they are outside of a companies typical operation, they put extreme demands on the time and attention of the top management (Reilly, 1993).

However, a severe crisis does not only have a strong influence on the entire organization, but also on its employees. The accompanying uncertainties and struggles can cause high levels of stress. Therefore, various researchers agree that an acute crisis supports the emergency of a transformational leader

(Conger et al., 2000; Pillai, 1996). The reason for this is that the strong perceived stress results in feelings of anxiousness, helplessness and frustration. Formerly accepted solutions and preparations are no longer working. And in such times people want a leader who seems powerful and is able to provide a clear direction (Pillai, 1996). The followers will accept, even need the influence of a leader who can show high self-confidence and provide a solution to the current problems. Therefore, a good leader ought to convey meaning and understanding of the current situation, which can be accomplished by communicating that solutions are available to cope with the demands of the present situation (Shamir and Howell, 1999).

It has to be mentioned though, that not only an acute crisis brings out transformational leaders. They also arise in case the situation becomes chronic, so when radical social changes are occurring on a large scale or the values of an entire culture are questioned. During a prolonged crisis, a transformational leader needs to communicate that there will be a positive outcome of the crisis, but also define what this outcome will be. Here, Hoffman et al. (2011) state that this can be accomplished by conveying a positive, collective vision, with which the employees can identify themselves. Another possibility is to transform the perception of the potentially stressful situations into a positive challenge. This can be achieved by an affirmative, emotional communication and a strong focus on the present achievements. As a result the followers might feel more motivated which could lead to an enhanced overall performance (Lombardoan and, 1988).

1.3. The Use of Content Analysis within the Leadership Study

Since leaders, like everybody else, spend a vast amount of their time communicating, the analysis of their words is a logical consequence. Indeed, a variety of researchers

stated that the leadership relationship lays in the process of communication and that language plays a key role in the process of leadership (Conger, 1991; Conger and Kanungo, 1998; Gardner and Avolio, 1998; Shamir et al., 1994). For example, Fairhurst and Sarr (1996, p. xi) stated that, "*leadership is a game, one that many do not know they are playing*". The researchers also found that leaders spend between 70 and 90 % of their time on activities that involve communication.

Therefore, and not surprisingly, investigating the communication of leaders became a growing trend within the social science. This is because the analysis of language can give important clues about individual differences, character attributes and how they naturally reveal themselves (Cohn et al., 2004). A highly reliable and powerful scientific tool to investigate the language use of individuals is through the application of quantitative content analysis (Krippendorff, 2013, pp. 25-26). Here, the main idea is that everything an individual writes or speaks reflects his thoughts and feelings in the present moment and thus it can be scientifically analysed and put into understandable content. By definition "*content analysis is a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the context of their use*" (Krippendorff, 2013, p. 26). Further, quantitative content analysis can give important insights into the psychological and social worlds of leaders (Tausczik and Pennebaker, 2010) and the emotions of an individual during a variety of situations and settings can be pictured. Through this a continuous time line of psychological changes, even over a prolonged period, can be created (Cohn et al., 2004).

Indeed content analyses have been widely applied within the social sciences. Previous researcher, for instance, studied the IQ (Simonton, 2009), narcissistic tendencies (Chatterjee and Hambrick, 2007), the authoritarian personality (Simonton, 2003), creativity and genius (Simonton, 1984, 2011) of leaders and their corresponding linguistic

markers. Content analysis techniques have also been applied to a variety of different leaders, like American presidents, U.S. senators, Canadian Prime ministers, geniuses and celebrities and so forth (Simonton, 2003, 2009). McCann (2001) linguistically analyzed presidential data and proved that a charismatic leadership style is relevant during times of crises. O'Connor et al. (1995) were analyzing the biographies of former leaders and could show that dispositional variables, such as narcissism and the power motive can predict aggression. Interestingly, the study also revealed that together the linguistic markers of narcissism and the power motive could be used to differentiate between a socialized and a personalized charismatic leader. Other researchers focused on different aspect of the management process, like outstanding leadership (Bedell et al., 2006), or Mumford et al. (2007) reported different individual, group and organizational variables that could be able to detect violence in ideological leaders.

Nevertheless, even though content analysis made major contributions to the study of leadership, the current research examining the direct link between the language use of leaders and the Financial Crisis is quite rare. Especially research regarding the use of emotionality -, visionary - and present achievement words, are particularly sparse and there still seems to be quite a big knowledge gap. Here, one of the possible reasons might be that relevant data are just beginning to emerge. However, there are two studies worth mentioning:

The first study by Bligh and Hess (2007) was conducted on the use of positive and negative emotion words in times of economic crisis. In the study, the degree of optimism, pessimism, certainty, immediacy and activity of the former Federal Reserve CEO Alan Greenspan were studied. The researchers investigated his use of language during the economic recession of 2001, the following bull market and in times when the general U.S. economy showed clear signs of recovery. Two main patterns were identified, namely that during

economic good times, the CEO used more words related to certainty and activity. Whereas economic bad times diminished the use of certainty and activity words and increased the usage of pessimistic words, immediacy and jargon. Nevertheless, there are two major implications of the Bligh and Hess (2007) study. First of all, the researchers were only focusing on one individual, namely Alan Greenspan. Having only one-test subject could be problematic in making adequate and reliable assumptions, since there is no reference sample or reference corpus. Secondly, Bligh and Hess (2007) were only investigating a small subset of effective leadership and its corresponding linguistic markers (degree of optimism, pessimism, certainty, immediacy and activity).

