Gender differences in nonverbal behaviour of effective leaders

An explorative study

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1.0 Abstract

Even though not researched very often, nonverbal behaviour is of great importance in leadership research. This study shows the importance of transformational leadership and it shows that in addition, it seems that gender and facial expression make a significant difference in leadership effectiveness. Also, other nonverbal behaviours such as the use of 'hedges', 'intensifiers', and 'tag questions' are seen more by men than women. Besides the effect of gender on leadership effectiveness, this study shows that the visibility of nonverbal behaviour has a positive effect on organisational performance.

2.0 Preface

This bachelor thesis is written by Liset Valster, in coöperation with supervisors Marcella Hoogenboom and Celeste Wilderom. As the topic of my research is not yet reviewed in literature very often, this literature study is extended with an explorative research. The process of this study was quite different from other studies as well. The videotapes were already made and used for other studies, from which I used the results as well. I started with coding the nonverbal behaviour according to the coding scheme created by Charlotte Rompelberg. After finishing this, I came up with a research model and a theoretical framework. With this model and framework I performed analyses and tests where the results came out.

Before I started with this research I had a conversation with Celeste Wilderom about what concepts and topics I found interesting. I was very interested in the differences between men and women and therefore, after coding the videotapes, I looked for literature on these topics. It was quite hard to find corresponding literature. Therefore, I performed an explorative study. The main question is 'How does nonverbal gendered behaviour influence effective leadership?'

The focus of this study is exploring differences in nonverbal behaviours between men and women, as well as exploring differences in leadership effectiveness and correlated nonverbal behaviours.

Even though the process was not easy to me, I enjoyed this study and I have learned a lot about performing research. However, I learned the most about the topics of my interest: Differences between men and women in nonverbal behaviours. For me, performing this study was a great lesson and I am very pleased with the results.

I hope you enjoy reading this paper.

Liset Valster

3.0 Introduction

This paper focuses on the subject that gender differences may exist in the nonverbal behaviours of leaders and what effect they might have on the relative effectiveness of the leaders.

A lot of research has been done to de differences in gender behaviour. Most of these researchers have focussed on themes as health and personality (Lagerspez et al, 1988; Feingold, 1994; Croson and Gneezy, 2009; Kendler et al, 2014; Kornstein et al, 2014), risk taking behaviour (Byrnes et al, 1999; Powel and Ansic, 1997; Anderson and Galinsky, 2006), and on communication (Hyde and Linn, 1988; Feingold, 1994, Hall et al, 1978, 2000). All of these subjects can be seen as natural human behaviour.

Human behaviour can be divided into two mainstreams; nonverbal and verbal behaviour. Verbal behaviour can be defined as using a language for sending or receiving a message to another human being. Verbal behaviour is easily observed (Skinner, 1986), as one can read or listen to the sender of this communication. Nonverbal behaviour can be defined as 'any movement or position of the face and/or body' (Ekman and Van Friesen, 1981).

This research will focus on nonverbal behaviours. As this is still a very broad topic, this study will focus on effective nonverbal leadership and the potential differences in gender.

Many studies on gender differences in effective leadership have shown that in fact there are differences between women and men (Bass and Avolio, 1994; Bass, Avolio and Atwater, 1996; Eagly, Johannesen-Schmidt and Van Engen, 2003). However, also plenty of studies have shown no difference between gender at all in effective leadership behaviour (Powell, 1990; Eagly, Karau and Makhijani, 1995; Eagly and Johnson, 1990).

Measuring nonverbal effective leadership in this research includes research on the effectiveness of the leader as described by his or her subordinates, as well as by his or her leader. In addition, nonverbal behaviour will be observed and coded according to a coding scheme created by Van Rompelberg (2014), and a relation with gender will be researched.

The main research question in this paper therefore is: 'How does nonverbal gender behaviour influence effective leadership?' This question is divided into sub-questions in order to answer this question as complete as possible. These sub-questions are 'What is nonverbal behaviour related to effective

leadership', and 'What gender differences exist in nonverbal behaviour of leaders?', and 'What is effective leadership?'.

In order to answer these sub-questions this research will start with a literature review on the topics: ' Effective leadership', 'Nonverbal behaviour', and 'Nonverbal behaviour in gender behaviour'.

In addition to the literature review, a cross-sectional, explorative study with 29 leaders of both a large public organization in the Netherlands as well as a Dutch bank will be performed. These leaders are videotaped during meetings and the videos are coded on nonverbal behavioural cues. This behavioural data is statistically analysed. The results will be discussed in chapter six.

Because of this extensive explorative research it can be shown that nonverbal behaviour is of great importance in leadership research. The literature study shows the importance of transformational leadership and it shows that in addition, it seems that gender and facial expression make a significant difference in leadership effectiveness. Also, other nonverbal behaviours such as the use of 'hedges', 'intensifiers', and 'tag questions' are seen more by men than women. Besides the effect of gender on leadership effectiveness, literature shows that the visibility of nonverbal behaviour has a positive effect on organisational performance.

This limited study could not establish the latter effect but we are in favor of such studies

4.0 Theoretical Framework

This section will provide a theoretical framework on the main subjects of this research. These subjects are 'Effective leadership'; 'Nonverbal leadership', and 'Gender and nonverbal behaviour'. This is a literature review where multiple theories are discussed, that may provide the answer on the research questions.

4.1 Leadership

This chapter will focus on the question: 'What is effective leadership?' In order to answer this question, multiple theories will be evaluated. Leadership styles will be identified and reviewed and finally, the ways to measure leadership effectiveness will be researched.

4.1.1. Leadership effectiveness

Yukl (2012) describes that the essences of leadership in organizations are to influence and facilitate individual and collective efforts to accomplish shared goals. This corresponds with Stogdill's definition from 1950: 'a leader's job is to move people from where they currently are to where they need to be in order to create a more innovative and productive organization' When a leader is effective in accomplishing these shared organizational goals this positively affects an organization's success (Irving & Longbotham, 2007).

Moreover, leadership is concerned with building cohesive and goal-oriented teams. Therefore, leadership can be seen as a collective process, where influencing others is important. 'Leadership is not a coercive process, it involves obtaining and utilizing the assistance of other people' (Chemers, 2001, p. 380).

