# The influence of leaders' verbal and nonverbal behavior on perceived leadership effectiveness

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**Silent Meaning**

*The word not spoken*
 *goes not quite unheard.*
*It lingers in the eye,*
*in the semi-arch of brow.*
*A gesture of the hand*
*speaks pages more than words,*
*The echo rests in the heart*
*as driftwood does in sand,*
*To be rubbed by time*
*until it rots or shines.*
*The word not spoken*
*touches us as music*
*does the mind.*

**Abstract**

The aim of this MSc thesis is to examine what verbal and nonverbal human behaviors, displayed by leaders in regularly held staff meetings, influence perceived leadership effectiveness. In order to do so, the verbal and nonverbal behaviors of 45 leaders in regularly held staff meeting of a Dutch public organisation were video-recorded and coded. The degree of perceived effectiveness of the leaders was measured by followers and experts, using items from the so-called MLQ. Findings indicate differences in the types of behaviors that influence follower and expert ratings of leadership effectiveness. The followers' perceptions of their leadership effectiveness seem influenced by the leaders' gazing behavior and the frequency of displaying so-called adaptors. Expert ratings of leadership effectiveness appeared influenced by hand gestures, facial expressions and adaptors. The thesis ends with four major recommendations for future research in this area.

*Keywords: Effective leadership, nonverbal behavior, perceived leadership effectiveness, communication, leadership behavior*

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## 1. Introduction

If one asks a group of managers the question "What do effective leaders do?" it is likely to hear a variety of answers. The amicable answer to the question "What *should* effective leaders do?" is - Leaders should get results. Today, the topic of leadership is omnipresent in management press and management-related research and remarkably result-driven (Goleman, 2000; Yukl, 2012; Hoogeboom & Wilderom 2015a; Noureddine, 2015). Leaders should set strategies, motivate, create a mission, build a culture and most importantly - be effective (Goleman, 2000). Scholars have focused on which leadership styles are most effective and how to coach, train and improve leadership skills to get results. In the past years, behavioral leadership research has gained increased traction amongst management scholars (e.g. Hoogeboom & Wilderom, 2015a; Yukl, 2008; Yukl, 2012). However, little is known about which behaviors contribute to effective leadership practices. Extant literature on nonverbal behavior is scattered across several fields such as communication, gender studies, social psychology and criminology (Bonaccio, 2016).

Management scholars have yet to notice the importance of nonverbal behavior in the organisational context and most importantly, in reference to leadership. According to Stein (1975), communication abilities *and* nonverbal behavior play an important role in leadership. It has been suggested that nonverbal communication is of higher importance than verbal communication in the leadership context because individuals in leadership positions assert their power and authority verbally and nonverbally to persuade followers (Darioly & Mast, 2014). Thus, a holistic approach is required in order to investigate verbal and nonverbal leadership behavior conjointly, rather than treating both as mutually exclusive concepts that influence the perceived leadership behavior per se.

By definition, nonverbal communication is "the sending and receiving of thoughts and feelings via nonverbal behavior" which is organized into a typology of codes (Ambady & Weisbuch, 2010; p. 465). These codes are systematic means through which meanings are encoded, transmitted, perceived and eventually decoded (Burgoon, Guerrero & Manusov, 2011). Albeit the clear distinctions between nonverbal and verbal behavior, both concepts are interrelated in several ways. Nonverbal behavior can repeat, substitute, complement, accent or contradict to verbal behavior (Richmond & McCroskey, 2004).

Evidently, the leadership literature is lacking insight into leaders' precise behavioral repertoire to increase leadership effectiveness (Wilderom & Hoogeboom, 2015a) and how to apply nonverbal as well as verbal behavior to improve perceived leadership effectiveness. Leadership effectiveness is an important pillar of the organisation's competitiveness (Kumari, Usmani, Hussain, 2015; Khan & Anjum, 2015). Moreover, leadership effectiveness is a crucial factor influencing team effectiveness and organisational performance (Zaccaro, Rittman & Marks, 2001). Extant literature indicates that leaders' behavior has a crucial influence on leadership effectiveness (e.g. DeRue, Nahrgang, Wellman, & Humphrey, 2011; Piccolo, Bono, Heinitz, Rowold, Duehr, & Judge, 2012). However, scholars have focused on leaders' verbal behavior when researching leadership effectiveness (e.g. Avolio & Bass, 1995, Yukl, 2012), neglecting the importance of nonverbal leadership behavior.