The second study by Poole (2016) investigated the language change in letters to shareholders of two major banks (Bank of America and Citigroup) between the years 2008 and 2010. It could be shown that in economic bad times, effective CEOs would create more messages that contain a vision and a strategy for future success, while at the same time the managers distanced themselves from past failures. After the crises, so when the companies performed well again, non-effective CEOs tend to accept praise and attribute the company's success to their own actions. Here again there are two limitations. Even though the study did contain two reference corpus sets, they only consisted of 18 other companies (8 outside the banking industry and 10 within the banking industry) and only two banks were investigated, which can be considered quiet a small sample size. Secondly, the Poole (2016) study focused primarily on the banking industry.

Since the U.S. economy is quite broad, considering multiple branches could help gain a deeper understanding whether the language use and with it the transformational leadership qualities of CEOs changes. All of this brings us to the purpose of the present study.

1.4. Purpose of the Present Study

The research concerning leadership and content analysis in times of the Financial Crisis is quite sparse and relevant data are just beginning to emerge. One of the main goals of the present study is to expand the current state-of-the literature and close some of the existing knowledge gaps. By using highly appropriate frameworks, instruments and methodologies, we aim to improve some of the weaknesses identified in earlier researches. Additionally, with a larger sample size, considering various industry branches of the U.S., as well as including the time period before the crises, we aim to create a consecutive picture of the language use of leaders during the Financial Crisis. To our knowledge, this makes this study to one of the first that explores in detail the linguistic characteristics of a leader's communication during this time.

We raised the following research questions: Does the language use of chief executive officers (CEOs) change before, during and after the Financial Crisis? And if so, what can these linguistic changes tell us about their transformational leadership qualities? We argue that CEOs are directly affected by the stressful situations that are caused by the crises, which will further manifest itself in their language use.

Due to the innate complexity and richness of language, it is often unavoidable to focus on a finite number of variables, as well as leaders, that can be measured and analyzed. Therefore, in alliance with the previously summarized literature, we investigate the following three linguistic parameters: a) Visionary; b) Present Achievement and c) Emotionality (as measured through negative and positive emotion words). The word usage of 104 U.S. CEOs will be investigated within 594 published letters to shareholders during the years 2006 to 2011.

2. Methodology and Data

Equipment

All data were analyzed using the IBM SPSS Statistics Version 22. The written contents were analysed using Linguistic Inquiry and Word Count 2015 (LIWC 2015) (Pennebaker, Booth, Boyd, & Francis, 2015). All of the investigated companies were listed on the Standard and Poor's 500 index (S&P500) within the investigated time period (years 2006-2011). Further equipment included the letters to shareholders, which were extracted from the annual reports of the investigated companies.

Measurements - LIWC 2015

All written contents were analysed using the *Linguistic Inquiry and Word Count* or LIWC2015 (Pennebaker et al., 2015). The LIWC2015 program was used since it proves to be an effective and efficient tool to analyse the content of written words. Further, LIWC2015 is the most widely used quantitative content analysis program for psychological purposes all over the world. More importantly, the program has been extensively validated and provided substantial evidence that social and psychological processes can be explained through the use of language (Pennebaker et al., 2003). The program uses a word counting strategy by searching a given text for over 6400 words, word stems and selected emoticons. These words are then categorized into different sections based on the internal LIWC categories (Tausczik and Pennebaker, 2010). Over 2000 independent judges have evaluated these search words, which resulted in a total of 93 linguistic dimensions (Pennebaker and Jordan, 2015). Example categories include affective processes, social processes, personal concerns, cognitive processes and several pronoun categories. After going through each word, LIWC2015 shows the percentage in each category. These percentages were used for the statistical analyses.

Time Periods

Many economists consider the Financial Crisis to be the worst since the Great Depression of the 1930s (Eigner and Umlauf, 2015). According to the U.S. National Bureau of Economic Research (NBER) the crisis started in December 2007 and ended two years later in June 2009. The starting factor were high default rates in the subprime mortgage sector from U.S. house owners. Poor regulations and oversight of the Wall Street banks were considered to be the main reason and provoked calls for reforming the US financial sector (Poole, 2016). The present study investigates the period from 2006 to 2011. According to the course of the Financial Crisis, three time periods of 2 years each were formed and used for further analysis:

- 1) **t1** = the years 2006 and 2007 were defined as the time before,
- 2) **t2** = the years 2008 and 2009 were define as the time during,
- 3) **t3** = the years 2010 and 2011 were defined as the time after the Financial Crisis.

Standard and Poor's Index

All the companies used in the analysis were listed on the Standard and Poor's 500 index (S&P 500). The S&P 500 is a US index that combines the stocks of the largest 500 US companies based on their market capitalization. It is one of the most watched indices in the world and analysts widely regard it as the best representation of the US stock market. Also, it is generally seen as a forerunner for the entire US economy. Thus, in order to have a good portrayal of the U.S. economy, we exclusively selected the companies and subsequently the letters to shareholders from this index.