The effectiveness of a leader in achieving the organizational goals is dependent on four key variables (DuBrin, 1998). Two of these key variables are not entirely controllable by the leader. These are the 'internal and external environment' and the 'follower characteristics' (DuBrin, 1998). An example of follower characteristics is the level of education of the followers. This will affect the expectations on the kind of leader in their organization.

The other two key variables are the ones that can be influenced by the leader. These are the 'leader characteristics and traits' and the 'leader behaviour and style' (DuBrin, 1998). Leadership characteristics and traits are part of a leader's personality. Various observations and research studies

have indicated that leaders have certain personality traits. These characteristics contribute to leadership effectiveness (Kirkpatick & Locke, 1991; Judge, 2002).

In addition, studies have demonstrated that organizational leaders rated as 'charismatic' motivate their followers to put forth effort beyond expectations, produce higher levels of effectiveness and satisfaction in their followers (Bass, 1985; Hater and Bass, 1988; Sosika, Avolio and Jung, 2002). Because the charismatic leadership style has been consistently found to be associated with positive work outcomes, female leaders should have an advantage over their male counterparts as a result of displaying higher levels of charismatic leadership (Vecchio, 2002; Eagly et al., 2003; Eagly, 2007). In nonverbal behaviour, this might mean that the charismatic leadership style is associated with higher frequencies of communal behaviours (Eagly and Kerau, 2002).

More specifically, it appears that personality traits like self-confidence, trustworthiness, warmth, sense of humor, high tolerance for frustration, dominance, extraversion, assertiveness, emotional stability, enthusiasm and self-awareness contribute to higher leadership effectiveness (DuBrin, 1998; Yulk, 1998; Locke, 1999; Daft, 1999; Stogdill, 1948; Bass, 1990).

4.1.2. Measuring leadership effectiveness

Measuring effective leadership is very important to all kinds of organizations because it is known that effective leadership has a major impact on an organization's success (Hogan, Curphy & Hogan, 1994; Irving and Longbotham, 2007; Amabile, 1998; Jung, 2001).

Often, leadership effectiveness is measured by perceptions of followers. The implicit view of the followers has therefore become the main criterion of leadership effectiveness (Van der Weide and Wilderom, 2004). A regularly used method to measure leadership effectiveness, which is also based on followers' perceptions, is the Multifactor Leadership Questionnaire (MLQ)(Bass and Avolio, 1995).

The MLQ rates the effectiveness of a leader by measuring the degree of transactional and transformational leadership styles (Judge & Piccolo, 2004). Both leadership styles are purported to provide a full range of leadership behaviours (Avolio & Bass, 2002; Van der Weide & Wilderom, 2004). Definitions of transactional and transformational leadership will be given in the next subsection.

According to Van der Weide and Wilderom (2004) their developed method for evaluating leadership effectiveness is more reliable and detailed than the MLQ (Wilderom & Van der Berg, 2010). Van der Weide and Wilderom (2004) propose in their article to use video observations as a measurement tool in research on effective leadership, given that video-based observations offer highly specific measurements based on actual behaviours instead of merely perceived behaviours (Wilderom & Van der Berg, 2010).

4.1.3. Leadership styles

Transactional leadership is defined as a style that consists of contingent reward and active management-by-exception (Den Hartog, Van Muijen & Koopman, 1997). Management-by-exception means that leaders monitor follower performance and correct their mistakes (Bass, 1999). Besides, transactional leadership involves contingent reinforcement. Followers are motivated by the leaders' promises, praise, and rewards, or they are corrected by negative feedback, reproof, threats, or disciplinary actions. The leaders react to whether the followers carry out what the leaders and followers have "transacted" to do (Bass, 1999).

Oppositely, transformational leadership is about inspiring followers to achieve individual and organizational goals. Transformational leaders concentrate on understanding the needs of each subordinate in order to fully develop their potential. In addition, they are focused on reducing the insecurity of their followers and give clear directions to them (Avolio, Bass & Jung, 1999).

Transformational leadership is often called charismatic leadership. In research they mean almost the same. That gets more clear when we look at the four main components that transformational leadership contains: 'charisma', 'inspirational motivation', 'intellectual stimulation' and 'individualized consideration' (Bass, 1985, 1998; Bass and Avolio, 1993). These four characteristics are widely accepted by researchers as the main components in the transformational leadership style (Shamir, House & Arthur, 1993; Conger and Kanungo, 1988, 1998; Kanungo and Mendonca, 1996)

Transformational leadership is known in the literature as the most effective leadership style and as the most consistent predictor of leadership effectiveness (Bass & Avolio, 1995; Bass, 1985; Lowe, Galen & Sivasusbramaniam, 1996). Hence, transformational leaders inspire greater commitment (Judge & Piccolo, 2004; Judge, Piccolo, & Ilies, 2004).

According to Schein (1989) effective women do not necessarily have to show the same behaviours as effective men in leadership. Evidence for this statement was found in the -not yet published- study of Wilderom and Nijhuis (2015). This study will also perform tests to explore whether effective men and women show different behaviours.

To summarize, effective leadership seems to be positively related to transformational leadership. Leaders who have personality traits like for example self-confidence, warmth, extraversion, assertiveness and a high toleration for frustration are more likely to be an effective leader. Measuring leadership can be done by performing an MLQ or by videotaping leaders during meetings. In addition, follower perceptions of the leader are very important in leadership effectiveness. Nonetheless, it might be the case that personality traits for effective women are different than those for men. In this study there will be explored whether or not nonverbal behaviour also provides evidence for the statement of Schein (1989).

4.2 Nonverbal behaviour

Nonverbal leadership will be discussed in this chapter. First of all, the importance of nonverbal behaviour in both human communication, as well as in leadership behaviour will be reviewed. Secondly, the different kinds of typical behaviours will be reviewed and finally this chapter will show what nonverbal behaviours are typical for effective leadership. With these sections the question 'What is related nonverbal behaviour to effective leadership?' will be answered.'