Therefore, this thesis aims to add yet another facet to the behavioral repertoire of effective leaders by investigating the relationship between nonverbal and verbal behavior and perceived leadership effectiveness by answering the following research question: *What specific verbal and nonverbal behaviors displayed by leaders in regularly held staff meetings are inflencing perceived leadership effectiveness?*

This will be done by a quantitative multi-method study in a cross-sectional design utilizing three types of data sources, namely: leadership effectiveness ratings by experts, measures of perceived leadership effectiveness by followers and a fine-grained, systematic analysis of the leaders' verbal and nonverbal behavior using a previously developed coding scheme

## 2. Literature review

In the following sections the concepts of leadership effectiveness, leadership behavior and nonverbal behavior will be elaborated on to provide a basic understanding of the purpose of this thesis and the interrelation of these concepts. Firstly, extant literature on leadership effectiveness is reviewed with an emphasis on measurements of leadership effectiveness and the importance of context when researching a leader's effectiveness. Secondly, the most prominent theory on (verbal) leadership behavior, the transformational-transactional theory by Bass (1965), is explained to create a link between a leader's behavior and his or her effectiveness. Lastly, the concept of nonverbal behavior is explained to emphasize the importance of researching nonverbal behavior in the organisational context.

### 2.1. Leadership effectiveness

To be effective is one of the many virtues an exceptional leader should possess given that effective leadership is one of the main drivers for team effectiveness and organisational prosperity (Zaccaro, Rittman, & Marks, 2001). In this thesis, the multifactor leadership questionnaire (MLQ) is utilized to determine perceived leadership effectiveness. Hence, MLQ's definition of leadership effectiveness is applied. According to the MLQ, effective leaders lead their teams effectively, satisfy the needs of their subordinates, actively contribute to the organisation's goal and represent their teams in the organisation (Avolio & Bass, 1995).

Noureddine (2015) defined effective leadership as "the ability to influence, motivate, and direct others to achieve expected goals" (p. 65). Similarly, Yukl's (2012) definition of effective leadership is "the essence of leadership in organisations is influencing and facilitating individual and collective efforts to accomplish shared objectives" (p. 66). In essence, effective leadership depends on the leader's influence on his or her followers to achieve a common goal (Yukl, 2013).

Extant literature has debated about factors that predict and influence leadership effectiveness. A traditional perspective claimed that effectiveness is a nurtured characteristic of the leader's personality (Galton, 1980). Following this assumption, the trait paradigm has developed in the leadership literature. This so-called trait paradigm assigns effectiveness to particular traits, for example intelligence or extraversion (Judge, Piccolo, & Kosalka, 2009; Judge, Colbert, & Ilies, 2004; Judge, Bono, Ilies, & Gerhardt, 2002). This perspective has received much criticism due its neglect of a leader's actual behavior influencing leadership effectiveness (DeRue, Nahrgang, Wellman, & Humphrey, 2011). Based on the discussion on

the behavior paradigm of leadership effectiveness, several leadership theories have emerged such as e.g. transformational and transactional leadership theory (see 2.2). Current studies are supporting the behavior paradigm of leadership effectiveness, implying that a leader's behavior has more influence on effectiveness than his or her traits (e.g. DeRue et al., 2011; Piccolo, Bono, Heinitz, Rowold, Duehr, & Judge, 2012). Van Dun, Hicks and Wilderom (2016) define leadership behavior as "specific observable verbal and nonverbal actions of managers in interaction with their followers in an organizational setting" (p. 2). These implications provide a profound basis for the assumption that leadership effectiveness has its root cause in the leader's behavior and thus highlights the need to research which exact (verbal and nonverbal) behaviors influence leadership effectiveness. Leadership effectiveness is a crucial factor influencing team effectiveness and organisational performance (Zaccaro, Rittman & Marks, 2001) and is therefore contributing to the organisations' competitive advantage.

### 2.1.1 Measurement of leadership effectiveness

Leadership behavior has a significant influence on the organisation in terms of e.g. the organisational culture, effectiveness, satisfaction or financial performance (Peterson, 1997; Peterson, Smith, Martorana, & Owens, 2003). Thus, measuring leadership behavior with regard to effectiveness is of crucial importance for theoretical and practical purposes. The Multifactor Leadership Questionnaire (MLQ hereafter) developed by Bass (1985) is the most prominent measurement instrument for leadership behavior and its relation to e.g. effectiveness and satisfaction. It has been investigated by over 75 studies and published in a variety of journals, dissertations and chapters. Moreover, the MLQ has been applied in multiple organisational contexts in both, private and public organisations, such as e.g. manufacturing companies, the military, educational institutions (Lowe et al., 1996). The MLQ measures a leader's behavioral constructs based on perceptions of followers, peers and supervisors (Hogan, Curphy, & Hogan, 1994). Conclusively, the MLQ has received criticism due to its lack of objectivity when utilizing perceptions as measurement of effectiveness (Yukl, 1999; Van der Weide & Wilderom, 2004). Moreover, studies that have only been using subordinate perceptions of effectiveness have been "criticized on the basis of mono-method bias" meaning that previous studies have solely relied on one source to measure the construct of effective leadership behavior (Lowe et al., 1996, p. 394; Avolio, Yammarino, & Bass, 1991; Bass & Avolio, 1989).