Analysed Data - Letters to Shareholders

The present study investigates written language use and therefore uses letters to shareholders as the corpuses for the content analyses (in the following text they will be referred to as just "letters"). Letters offer an

excellent opportunity to access the implicit and explicit information that CEOs express or want to express to the public. In the letters, the top-management team aim to elaborate on the last year, describe the company achievements and explain previous struggles (Geppert and Lawrence, 2008). Further, the top-management can express their personal opinion because the contents of the letter is neither regulated nor dictated by any other party (Geppert and Lawrence, 2008). Hence, there are no specific standards, regulations or requirements of which materials have to be included and /or excluded. This relative freedom in choosing which images and messages the top management wants to convey to the public, make the letters a highly interesting document for our analyses.

The CEO's letters were manually extracted between the 15th of April and the 2nd of June 2017. First of all, we downloaded the complete annual reports for each company and the consecutive years from either the official SP500 website, <http://www.annualreports.com>, <http://www.bloomberg.com>, or the individual homepages of the companies, usually under the section *Investor Relations*. Since we were only interested in the letters, we exclusively selected these within the annual reports. We copied and pasted the written parts only, put them into blank word files and named them according to the company's name and the year of investigation. Tables, pictures or graphs were excluded since LIWC2015 is unable to analyse them in a meaningful way (Pennebaker et al., 2015).

A letter had to fulfil the following criteria to be either included or excluded for further analysis:

- 1) The letter had to be written by the CEO. To check for this criterion, we searched for the personal signature at the bottom of each letter.
- 2) For the reason of reliability, we only selected those companies and CEOs from the S&P 500 from which we could at access 4 or more letters. This meant that the CEO had to be in

charge of the company for at least 4 consecutive years between the years 2006 and 2011.

- 3) The total word count had to be 100 or more words per letter. This is due to the fact, that according to the LIWC's official website (<http://www.Liwc.net>) texts with less than 50 words can cause problems with the internal reliability. Other researchers argue that the reliability is violated in texts with less than 70 words and suggest the usage of at least 100 words for an appropriate content analysis (Gottschalk et al., 1979).

Only those companies from the S&P 500 were selected, which matched the above-mentioned criteria. This left us with a total of 104 companies and 594 letters, which were used for further analyses. From the total 594 letters, 199 were written before (33.50%), 197 during (33.16%), and 198 after (33.34%) the Financial Crisis. Thus, the three time periods were almost equally distributed.

Having a closer look at the 3-digit SIC codes of the companies revealed that our sample represents over 12 different industry branches in the US including: the a.) Energy; b.) Health; c.) E-Commerce; d.) Financials; e.) Technology; f.) Industrials; g.) Consumer; h.) Telecommunication; i.) Conglomerate; j.) Automotive; k.) Materials; and the l.) Utilities sector.

Characteristics of CEOs

The demographic information was available for all CEOs in our sample. Out of the total 104 CEOs (Figure 1), 100 were male (96.15%) and 4 were female (3.85%). At this point we found it important to briefly mention the widely unequal gender distribution in our sample. These partial results might indicate, that still nowadays few women are in high executive positions of large US companies. The reason for this could be gender inequality or different linguistic and socialization styles of women and men in general (Oakley, 2000). However, these partial findings were not part of this thesis and were thus not further discussed.

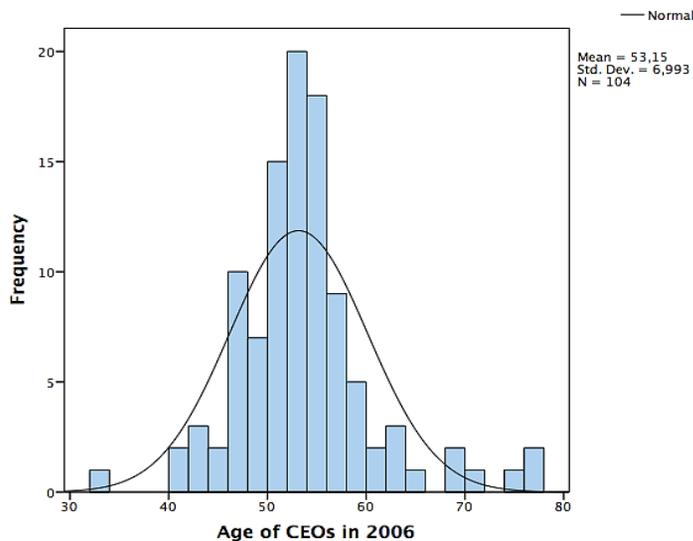


Figure 1. Histogram of Age of Chief Executive Officers in 2006 with Normal Distribution

In the year 2006, the average CEO's age was 53.15 years (SD=6.993). Regarding previous educational level our analysis revealed that 3

CEOs had no former college/university education (2.9%), 29 hold a Bachelors degree (27.9%), 43 a Master's degree or MBA

(Master of Business Administration) (41.3%), 19 have a higher education degree (18.3%) and for 10 there was no or unclear information available (9.6%). The higher education level included Ph.D., honorary doctorates (h.c.) and juristic doctorate (J.D.) degrees.

Marital statuses or country of origins of the CEOs were not included in the study. This is due to the fact, that we faced difficulties with a) either accessing them, b) they were simply not available, or c) they came from untrustworthy sources.