4.2.1. Importance of nonverbal behaviour

Nonverbal behaviour can be defined as 'any movement or position of the face and/or body (Ekman and Van Friesen, 1981, p. 58) Therefore, nonverbal behaviour is an important element in human interactions (Knapp, 2012). As we know from Maurer and Reinemanns' book (2006) 55 percent of the effect of a speech results from the body language, 38 percent from the voice, and just 7 percent from the content of a speech.

So, imagine a situation where your professor is telling you stories about world war two. He speaks very monotone, he keeps looking at his notes and doesn't move at all. It is very likely that you don't like this reading of the professor. When he repeats this lecture with a lot of hand gestures, emotion

in his voice, and direct connections with the students, you may get really interested in this topic and listen more carefully.

Therefore, nonverbal behaviour accounts for a significant proportion of the communicative meaning in a human interaction (Boice & Monti, 1982). This is known widely nowadays, but the impact may be larger than we think, because unintentionally communicating or leaking emotional states via displays or gestures is common (Buck & Van Lear, 2002). Whether people rely on verbal or nonverbal behaviour to interpret a sent message depends on distinct situational factors. For example, when a verbal message is ambiguous, there is higher chance that nonverbal cues become more important in the interpretation of this message (Mast, 2007).

Also, the involvement of the listener plays a role. When a listener is highly interested in the topic of the message, he will focus more on the verbal content of the message. On the opposite, the less involved the listener is, the more attention he will give to nonverbal cues. This process is explained in the elaboration likelihood model (ELM) of Petty and Cacioppo (1986).

According to the ELM there are two routes in interpreting a message. These two routes are depending on the degree of ego-involvement, and the team satisfaction. Petty & Cacioppo (1986, p. 145) suggested that 'as personal relevance increases, people become more motivated to process the issue-relevant arguments presented'. So, the highly involved individuals, on the one hand, engage in systematic thinking, they elaborate the arguments carefully and focus on the quality of communication content. In addition, nonverbal signals are less important to them. This route is called the central route of persuasion.

Uninterested individuals, on the other hand, tend to process information superficially, the quality of arguments is less important, they base their judgments on source characteristics (e. g. the speaker's attractiveness) or characteristics of the source's nonverbal performance (e. g. facial expressions or body language). This route is called the peripheral route. Here, nonverbal signals are important sources of persuasion effects (Petty & Cacioppo, 1986; Jackob et al., 2001).

4.2.2. Coding nonverbal behaviour

In order to send a complete message, people unconsciously use their whole body for sending a message. Different body parts are used. Gestures, gaze and head movements fulfill several communication functions. Poggi and

Vincze (2008) state that we use body movements to display emotions, but also for sending communication messages. For example you can use your arm to 'tell' someone to come closer. For that message words are not needed at all.

As already stated in the previous chapter, unintentionally communicating or leaking emotional states via displays or gestures is common, so being unaware of your own signals is possible (Buck & Van Lear, 2002; Poggi & Vincze, 2008).

In order to get more structure in nonverbal behaviour, Ekman and Friesen (1969) have classified nonverbal behaviour into five different categories. The first category is called 'Emblems'. These are movements that substitute words, such as in the example above. The second category 'Illustrators' includes movements that accompany speech, and modify or punctuate it. Thirdly, the category 'Regulators' includes movements that maintain or signal a change in listening/speaking role. The fourth category is called the 'Adaptors'. These can be either self- or object adaptors. Adaptors are manipulations related to individual need or emotional state. The fifth and final category is 'Affect displays'. This means the facial expressions of an individual.

4.2.3 Nonverbal behaviour of leadership in the culture of organizations

As one may assume, just like with verbal behaviour, nonverbal behaviour of a leader also drives subordinate or supervisor perceptions of leadership. Some researchers have shown that nonverbal communication plays a much larger role in leadership effectiveness than verbal communication (Ekman, 1973; Haase & Tepper, 1972; Hall & Mast, 2007; Maurer & Reinemann, 2007).

A leader's nonverbal message, which is displayed via particularly hand gestures or facial expressions, can affect followers (Goleman, 1998), but leaders may be unaware of what their hand gestures convey, in terms of both meaning, and the impact on followers (Talley & Temple, 2015). When leaders become aware of specific hand gestures, and performing those gestures that effective leaders use, leaders may increase the understanding of their verbal message for their followers (Talley & Temple, 2015).

Hogan and Kaiser (2005, p. 175) state that 'leader personality influences the dynamics and culture of the top management team, and the characteristics of the top management team influence the performance of the organization'.

They found support for this statement in studies of Peterson et al. (2003) and Harter et al. (2002).

In the article of Peterson et al. (2003), they used datasets from CEOs of 17 large multinationals to show that CEO personality powerfully affects the culture and dynamics of the tot management team. Moreover, they also showed that the characteristics of the top management team were substantially correlated with business outcomes such as sales growth, Return On Investment and Return On Assets.

There seems to be evidence that being satisfied with a leader is very important to followers. Harter et al. (2002) reviewed literature on employee satisfaction. They showed that satisfaction in a job means actually satisfaction with supervisors. In addition, they performed a meta-analysis including almost 200.000 employees, which supported the outcomes of the literature review.

The study of Hogan and Kaiser (2005) shows that leadership personality predicts leadership style, leadership style predicts employee attitudes and team functioning, and attitudes and team functioning in their turn predict organizational performance.

Besides, team climate and team satisfaction also play a large role in follower satisfaction. Team climate is assumed to serve as a mechanism through which the link between leader influences on team effectiveness might be better understood (Ilgen, Hollenbeck, Johnson and Jundt, 2005). Integration between leader behaviour, outcome variables, and affective team climate has been advocated by Schneider, Ehrhart, and Macey (2011).

A positive climate can enhance the followers socio-emotional functioning which in turn may foster a team's openness to share and process information (Mesmer-Magnus and DeChurch, 2009). Mesmer-Magnus and DeChurch (2009) have found that a cooperative climate had a positive influence on team information sharing. These influences can affect member's behaviour and its performance (Chen and Kanfer, 2006).