**2.1.2. Perceived leadership effectiveness**

As alluded in the preceding paragraph, operationalizing followers' perceptions as measurement of leadership effectiveness has received criticism in the past. Earlier studies have found that perceived estimates of behaviors are significantly biased by the perceivers' personal characteristics, cultural backgrounds and experiences (Brown & Keeping, 2005; Hoogeboom & Wilderom, 2015; Shondrick, Ding, & Lord, 2010; Srull & Wyer, 1989). Individuals are constrained by several factors to objectively rate leadership behavior. Rating an individual's behavior is a highly complex cognitive task (Landy & Farr, 1987), which leads the rater to reduce the complexity of the task by relying on "subjective, prototypical representations" (Hoogeboom & Wilderom, 2015, p. 385). Srull and Wyer (1989) emphasize that the process of individuals to form an impression involves two steps: the processing of information based on memories and the transformation of information into an evaluation. This transformation is based on affect, implying that the cognitive task of rating one's behavior is in fact a social judgement (Srull & Wyer, 1989). Another factor distorting perceptual ratings of leadership behavior is the fact that individuals "select behavioral information in line with their own pre-observational impressions" (Hoogeboom & Wilderom, 2015, p. 385). Evidently, individuals have idiosyncratic opinions of what constitutes an effective leader (Shondrick, Dinh, & Lord, 2010). Therefore, individuals "make use of cognitive processing, in which they reduce the complexity of a highly complex phenomenon such as behavior by giving a similar set of attributions to a particular observed object" (Hoogeboom & Wilderom, 2015, p. 385), resulting in several prototypical leader attributes (Shaw, 1990). Examples of prototypical attributes of (effective) leadership are: emphasizing goals, propose solutions, exercise influence (Lord, Foti, & De Vader, 1984), sensitivity, charisma, intelligence, attractiveness, strength (Offermann, Kennedy, & Wirtz, 1994) and dedication, honesty, determination (Epitropaki & Martin, 2004). Hence, individuals are prone to assign perceptions of leadership behavior to an "intrinsically held prototypical image of a leader" (Hoogeboom & Wilderom, 2015, p. 386; Foti & Luch, 1992; Sy, 2010).

Conclusively, Hoogeboom and Wilderom (2015) emphasize that "*perceptions* of behavior do not accurately reflect *actual* behaviors" (p. 382). Following this assumption, results of studies applying these so-called *behavioral recall ratings* are generally influenced by a measurement error (Bono & Judge, 2004; Murphy & DeShon, 2000). Hoogeboom and Wilderom (2015) researched perceived behavioral ratings in staff meetings and the deviation of actual behavior from perceived leadership behaviors by using precise video-based

assessments of the leaders' behavior. The results show that perceivers were not able to accurately assess the leaders' behavior in terms of effectiveness during staff meetings (Hoogeboom & Wilderom, 2015).

Considering these insights, it might be controversial to apply the MLQ and researching perceived leadership effectiveness if behavioral recall ratings are evidently not reflecting actual leader behaviors. However, to justify the choice of measurement it is of crucial importance to clarify the context and aim of this thesis. The aim of this thesis is to add another facet to the behavioral repertoire of effective leaders by investigating the relationship between nonverbal and verbal behavior and perceived leadership effectiveness. In essence, the goal is to identify verbal and nonverbal behaviors that influence followers to perceive the leader as effective. As elaborated in preceding paragraphs, Noureddine (2015, p. 65) defines effective leadership as "the ability to influence, motivate, and direct others to achieve expected goals". Similarly, Yukl (2012, p. 66) describes effective leadership as "influencing and facilitating individual and collective efforts to accomplish shared objectives". The emphasis in these definitions lays on the leaders' influence on their followers. The foundation for this influence is explained by the social exchange theory. The social exchange theory (1964) implies that "behavior by one party in an exchange relationship engenders a felt obligation to respond in kind to the other party, conforming to the norm of reciprocity" (Baran, Shanock, Rogelberg, & Scott, 2012, p. 333). As the focal point of this study lays on leaders and their followers, the leader-member exchange (LMX) theory is particularly relevant as is represents the social exchange between leaders and followers and indicates the quality of the relationship between leader and follower (Wayne, Shore, Bommer, & Tetrick, 2002).