Linguistic Variables

The present study focuses on three independent linguistic variables, which were defined and analysed through their corresponding LIWC2015 categories:

Vision - To measure the visionary qualities of the CEOs, we relied on the definition of Avolio and Bass (1995), since it is one of the most widely quoted and referred definition within the social sciences (e.g. Awamleh and Gardner, 1999; Bass and Bass, 2009; Conger and Kanungo, 1998; Thoms and Greenberger, 1995). According to Avolio and Bass (1995), visions have a) *an optimistic, positive tone*; b) focus on *collective group goals*; c) target towards *achievements* and d) achievements can be accomplished through communicating *rewards*. Therefore, the present study uses the sum of the following four LIWC2015 categories to define the CEO's visionary qualities:

- 1) *Optimistic, positive tone* is measured through the LIWC2015 category positive emotions (PosEmo) (e.g. words such as **love, nice, sweet**, etc.)
- 2) *Collective, group goals* are measured through the LIWC2015 category first person plural (e.g. words such as **we, us, our** etc.)
- 3) *Achievements* are measured through the LIWC2015 category achieve (e.g. words such as **win, success, better** etc.)

- 4) *Rewards* are measured through the LIWC2015 category reward (e.g. words such as **take, prize, benefit** etc.)

Present Achievements (PA) -To measure the CEO's focus on present achievements, the present study uses the sum of the following two LIWC2015 categories:

- 1) *Present focus* is measured through the LIWC2015 category focus present (e.g. words such as **today, is, now** etc.)
- 2) *Achievements* are measured through the LIWC2015 category achieve (e.g. words such as **win, success, better** etc.)

Emotionality (EMO) - To investigate the CEO's expression of positive and negative emotions, the present study uses the following two LIWC2015 categories:

- 1) *Positive Emotions* are measured through the LIWC2015 category positive emotions (PosEmo) (e.g. words such as **love, nice, sweet**, etc.)
- 2) *Negative Emotions* are measured through the LIWC2015 category negative emotions (NegEmo) (e.g. words such as **hurt, ugly, nasty** etc.)

To jointly investigate both emotions, the present study uses an Emotionality Scale (as suggested by e.g. Bligh and Hess (2007); Davis et al. (2012); Tausczik and Pennebaker, 2010; Pennebaker et al., 2015). The Emotionality Scale consists of the a) positive emotions scores divided by the sum of a) positive and b) negative emotions scores:

$$Emo = \frac{PosEmo}{PosEmo + NegEmo}$$

All variables were transformed and computed for each company and time period t1, t2, t3 (before, during, after) and used for further analyses.

3. Results

3.1. Vision

Data are mean \pm standard deviation unless otherwise stated. A one-way repeated measures analysis of variance (ANOVA) was conducted to determine whether there was a statistically significant difference in the usage of vision words before (t1), during (t2) and after (t3) the Financial Crisis. Outliers were assessed using boxplots. The inspection of the boxplots revealed two outliers in t2 (during) with Vision scores of (26.84), (24.78) and two outliers in t3 (after) with Vision scores of (7.93), (7.69). The outliers were excluded for further analysis and the *Explore* option in SPSS (2012) was rerun. There were 193 Letters to Shareholders in each time period, resulting in a total of 579 investigated letters in the analysis. Vision scores were normally distributed at each time point, as assessed by Shapiro-Wilk's test ($p > .05$). The assumption of Sphericity was not met, as assessed by Mauchly's test of Sphericity, $\chi^2(2) = 6.067$, $p = .048$. Epsilon (ϵ) was .970, as calculated according to the Greenhouse and Geisser (1959), and was used to correct the one-way repeated measures ANOVA. **Vision scores did not elicit statistically significant differences** over the three time periods (before, during and after), with $F(1,939, 372.358) = 1.641$ $p=.196$, and a partial $\eta^2 = .008$. Therefore, it seems that CEOs did not differ in *Vision* scores across all three time (t1-t3) periods.

3.2. Present Achievement (PA)

Data are mean \pm standard deviation unless otherwise stated. A one-way repeated measures analysis of variance (ANOVA) was conducted to determine whether there was a statistically significant difference in usage of Present Achievement (PA) words before (t1), during (t2) and after (t3) the Financial Crisis. Outliers were assessed using boxplots. The inspection of the boxplots revealed four outliers in t1 (before), one outlier in t2

(during) and 3 outliers in t3 (after). Since the outliers in t1 and t3 were close to the edge of the boxes, only the furthest score in t1 (17.39) and t3 (16.66) were excluded. There were 195 letters in each time period (before, during and after), resulting in a total of 585 used for analysis. Present Achievement (PA) scores were normally distributed at each time point, as assessed by Shapiro-Wilk's test ($p > .05$). The assumption of Sphericity was met, as assessed by Mauchly's test of Sphericity, $\chi^2(2) = 2,750$, $p = .253$. **Present Achievement (PA) scores were statistically significant different** in all three time periods (before, during and after), $F(2, 388) = 3.053$, $p=.048$, with a partial $\eta^2 = .015$. As it can be seen from Figure 2, the usage of Present Achievement (PA) words in CEOs rapidly fell from before the Financial Crisis (9.834 ± 0.135) to during the crises (9.505 ± 0.131) and kept decreasing moderately to after the crises (9.474 ± 0.127). This indicates that CEOs focus less on present achievements in economical hard times than in economical good times. Also this effect would prologue till after the Financial Crisis