Summarized, it can be said that nonverbal behaviour in leadership is very important aspect in organizational performance. Nonverbal behaviour can indicate a leaders emotion, and can improve the involvedness of the followers. Once the leader is aware of gestures and body movements he or she is using, he or she can compare it to more effective leaders. This might improve showing their nonverbal behaviour. When followers are more

attracted to their leader in terms of the leaders personality, followers might get more loyal to the company and get more satisfied. In addition, team climate plays a large role in follower satisfaction and follower performance. A positive climate is therefore likely to increase organizational performance as well.

4.3 Gender differences

This chapter will focus on the subquestion 'What gender differences exist in nonverbal behaviour of leaders?'. The differences between men and women may not only be visible, inside beliefs also play a big role. These beliefs that men are more competent leaders than women may cause barriers for female leaders: lessening access to leadership roles, and reducing possibilities for progression into higher organizational positions (Rhode & Kellerman, 2006). Personality and nonverbal behaviour seem to have an effect on these beliefs.

4.3.1 Gender differences in leadership

Carless (1998) did a research on gender differences in transformational leadership because she found out that, even though an increasingly amount of women are getting employed as managers, there still exists a masculine focus on leadership. When reviewing literature on gender and personality this seems not very odd:

Men are associated with qualities such as assertiveness, dominancy, masterfulness, self-sufficiency and self-confidence (Eagly et al, 2003; Eagly & Karau, 2002). When looking at traditional leadership it seems that these masculine qualities go hand in hand with effective leadership (Eagly et al, 2003). In addition, many researchers found that male leaders are more often positively evaluated than women in leadership roles (Eagly & Karau, 2002; Jago & Vroom, 1982; Ridgeway, 2001).

Women on the other hand, are associated with qualities like kindness, supportiveness, affection and care for others (Scott and Brown, 2006). In addition, Eagly and Johnson (1990) have performed a comprehensive meta-analysis where they demonstrated that these qualities make female leaders emphasize more on interpersonal relations and task accomplishment than men do. These qualities also show that female leaders are more likely to be charismatic or transformational leaders.

Unlike these traditional views there seems to be evidence that people believe that, over time, women's attributes have become more like men's and will continue to do so (Diekman and Eagly, 2000). Recent research has shown that women are more and more viewed as equal to men in intelligence and competence (Hentschel, Heilman and Peus, 2012). These statements can be seen as another evidence for Schein's (1989) statement that effective women do not necessarily show the same behaviours as effective men.

To conclude, gender differences in nonverbal behaviour do exist on some level. Women are associated with transformational qualities such as kindness, affection and care for others. Men on the other hand are associated with qualities like dominancy, assertiveness and masterfulness. However, this doesn't mean that women are more effective leaders than men are. This chapter shows evidence that effective women do not necessarily show the same nonverbal behaviours as effective men do.

5.0 Method

5.1 Conceptual framework

This study is explorative, it is meant to test if there is any correlation or relation between nonverbal behaviour, gender and leadership effectivity. Therefore, this study tests if a certain nonverbal behaviour correlates with high leadership effectivity. In addition, gender will be used as a mediator variable to test if certain nonverbal behaviours are more effective for men or women. This leads to a conceptual framework shown in figure 1 below.

Figure 1 Conceptual Framework
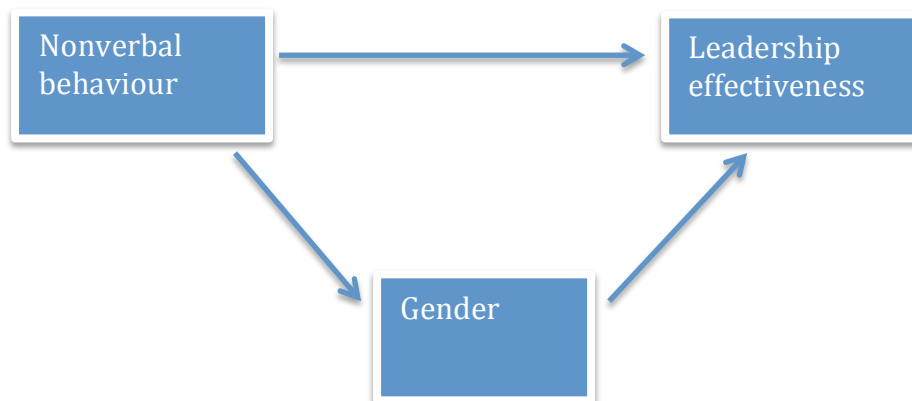
5.2 Research Design

This study used a cross-sectional design with three different sources:
(1) Multiple expert rates
The supervisors of the videotaped leaders rated the overall effectiveness of the leaders.

(2) Follower survey
This survey measured the followers' perception of leaders effectiveness, and

(3) Video-based field observations
These videotapes were used to precisely observe and code the leaders' nonverbal behaviour.

5.3 Research sample

A total of 29 leaders participated in this research. 21 of these leaders are working for a large Dutch bank at branches in the east of the Netherlands. The other 8 leaders are working for a large public organization in the Netherlands, and are situated amongst different locations within the Netherlands. The 8 leaders of the large public organization were randomly chosen from the available samples with a total of 14 videos of that organization. There are 9 women and 20 men in this research.

5.4 Data collection

The leaders who participated in this study were videotaped in randomly selected, prescheduled, regular staff meetings with their followers. All the recordings took place in conference rooms in one of the establishments of the locations of the Dutch public organization or the Dutch bank.

During the meeting both the leader and all the followers were videotaped using three cameras. The cameras were located in a fixed location before the meeting took place. It was important that the leader and followers in the meeting were aware of the camera presence as little as possible. Although the leader and followers were aware of being filmed, we wanted to record their natural leader- and followership behaviour.

Immediately after the recorded meetings, each participant follower was asked to fill in a survey in which they were asked about the perception of their leaders transformational leadership style and the degree to which they see their leader as effective.

5.5 Data analysis

These videos are coded on nonverbal behaviour according to a coding scheme created by Rompelberg (2014). Most videos were coded by two coders, only five of them are coded by only one coder. However, the IRR (inter reliability rate) was high enough to assume that all videos were coded with the same validity.

Before the data could be used for analysis it had to be standardized. This is necessary because of the variance of the duration of the videotaped

meetings. Therefore, all data had to be transformed into relative behaviours. All behaviours were transformed to percentages relative to the total duration of the meeting. The behaviours were not mutually exclusive. Leaders could be leaning forward and shaking their head at the same time for example.