3.3. Emotionality (EMO)

The purpose of this analysis was to determine if there are any statistically significant differences in Emotionality (EMO) scores of CEOs across all three time periods t1-t3 (before, during, after). There were 197 letters in each time period, resulting in a total of 591 investigated letters. Firstly, we checked for outliers using boxplots. The inspection of the boxplots revealed eight outliers in t1 (before) with EMO scores of (.74), (.71), (.71), (.72), (.68), (.68), (.65) (.65), one outlier in t2 (during); (.60), and two outlier in t3 (after); (.63), (.59). The assumption of normality was markedly violated, as assessed by Shapiro-Wilk's test ($p < .05$). Excluding the outliers and rerunning the *Explore* option, as well as using bootstrapping in SPSS (2012) did not improve our results regarding the assumption of normality. This is why we decided to continue with the non-parametric Friedman

test to determine statistical significant differences in Emotionality (EMO) scores across the time periods. The outliers were kept for further analysis. Pairwise comparisons were performed (SPSS Statistics, 2012) with a Bonferroni correction for multiple comparisons. **Emotionality scores were statistically significantly different** at the three time periods t1-t3 (before, during and after), $\chi^2(2) = 50.453, p < .0001$ (Figure 3). Post hoc analysis revealed

statistically significant differences in Emotionality scores from t1 (before) - (*Mdn* = .9115) to t2 (during) (*Mdn* = .8605), ($p < .0001$) and t2 to (during) (*Mdn* = .9016) ($p < .0001$) to t3 (after). Additionally there were significant differences between the time before (t1) and the time after (t3) ($p < .05$). As it can be seen, CEOs decreased their usage of Emotionality words from before to during the crises. After its end the CEOs would again use more Emotionality words.

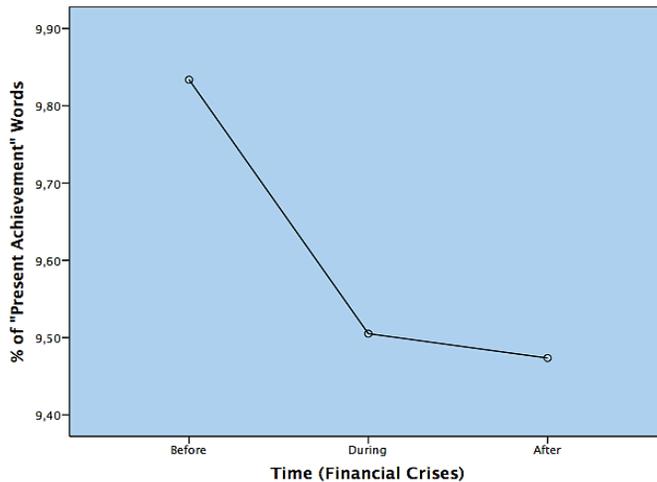


Figure 2. Estimated Marginal Means of Present Achievement Scores; $F(2, 388) = 3.053, p = .048$

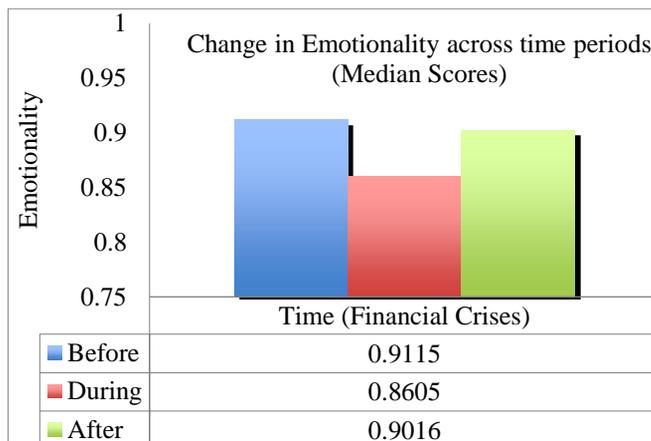


Figure 3. Median Emotionality Scores in all three time periods; $\chi^2(2) = 50.453, p < .0001$

Summary of Linguistic Changes of CEOs across the Financial Crisis is given in Table 1.

Table 1. Summary of Linguistic Changes of CEOs across the Financial Crisis (years 2006-2011)

Linguistic Variables (a)	Before Mean ± SD	During Mean ± SD	After Mean ± SD	F	p	Partial η ²
Vision	16.14 ± 0.20	16.10 ± 0.22	16.40 ± 0.22	1.641	0.196	0.008
PA	9.83 ± 0.14	9.51 ± 0.13	9.47 ± 0.13	3.053	0.048*	0.015

Linguistic Variables (b)	Before Median	During Median	After Median	χ ² (2)	p	
EMO	0.91	0.86	0.90	50.453	< 0.001**	

Note: N = 594 (a) One-way repeated measures ANOVA; Assumption of Sphericity was checked via Mauchly's Test of Sphericity (p < 0.05). In case of violation of Sphericity, Greenhouse and Geisser was used for correction (b) Friedman Test; in case assumption of Normality was markedly violated; Results are Median scores; *p < 0.05; ** p < 0.01

4. Discussion

The results showed that the Financial Crisis provoked substantial changes in the linguistic indicators of transformational leadership attributes within our investigated letters to shareholders. During the Financial Crisis the CEOs used significantly less present achievement-, as well as, emotionality related words. These changes lasted till after the crisis. The CEOs started to, once more, use more emotionality words. Nevertheless, they also talked significantly less about the present achievements. Lastly, the results did not show any significant differences in visionary words, indicating that the language use of the CEOs did not change across the investigated time periods. These findings illustrate that the Financial Crisis had indeed a profound impact on the language use and attributes of CEOs. It seems that during times of crises, some favourable transformational leadership qualities become highlighted, whereas other important aspects seem to be dramatically decreasing. Since this was an exploratory study, we will elaborate why these results possibly occurred:

The results did not show any significant differences in visionary words, indicating that the CEOs used the same amount across the Financial Crisis. This is contra-dictionary to earlier findings (Poole, 2016). A visionary outlook is strongly linked to transformational leaders, because when presented well they can motivate, inspire and leave a strong impression on the followers (Conger and Kanungo, 1988). And especially

during a severe crisis situation, the followers have many anxieties, frustrations and feelings of helplessness. Therefore, in such times people want a leader who seems to be powerful and is able to provide a clear direction (Pillai, 1996). The followers will accept, even need, the influence of a leader who can show high self-confidence and provide a solution to the current problem. Therefore, a CEO ought to convey meaning and understanding of the current situation, which can be accomplished by assuring that solutions are available to cope with the demands of the present situation (Shamir and Howell, 1999). Here, Hoffman et al. (2011) state that this can be achieved by conveying a positive, collective vision with which the employees can identify. Thus, it could be expected that in the midst of the crisis, the CEOs would create more messages that contain a visionary outlook in order to provide safety and guidance. Whereas after the crisis, the scores could have been expected to slowly decrease again. This is because, since the situation is once again better, there is a lower need to portray a vision to the followers and show a sense of guidance (Poole, 2016). However, neither seems to be the case - indicating that the Financial Crisis did not affect the CEOs visionary outlook.

The results also revealed that use of present achievement (PA) words was the highest before the crisis, indicating that CEOs set high performance expectations towards their followers (Podsakoff et al., 1990) and possibly towards themselves (McClelland, 1985). During the crisis there was a

significant drop in PA scores and they kept on slightly decreasing till after the crisis. These are quite surprising results, since the opposite could have been expected. Especially in times of crises there ought to be a strong focus on achievements and by doing so, leaders can accomplish high levels of task performance (Podsakoff et al., 1990). Further, by talking about the achievements, transformational leaders can increase the effectiveness of the entire company (Judge et al., 2002). A possible explanation for the lower scores might be that the achievements of the companies, in general, were quite low. Thus, indicating that there is little need for the CEO to talk about them in the first place. Additionally, the CEOs might have felt insecure or did not have a concrete plan on which tasks to focus on. This might possible indicate a poor transformational leadership quality. However, since the Financial Crisis was the worst since the Great Depression of the 1930s (Eigner and Umlauf, 2015), it must have caused much stress and anxiety. Out of this a sense of uncertainty and insecurity could have developed causing the CEOs to simply not know which *“things have to get done now”*. Furthermore, the lower scores could also be the CEO’s attempt to put future responsibilities off their shoulders. If the CEOs focused much on *“things getting done”* and these are than later not accomplished, they would have to take the responsibility for them at a later point. Therefore, in order to avoid being in charge of possible failures, the CEOs might not have wanted to talk about the current achievements in too much depth. Here, future researchers can align. It might be possible, that transformational leaders rather focus on future achievement in times of crisis, trying to send the message that *“things will get better”* and *“we will have success in the future”*. This is a very interesting question and prospective studies can help clarify whether this is the case.

Lastly, the CEOs used the most emotionality-related words priori to the crisis. This could indicate a positive group effort and coordination (Sy et al., 2005), as well as an

increased cooperation and fewer conflicts within the investigated companies (Barsade, 2002). In the onset of the crisis, emotionality words significantly decreased, which aligns with previous research (Bligh and Hess, 2007). It seems that the present situation reduced the use of emotionality words, possibly because there were few good things to talk about in the first place. But, it could also be a sign of a possible psychological distancing of the CEOs, in an attempt to cope with the present stressful situation (Cohn et al., 2004). After the crisis, the scores increased again, but they were slightly lower than before. This might indicate that the group effort and coordination were once more heightened (Sy et al., 2005) and there were possibly fewer conflicts between the followers (Bligh and Hess, 2007). The high post-crisis scores could also represent an attempt of the CEOs to transmit emotions onto their followers. This would align with the (positive) mood contagion phenomenon of Sy et al., (2005) and could represent a pursuit of the CEOs to increase the motivation and higher the group achievements (Sy et al., 2005). Lastly, the elevated post-crisis scores might be a sign of relief and emotional upheaval (Cohn et al., 2004), signalling that the *“crisis is overcome”*.

4.1. Limitations

Although this study had the advantage of looking at real world leaders in a naturalistic context, there are still some limitations. Perhaps, the first limitation that should receive attention is the use of CEOs as our definition of transformational leaders. Although CEOs are arguable the most powerful managers, they are still a small subset of all leaders and an exclusive subcategory within the whole population. CEOs might have more power and a better access to resources than the average leader. But besides this, the existing literature on transformational leaders hardly differentiates between other distinctive types. Because of

this, any generalizations of our results should be made with caution. Moreover, it has to be considered that the present study only looked at CEOs from companies within the United States. It might be that leaders from other countries talked and behaved differently during this stressful time. Thus, future research should focus on obtaining similar results with different types of leaders and by also investigating other cultures.