After standardizing the data, it was tested for normality. The Shapiro-Wilk test was used for this, because the sample size was smaller than 2000, this is the most commonly used method to test normality for small sample sizes. The results of the Shapiro-Wilk test can be seen in appendix B.

Because the data were not normally distributed at first, the data was transformed with the log10 formula. Logarithmic transformations such as the log10 formula can increase normality and are therefore commonly used (Osborne, 2010). In addition, the QQ-plots were checked to see if the data looked normal enough. This was done to avoid performing non-parametric tests. Parametric tests tend to provide more reliable results. The transformed data was usable for parametric tests.

The group of 29 leaders was divided into two groups. The first group included the less effective leaders, who had an expert rate lower than 4.75 (on a scale from 1 to 7). The second group is considered the high effective leaders, as their expert rates are higher than 4.75.

The distinction between lower effective leaders and higher effective leaders was set on 4.75 because that corresponds with a grade between 6,5 and 7 on a scale from 1 to 10, which can be seen as a 'more than sufficient' (ruim voldoende in Dutch).

The independent expert rate is used for the variable ' leadership effectiveness' to reduce the common method bias. This means that if the follower rate was used, there would have been a chance for a systematic error variance because all the results came from the same source (Simmering, Richardson, Ocal, Atinc, 2014).

6.0 Results

In this section the results of the explorative study are reported. These results are divided into descriptive statistics, correlations between the various constructs and various analyses testing the relation between nonverbal behaviour, gender and perceived leadership effectiveness.

6.1 Descriptive statistics

Tables 1a through 1d present the means, standard deviations and significance levels of the key behaviours in this study. The outcomes in the table are the result of an independent T-test.

Based on the independent expert ratings a distinction is made between highly effective (n = 19) and least effective leaders (n = 10).

Table 1a

Behaviour (in percentage of total duration)	Leadership effectiveness	Mean	Standard Deviation	Significance level *
Facial expression	low	4.3360	0.62599	0.378
	high	4.5489	0.59872	
Closed smile	low	1.3768	0.27224	0.983
	high	1.1585	0.23109	
Upper smile	low	1.5078	0.48919	0.280
	high	1.6561	0.24092	
Broad smile	low	0.5038	0.68463	0.961
	high	0.4906	0.67005	
Laughter	low	1.2230	0.39202	0.568
	high	1.3048	0.28068	

Table 1b

Behaviour (in percentage of	Leadership effectiveness	Mean	Standard Deviation	Significance level*

Behaviour (in percentage of total duration)	Leadership effectiveness	Mean	Standard Deviation	Significance level*
total duration)				
Forward lean	low	1.1062	0.68920	0.624
	high	1.2317	0.60290	
Upright position	low	1.7479	0.13477	*0.078*
	high	1.5047	0.54271	
Backward lean	low	0.9327	0.61502	0.805
	high	0.9913	0.56787	

Table 1c

Behaviour (in percentage of total duration)	Leadership effectiveness	Mean	Standard Deviation	Significance level*
Head orientation	low	1.8649	0.39935	0.688
	high	1.7703	0.67360	
Nodding	low	1.5187	0.80459	0.680
	high	1.6419	0.73144	
Shaking	low	0.9262	0.59861	0.418
	high	0.7544	0.49931	

Table 1d

Behaviour (counts in percentage of total duration)	Leadership effectiveness	Mean	Standard Deviation	Significance level*
Fluency of speaking	low	10.0705	4.24071	*0.036**
	high	6.5501	3.53692	
Nonverbal hesitations	low	6.9123	5.55180	0.286
	high	5.0625	3.32065	
Tag questions	low	0.5995	0.72070	0.170

	high	0.3259	0.27834	
Hedges	low	1.8278	3.14419	0.389
	high	0.8331	2.66031	
Intensifiers	low	0.3101	0.21639	0.226
	high	0.2070	0.18868	

The results of these independent T-tests show a significant difference between the least effective leaders on speaker fluency. It is found that the less effective leaders speak less fluently. They are more likely to use nonverbal hesitations, tag questions, hedges, and intensifiers. [(t, 27) = 2,108, p < 0.05];

In addition, even though it is not significant, it seems that less effective leaders sit more upright than the more effective leaders. That could also mean that more effective leaders change positions more often.

6.2 Behaviour analysis

6.2.1 Correlations with leadership effectiveness

With a spearman's rho test the correlation different variables can be tested. In this study, the correlation between leadership effectiveness as scored by the experts and the different nonverbal behaviours of the leaders themselves were measured. The results are shown in table 2. Leadership effectiveness is significantly correlated with the use of hedges. In addition, even though 'p' is slightly bigger than 0,05 it seems again that speaker fluency is correlated with leadership effectiveness.

Table 2a

Leadership effectiveness	nonv. Hesitations	tag questions	hedges	intensifiers	speaker fluency	facial expr closed smile	facial expr upper smile	facial expr broad smile	facial expr laughter	post lean upright	post lean foreward	post lean backward	head move nodding	head move shaking	head move orientation
1,000	-,015	-,285	-,413	-,161	-,391	-,123	,135	-,179	-,020	-,281	,123	,060	,244	,024	,167
	,941	,149	,032	,441	,053	,524	,484	,352	,920	,140	,527	,756	,203	,900	,386
29	27	27	27	25	25	29	29	29	29	29	29	29	29	29	29

Also, the nonverbal behaviours are tested for the correlation with the other nonverbal behaviours. The results of these spearman's Rho tests can be seen in Appendix B. An interesting finding of this test is that the nonverbal behaviour 'closed smile' is not correlated with the nonverbal behaviours 'upper smile', 'broad smile', and 'laughter'. These last three behaviours are all correlated with each other. This might mean that leaders who show closed smiles, are not very likely to also show upper, or broad smiles, or even laughter.

Another result that is interesting to see is that the head movement 'nodding' is correlated with the behaviours 'upper smile', 'broad smile', and 'leaning forward'. This proves that these positive, confirming behaviours are correlated significantly with each other. In addition, the head movement 'shaking' is in its turn significantly correlated with the speaker fluency of the observed leaders. Speaker fluency is observed with the behaviours 'nonverbal hesitations', 'tag questions', 'intensifiers', and 'hedges'. This means that leaders who show the head movement 'shaking' are more likely to also show more counts of the behaviours of speaker fluency. The more of these behaviours you show, the lower the fluency.