Also choosing the acceptable lower limit of word count in our research is a tricky business. This is because the more words, the more reliable the texts and thus the analyses will be. Therefore, excluding all CEOs who used less than 100 words in their letter to shareholders might not be the right criteria and could have limited our results. Future research might consider including all available data for their content analyses.

Additionally, even though LIWC proves to be a highly valid and reliable tool, it is far from being perfect. First of all, the internal consistency is not set to specific criteria, which makes it difficult to say whether LIWC is indeed a good measurement. Secondly, the technological platform used in LIWC is becoming outdated and more complex and precise tools for the analysis of language are starting to evolve. It has to be considered that the major strength of LIWC is not the software itself, but rather its empirical background, efficiency and accessibility. Using LIWC creates also a limited framework, since the established categories are already set and thus they might neither be a "best fit", nor an accurate measurement of our investigated phenomena. Also, word count approaches, such as LIWC ignore the context of the sentence and the setting of our investigated letters to shareholders. Therefore, unless one examines not only the sentences with all its linguistic markers, but also its context, it is difficult to make definite and certain conclusions.

Moreover, the letters to shareholders might possibly be another limiting factor. Even though they are important documents to gain

a broad range of implicit and explicit information about a company's performance, it is arguable whether the CEOs can freely decide which messages to include and exclude. Hyland (1998) reported that letters have a great rhetorical importance in building credibility and confidence, but he also sees the letters as rather subjective and promotional texts. Thus, it is most likely that the CEOs wanted to display a positive corporate image and that the words in the letters have been carefully selected for this purpose. Also the letters could have been ghostwritten, so another person than the CEO might have created them. However, it has to be mentioned that this almost impossible to clarify - no CEO would admit that they did not write the letter themselves, especially when their personal signature is present at the bottom. Nevertheless, all this could have potentially affected and biased our results. Furthermore, it has to be considered that the letters were published between January and June of each new business year. Therefore, they were quite time delayed and thus our analysis most likely does not fully display the ongoing of the Financial Crisis.

A final word on limitations, although our studies highlighted the importance of investigating the language of leaders, this is a far cry from untying the direction of causality. Language use can be driven by many factors, like individual differences, the current psychological states induced by the top-management team, the company culture, personal values, perceived future company performance and personal problems, just to mention a few. Also, the company performance may both influence and be influenced by the CEO's internal states, which might be manifested in their language use. Thus, it is highly likely that the issue is much more complex and there is most possible a great interplay between various other external factors, which we were not able to reveal in our studies.

4.2. Implications

Our research made several important contributions to the transformational leadership study. First of all, we pointed to the importance of investigating language in general, but also within times of severe economical disturbances. Doing so, we showed that language can be used as a naturalistic and unobtrusive way to examine distinct aspects of the leadership process. Further, content analyses have many advantages over previously used non-language based methods. For instance, gaining information by in-depth interviews or questionnaires on a large sample of leaders and especially CEOs would be almost impossible to do in real-life. Even though interviews and questionnaires can be very thorough and insightful, their implementation would be remarkably difficult and slow. Also CEOs, especially those of large companies, are extremely hard to access. Even if researchers were able to reach them, it would take much time, money and energy to take the interviews and get the adequate information. On the other side, the analysis of language is a unique and reliable way to access a variety of information about modern-day leaders, which would otherwise remain hidden.

Additionally, our study closed some of the existing knowledge gaps within the leadership and communication research. We examined written language in a naturalistic context, namely through the analysis of letters to shareholders, which presumably provided a high degree of implicit and explicit information. We also used a large sample size and considered various industry branches, which most likely lead to a good representation of the entire U.S. economy. Furthermore, by including the time before and after, we were able to create a consecutive picture of the Financial Crisis. In this sense, we were forerunners of this still highly up-to-date topic and to our knowledge, were the first to investigate in such great detail the characteristics of a leader's communication during this particular time.

Our studies also have many potential implications for leaders, professionals and organizations. The analysis of language can be used to gain a deeper understanding of the psychological and social states of individuals and teams. Applying content analysis could give important clues about the group atmosphere and dynamics within a company and thus might serve as another method for gaining feedback or initiating interventions. Furthermore, language is an excellent way to assess CEO's or leader's transformational attributes within a company, not only in economical up- and down sets, but also at several other points of their careers. Through that it can help monitor and signal potentially situations, where corrections might be needed. Since our results suggest that CEOs use less emotionality and achievement words during a crisis, perhaps professionals can develop adequate strategies to increase a leader's viewpoint and attitude in such times. Further, this method could benefit companies in monitoring the performances of their employees. It may help to identify those, who have high transformational leadership attributes and thus give incentives to foster their individual development. With the contribution of future studies, it might also be possible to make adequate predictions about the future performances of companies. Especially the relatively new topic of "Big Data" and "Cloud Computing" yield great and fascinating opportunities for prospective researchers.

Lastly, assessing one's own language could also be used as a technique of self-evaluation. Even though this approach is still at a very early stage, it opens the possibility for leaders to gain an increased consciousness about how they use language and what their words can tell about their personality and/or current psychological states. This increased consciousness would most likely be highly beneficial in many areas of the workplace, but could also have a positive influence on their private lives.

4.3. Future Directions

To help improve our results, future researchers should replicate our studies with different types of leaders. There are, most likely, great linguistic differences between CEOs and other managers within the business environment. Prospective researchers could, for example, investigate the language use of managers from the lower or middle management (e.g. sales, human resource or marketing) and thus gain fascinating results about their transformational leadership qualities.

Future researchers could also benefit from using personal texts to obtain more representative data, since they may be more authentic of a leader's true emotional and cognitive world. Here, the analysis of expressive writings, autobiographies, Twitter feeds or Facebook updates and their relatively easy access, might be beneficial. Improvements might also be made through choosing a different application than LIWC. For example, using a relatively new software approach such as NooJ could lead to a higher control over the categorization and classification of the investigated context and thus increase the control within the content analysis (Silberstein, 2016).

Moreover, future researchers should clarify whether CEOs were truly "good" or whether they were just trying to be effective leaders during the financial crisis. Our studies showed that the leadership qualities of CEOs changed, but we still do not know yet whether they were "respectable" and "admired" leaders during this time. It would be interesting to see what actual influences the CEOs had on their followers and the company performance, which should not only be measured through financial indicators. There are so many important questions that are still unanswered. For instance, were the CEOs just keen managers that solely focused on the performance of the company or did they try to be a role model to their followers? Were they trying to make the "right" or just the "logical" decisions? Did they try to save jobs and were

they an inspiration for the employees and the society, as a whole? Were the CEOs "warm" and showed honest concern for their followers, the company and the public? Or did they just want to get through the crisis as fast as possible, without considering the personal needs of others? All of these are still unanswered questions, but they are arguable such a big aspect of the entire leadership process during this severe crisis. This brings us to the next topic. Prospective studies should clarify what the language use of "good" leaders actually is. Doing so may provide important information about how, nowadays, truly "inspiring" and "respectable" business leaders look alike.

In relation to our study, it is very important for future research to decipher why the communication of CEOs did not change after the Financial Crisis. This seems to be quite unusual, but finding adequate explanations could be very difficult. It seems that the direct effects of the crisis, were not the only reason for the linguistic changes. It might be that rather indirect effects, for example, the enormous media coverage on the topic, lead to a self-strengthening effect and increased the anxiety and insecurity levels of leaders, but maybe also of the general public.

Our results also point to the importance of investigating language in general and as a method to detect various facets of the leadership process. Future research might assess how the communication and its changes could be used to make predictions about the future performance of an organization. Also and very interestingly, some attempts are already made to make adequate predictions about the current stock market (e.g. Schumaker and Chen, 2009; Tetlock, 2007). Nevertheless, content analysis is still a relatively new topic and there is so incredible much more to discover, explore and improve. Currently, we can only guess what psychological states accompany language use and in return what is influencing those psychological states. Future researchers would benefit from exploring why CEOs or leaders, in general, are speaking the way they

do and how this is associated to their effectiveness and the performance of the company.

Lastly, an incredible important task for future researchers is to explore various other linguistic aspects of the transformational leadership process. Due to the inherently richness of language, we could only focus on a limited amount of language variables in our studies. However, leadership in general is a complex and multi-layered process (Bass, 1990). Naturally, there are many other relevant theories and facets that can be considered and analysed. Yukl (2006) even argues that there is no consistent, overall definition of the term. Many specific conceptualizations within the social sciences are often put together under the broad umbrella of transformational leadership, which include potential outcomes like leader effectiveness, leader advancement and leader emergence (Kaiser et al., 2008). Therefore, each of these phenomena can be investigated in a conceptually distinct fashion. Even though, these aspects are most likely highly related, there might be different outcomes and linguistic markers that are remarkably important. Thus, many more scientific theories should be investigated by prospective studies. Indeed, there is so much more to discover about the communication styles and language use of modern-day leaders.

5. Conclusions

The main goal of the present study was to examine whether the transformational leadership qualities of CEOs changed in times of the Financial Crisis. By assessing word use through the quantitative content analysis software LIWC2015, we were able to identify

a variety of linguistic changes across our investigated time period. This created a consecutive picture of how top-managers of large U.S. companies behave during highly stressful times. Further, this makes this study to one of the first to explore in detail the language use of leaders during this particular time.

Research in this area is still quite sparse and relevant data are just beginning to emerge. We expanded on this, by applying highly appropriate frameworks, instruments and methodologies. Specifically, our analyses focused on the contents of publically available letters to shareholder. This allowed a highly naturalistic and solid analysis of the communication styles of modern-day CEOs. We focused on important transformational leadership qualities and its corresponding linguistic markers. Our results showed that the Financial Crisis provoked substantial changes in the language use of CEOs. It seems that in times of crisis, some favourable leadership qualities become highlighted, whereas other important aspects seem to be dramatically decreasing. Furthermore, our findings highlight the role that communication plays in the leadership process. Future researchers, professionals and leaders are encouraged to further explore language use as a method to gain a better understanding of the overall leadership phenomenon and facilitate interventions and directions that benefit leaders, teams and companies.

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Josef Scheuerlein

MENDELU, Mendelova
univerzita v Brně,

Brno

Czech Republic

josef.scheuerlein@gmail.com

Helena Chládková

MENDELU, Mendelova
univerzita v Brně,

Brno

Czech Republic

helena.chladkova@mendelu.cz

Klaus Bauer

MENDELU, Mendelova
univerzita v Brně,

Brno

Czech Republic

klausr.bauer@t-online.de