6.2.2 Gender differences

In this study, an independent T-test was used to see if there are any differences in leadership effectiveness in general between women and men. The difference can be observed in table 2b. This is not a significant difference [t (27) = 0.367 with p< 0.05]. With an ANOVA-test this was double-checked. Appendix C shows the output of the ANOVA test. The differences can be assumed as not significant. This study will explore if there are any interactions in gender and nonverbal behaviour of effective and less effective leaders.

Table 2b

Gender	Mean	Standard deviation	Significance level*
Woman n=9	5.1011	0.74477	0,388
Man n=20	4.9955	0,64904	

Besides the independent T-test between leadership effectiveness and gender, another independent T-test was performed to explore the differences in nonverbal behaviour per gender. This spearman's Rho test can be seen in table 2c. The results show that only the use of intensifiers is significantly correlated with gender. According to this study women use more

intensifiers in their meetings. Other behaviours are not noticed as significantly different in this test.

Table 2c

Gender	intensifiers	hedges	tag questions	Hesitations	Spfltotal	head move orientation	head move shaking	head move nodding	post lean backward	post lean foreward	facialexp	post lean upright	facial expr laughter	facial expr broad smile	facial expr upper smile	facial expr closed smile
1,000	,535**	-,121	-,040	,323	,321	-,116	,018	-,170	-,107	,125	-,053	-,205	-,036	-,066	,036	,004
	,006	,548	,842	,101	,118	,550	,926	,379	,580	,518	,783	,286	,854	,732	,854	,982
29	25	27	27	27	25	29	29	29	29	29	29	29	29	29	29	29

6.2.3. Interactions in leadership effectiveness

Next, a two-way independent ANOVA test is performed to look at the interactions between gender, leadership effectiveness and nonverbal behaviour. The variable facial expression was divided into three categories: 'few facial expression', 'average facial expression', and 'above average facial expression'. The two- way independent ANOVA test shows that there is a significant interaction between the facial expression and the gender of the leader in leadership effectiveness [$F_{(2,3)} = 4.701$, $p < 0.05$]. This effect is plotted in figure 2. The strength of this difference was measured with Cohen's d (d=-0.3124). This can be seen as a small negative effect.
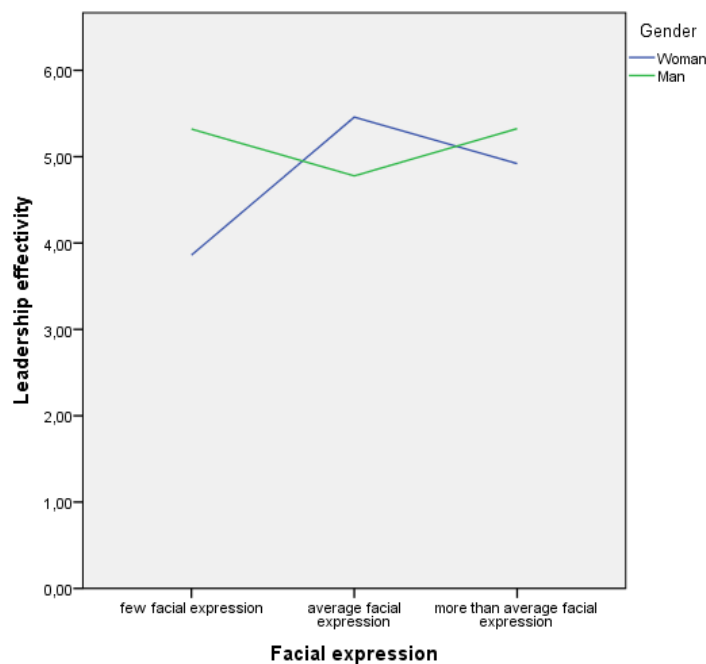

Figure 2

It was also interesting to see that even tough previous researches have shown otherwise, speaker fluency was not significantly correlated with gender. The same counts for forward and backward leaning. However, this study shows that an 'upright position' is correlated strongly but not significantly (p=0.064) with leadership effectiveness. It also shows that effective female leaders show fewer 'upright positioning' than effective male leaders. This could also mean that women in general are less likely to sit still and change positions more often. However, this effect was not significant and could be further reviewed in a larger study.

7.0 Conclusion

The main research question in this paper was: 'How does nonverbal gender behaviour influence effective leadership?' This question was divided into sub-questions in order to answer this question as complete as possible. These sub-questions are 'What is nonverbal behaviour related to effective leadership', 'What gender differences exist in nonverbal behaviour of leaders?', and 'What is effective leadership?'.

Effective leadership seems to be positively related to transformational leadership. Leaders who have personality traits like for example self-confidence, warmth, extraversion, assertiveness and a high toleration for frustration are more likely to be an effective leader. Measuring leadership can be done by performing an MLQ or by videotaping leaders during meetings. In addition, follower perceptions of the leader are very important in leadership effectiveness. Nonetheless, it might be the case that personality traits for effective women are different than those for men. In this study there will be explored whether or not nonverbal behaviour also provides evidence for the statement of Schein (1989).

Nonverbal behaviour in effective leadership is a very important aspect in organizational performance. Nonverbal behaviour can indicate a leaders emotion, and can improve the involvedness of the followers. Once the leader is aware of gestures and body movements he or she is using, he or she can compare it to more effective leaders. This might improve showing their nonverbal behaviour. When followers are more attracted to their leader in terms of the leaders personality, followers might get more loyal to the company and get more satisfied. In addition, team climate plays a large role in follower satisfaction and follower performance. A positive climate is therefore likely to increase organizational performance as well.

Gender differences in nonverbal behaviour do exist on some level. Women are associated with transformational qualities such as kindness, affection and care for others. Men on the other hand are associated with qualities like dominancy, assertiveness and masterfulness. However, this doesn't mean that women are more effective leaders than men are. This showed evidence that effective women do not necessarily show the same nonverbal behaviours as effective men do.

The results of the explorative study show a significant difference between the least effective leaders on speaker fluency. It is found that the less effective leaders speak less fluently. They are more likely to use nonverbal hesitations, tag questions, hedges, and intensifiers. Speaker fluency can be measured with the analysis of the behaviours 'nonverbal hesitations', 'tag questions', 'intensifiers', and 'hedges'. This means that leaders who show head movement 'shaking' are more likely to show more counts of the behaviours of speaker fluency. The more of these behaviours you show, the lower the fluency of speaking.

It was also interesting to see that even tough previous researches have shown otherwise, speaker fluency was not significantly correlated with gender. The same counts for forward and backward leaning. However, this study shows that an 'upright position' is correlated strongly but not significantly ($p=0.064$) with leadership effectiveness. It also shows that effective female leaders show fewer 'upright positioning' than effective male leaders. This could also mean that women in general are less likely to sit still and change positions more often. However, this effect was not significant and could be further reviewed in a larger study. In addition, even though it is not significant, it seems that less effective leaders sit more upright than the more effective leaders. That could also mean that more effective leaders change positions more often.

Another result that was interesting to see is that the head movement 'nodding' is correlated with the behaviours 'upper smile', 'broad smile', and 'leaning forward'. This proves that these positive, confirming behaviours are correlated significantly with each other. Also, the head movement 'shaking' is in its turn significantly correlated with the speaker fluency of the observed leaders.

The results of the explorative study show that only the use of intensifiers is significantly correlated with gender. According to this study women use more intensifiers in their meetings. Unfortunately, other behaviours are not noticed as significantly different in this study.

8.0 Discussion

The specific question guiding this research was 'How does nonverbal gender behaviour influence effective leadership?' In order to answer the research question a literature study and an explorative field study were performed. Some interesting findings are mentioned in the results section. However, many results of the literature review did not correspond with the field study. According to the literature, it seemed that transformational signs like nodding and smiling are seen as more effective nonverbal cues for leadership effectiveness. However in this study, leadership effectiveness and these specific nonverbal behaviours were not correlated.

This study did show that there is a significant difference in facial expression of men and women in effective leadership. The direction however is not completely clear. As stated in chapter 4.2 transformational leadership is often called charismatic leadership. It might be interesting to find out why some typical charismatic behaviours did not correlate with each other. For example, nodding and smiling were tested on correlation, but it was not found to be significant even though it was expected to be according to literature.

For future research on this topic it would be better to perform the study on a larger sample. This study included 29 leaders of which only 9 were female. For validity reasons it would be better to have about the same amount of women as men.

This study did not focus on the involvement of the follower and personal relevance. Literature showed that this has a large effect. For future research it would be interesting to perform an experiment in which leaders try to increase personal relevance for their followers. According to literature as reviewed in chapter 4.2, the visibility of emotion and the awareness of the

gestures of the leader also plays a role. It may be interesting to find out to what extent leaders can improve this visibility of their emotions and gestures through training and courses.

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Appendix A Results of Shapiro-Wilk test of behaviours in percentages		
Variable	statistic	significance level*
Head orientation	0,612	0,635
Facial expression - Closed smile	0,93	0,056
Facial expression - Upper smile	0,956	0,266
Facial expression - Broad smile	0,694	0,000
Facial expression - Laughter	0,879	0,003
Postural lean - forward lean	0,84	0,001
Postural lean - Upright position	0,899	0,013
Postural lean - Backward lean	0,943	0,146
Head movement - nodding	0,835	0,001
Head movement - shaking	0,835	0,001
Fluency of speaking - Nonverbal hesitations	0,612	0,013
Fluency of speaking - Tag questions	0,824	0,000
Fluency of speaking - Hedges	0,467	0,000
Fluency of speaking - Intensifiers	0,838	0,002
*Significance level P<0.05		
Results of Shapiro-Wilk of behaviours log10		
Head orientation	0,971	0,635
Facial expression - Closed smile	0,931	0,080
Facial expression - Upper smile	0,944	0,566
Facial expression - Broad smile	0,957	0,480
Facial expression - Laughter	0,78	0,000
Postural lean - forward lean	0,773	0,000
Postural lean - Upright position	0,933	0,081
Postural lean - Backward lean	0,859	0,003
Head movement - nodding	0,762	0,000
Head movement - shaking	0,965	0,593
Fluency of speaking - Nonverbal hesitations	0,751	0,000
Fluency of speaking - Tag questions	0,97	0,630
Fluency of speaking - Hedges	0,896	0,012
Fluency of speaking - Intensifiers	0,896	0,018

Appendix B

Correlations

Spearman's rho. Column abbreviations: LE = Leadership effectiveness, Hes = nonv. Hesitations, TagQ = tag questions, Hedg = hedges, Int = intensifiers, SF = speaker fluency, CS = facial expr closed smile, US = facial expr upper smile, BS = facial expr broad smile, Lgh = facial expr laughter, PLU = post lean upright, PLF = post lean foreward, PLB = post lean backward, Nod = head move nodding, Shk = head move shaking, Ori = head move orientation.

Variable		LE	Hes	TagQ	Hedg	Int	SF	CS	US	BS	Lgh	PLU	PLF	PLB	Nod	Shk	Ori
Leadership effectiveness	Correlation Coefficient	1,000	-,015	-,285	-,413	-,161	-,391	-,123	,135	-,179	-,020	-,281	,123	,060	,244	,024	,167
	Sig. (2-tailed)		,941	,149	,032	,441	,053	,524	,484	,352	,920	,140	,527	,756	,203	,900	,386
	N	29	27	27	27	25	25	29	29	29	29	29	29	29	29	29	29
nonv. Hesitations	Correlation Coefficient	-,015	1,000	-,087	-,140	,392	,616	,080	,480	-,488	-,197	-,212	,457	-,246	,188	,378	,043
	Sig. (2-tailed)	,941		,667	,485	,053	,001	,693	,011	,010	,326	,287	,017	,217	,347	,052	,832
	N	27	27	27	27	25	25	27	27	27	27	27	27	27	27	27	27
tag questions	Correlation Coefficient	-,285	-,087	1,000	,261	-,131	,043	,089	-,045	,017	-,053	-,155	,060	,063	,298	-,365	-,031
	Sig. (2-tailed)	,149	,667		,189	,533	,838	,659	,825	,931	,795	,440	,764	,755	,131	,061	,880
	N	27	27	27	27	25	25	27	27	27	27	27	27	27	27	27	27
Hedges	Correlation Coefficient	-,413	-,140	,261	1,000	,035	,426	-,153	-,410	,648	,083	-,410	-,517	,160	-,097	-,488	-,641
	Sig. (2-tailed)	,032	,485	,189		,870	,034	,447	,034	,000	,681	,034	,006	,425	,629	,010	,000
	N	27	27	27	27	25	25	27	27	27	27	27	27	27	27	27	27
Intensifiers	Correlation Coefficient	-,161	,392	-,131	,035	1,000	,380	,283	,032	-,171	-,032	-,221	-,052	,052	-,161	,246	-,272
	Sig. (2-tailed)	,441	,053	,533	,870		,061	,171	,881	,413	,881	,289	,805	,807	,442	,236	,189
	N	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Speaker fluency	Correlation Coefficient	-,391	,616	,043	,426	,380	1,000	-,246	,070	,085	,059	,323	,048	-,308	-,282	,004	-,475
	Sig. (2-tailed)	,053	,001	,838	,034	,061		,237	,740	,685	,779	,115	,821	,134	,172	,985	,016
	N	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
facial expr closed smile	Correlation Coefficient	-,123	,080	,089	-,153	,283	-,246	1,000	-,185	-,152	-,236	-,237	,117	,134	,155	,332	,319
	Sig. (2-tailed)	,524	,693	,659	,447	,171	,237		,338	,432	,219	,217	,547	,487	,422	,078	,091
	N	29	27	27	27	25	25	29	29	29	29	29	29	29	29	29	29
facial expr upper smile	Correlation Coefficient	,135	,480	-,045	-,410	,032	,070	-,185	1,000	-,588	-,669	-,186	,426	,107	,438	,326	,324
	Sig. (2-tailed)	,484	,011	,825	,034	,881	,740	,338		,001	,000	,334	,021	,582	,018	,084	,086
	N	29	27	27	27	25	25	29	29	29	29	29	29	29	29	29	29
facial expr broad smile	Correlation Coefficient	-,179	-,488	,017	,648	-,171	,085	-,152	-,588	1,000	,088	,449	-,618	-,063	-,429	-,484	-,547
	Sig. (2-tailed)	,352	,010	,931	,000	,413	,685	,432	,001		,651	,014	,000	,745	,020	,008	,002
	N	29	27	27	27	25	25	29	29	29	29	29	29	29	29	29	29
facial expr laughter	Correlation Coefficient	-,020	-,197	-,053	,083	-,032	,059	-,236	-,669	,088	1,000	,023	-,121	-,317	-,279	-,308	-,181
	Sig. (2-tailed)	,920	,326	,795	,681	,881	,779	,219	,000	,651		,904	,533	,094	,142	,104	,347
	N	29	27	27	27	25	25	29	29	29	29	29	29	29	29	29	29
post lean upright	Correlation Coefficient	-,281	-,212	-,155	-,410	-,221	,323	-,237	-,186	,449	,023	1,000	-,302	,061	-,257	,110	-,088
	Sig. (2-tailed)	,140	,287	,440	,034	,289	,115	,217	,334	,014	,904		,111	,752	,178	,569	,650
	N	29	27	27	27	25	25	29	29	29	29	29	29	29	29	29	29
post lean foreward	Correlation Coefficient	,123	,457	,060	-,517	-,052	,048	,117	,426	-,618	-,121	-,302	1,000	-,375	,378	,330	,618
	Sig. (2-tailed)	,527	,017	,764	,006	,805	,821	,547	,021	,000	,533	,111		,045	,043	,081	,000
	N	29	27	27	27	25	25	29	29	29	29	29	29	29	29	29	29
post lean backward	Correlation Coefficient	,060	-,246	,063	,160	,052	-,308	,134	,107	-,063	-,317	,061	-,375	1,000	,358	,035	,003
	Sig. (2-tailed)	,756	,217	,755	,425	,807	,134	,487	,582	,745	,094	,752	,045		,057	,858	,988
	N	29	27	27	27	25	25	29	29	29	29	29	29	29	29	29	29
head move nodding	Correlation Coefficient	,244	,188	,298	-,097	-,161	-,282	,155	,438	-,429	-,279	-,257	,378	,358	1,000	-,202	,388
	Sig. (2-tailed)	,203	,347	,131	,629	,442	,172	,422	,018	,020	,142	,178	,043	,057		,293	,037
	N	29	27	27	27	25	25	29	29	29	29	29	29	29	29	29	29
head move shaking	Correlation Coefficient	,024	,378	-,365	-,488	,246	,004	,332	,326	-,484	-,308	,110	,330	,035	-,202	1,000	,455
	Sig. (2-tailed)	,900	,052	,061	,010	,236	,985	,078	,084	,008	,104	,569	,081	,858	,293		,013
	N	29	27	27	27	25	25	29	29	29	29	29	29	29	29	29	29
head move orientation	Correlation Coefficient	,167	,043	-,031	-,641	-,272	-,475	,319	,324	-,547	-,181	-,088	,618	,003	,388	,455	1,000
	Sig. (2-tailed)	,386	,832	,880	,000	,189	,016	,091	,086	,002	,347	,650	,000	,988	,037	,013	
	N	29	27	27	27	25	25	29	29	29	29	29	29	29	29	29	29

Appendix C

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Gender[b]	.	Enter

a. Dependent Variable: ExpLeef

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,074[a]	,006	-,031	,67881	,006	,150	1	27	,701

a. Predictors: (Constant), Gender

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,069	1	,069	,150	,701[b]
	Residual	12,441	27	,461		
	Total	12,510	28			

a. Dependent Variable: ExpLeef

b. Predictors: (Constant), Gender

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	5,207	,477		10,908	,000	4,227	6,186
	Gender	-,106	,272	-,074	-,388	,701	-,665	,453

a. Dependent Variable: ExpLeef