Leader-member exchange follows a relationship-based approach of leadership by focuses on the quality of social exchange relationship between both entities (e.g. Berg, Grimstad, Škerlavaj. Černe, 2017; Dienisch & Liden, 1986; De Jong & Den Hartog, 2007; Graen & Uhl-Bien, 1995; Liden & Maslyn, 1998; Van Woerkom & Meyers, 2015). Graen and Uhl-Bien (1995) allude that „the centroid concept of the theory is that effective leadership processes occur when leaders and followers are able to develop mature leadership relationships (partnerships) and thus gain access to the many benefits these relationships bring" (p. 225). Thus, high quality leader-follower relationships create a basis of incremental influence (Katz & Kahn, 1978). However, due to differences in synergies of leader-member relationships, leaders deviate in leadership style depending on the relationship to the

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subordinate they are interacting with, resulting in different quality of leader-member exchanges (Dansereau, Graen, & Haga, 1975; Graen & Cashman, 1975; Liden & Graen, 1980; Graen, Novak, & Sommerkamp, 1982).

Earlier research suggested that the leader-member exchange theory is a unidimensional construct (Ridolphi & Seers, 1984; Seers & Graen, 1984; Wakabayashi, & Graen, 1984). Dieniesch and Liden (1986) were the first scholars to identify multiple dimensions of LMX, namely: perceived contribution, loyalty and affect. Liden and Maslyn (1998) found empirical evidence supporting the multidimensionality of the LMX, supporting the dimensions of Dienesch and Liden (1986) as well as adding a fourth dimension, professional support. Perceived contribution entails the "perception of the amount, direction, and quality of work-oriented activity each member puts forth toward the mutual goal" (Dienesch & Liden, 1986, p. 624). The construct of the perceived contribution dimension is in line with the MLQ's definition of leadership effectiveness. According to the MLQ, a leader is effective if he (1) leads his team effectively, (2) satisfies work-related needs, (3) contributes to the organisational goals and (4) represents his followers' interest (Kolesnikova & Mykletun, 2012; Avolio & Bass, 1995).

Conclusively, in the context of this thesis it is irrelevant if the actual leadership effectiveness deviates from the perceived leadership effectiveness. The followers' perception of their leader's behavior is the focal point as perceptions of their behaviors are the leaders' instrument to influence his or her followers to reciprocate displayed behaviors.

### 2.1.3 The importance of the meeting context

Critiques of extant literature on leadership behavior have called for a context driven approach towards researching leaders' behavior (e.g. Avolio & Yammarino, 1990; Bass, 1990; Bass & Avolio, 1995; Capelli & Sherer, 1991; Hunt, 1991; Rousseau, 1985; Salancik, Calder, Rowland, Leblebici, & Conway, 1985; Tosi, 1992; Yammarino & Bass, 1990; Yammarino & Dubinsky, 1992). Thus, it is remarkable that the context of leadership behavior has been neglected consistently in preceding studies. Several scholars have emphasized the need to research leadership behavior in staff meetings (Baran, Shanock, Rogelberg, Scott, 2012; Rogelberg, Shanock & Scott, 2012; Schwartzman, 1989). Therefore, this thesis aims to follow a context specific approach when researching leadership effectiveness by focusing solely on leader behavior in regularly held staff meetings.

Staff meetings are joint activities in which multiple participants engage in interactions facilitated by a leader (Clark, 1996; Wilderom & Hoogeboom, 2015). They serve a facilitating purpose for a variety of processes within the organisation, e.g. exchange of information, sharing of goals, decision making, identification of issues, brainstorming, agreeing on proposals (Kriesberg, 1950; Schwartman, 1989). While meetings may be generally perceived as unnecessary by employees, they play a vital role not only for the leaders, but for the organisation as a whole. Extant research found a significant relationship between meeting satisfaction and employees' overall job satisfaction, implying that meetings shape followers' perception of the company (Baran, Shanock, Rogelberg & Scott, 2012; Rogelberg, Allen, Shanock, Scott, & Shuffler, 2010). Moreover, followers attribute behaviors and attitudes of their leaders to their organisation (Eisenberger, Stinglhamber, Vandenberghe, Sucharski, & Rhoades, 2002).

Staff meetings are a crucial area for leaders to manifest their influence on followers in the everyday life in an organisation (Rogelberg et al., 2012; Schwartzmann, 1989). The behavioral impact of leaders behavior in regularly held staff meetings is significant for their followers' satisfaction, well-being and most importantly their perceptions (Baran et al. 2012; Perkins, 2009; Rogelberg, 2006; Rogelberg, Allen, Shanock, Scott, & Shuffler, 2010; Rogelberg, Scott, Kello, 2007). Baran and colleagues posit that "meeting are important processes through which superior–subordinate relationships are constituted, reified, and potentially altered" (p. 331). Hence, leader behavior within staff meetings are forming the "global perceptions of the supervisor" (Baran et al., 2012, p. 334). As expressed in the

previous paragraph, perceptions are of crucial importance for the leader's influence on his followers. The basis of the formation of a global perception of the leader may be explained by the relational system theory. According to the relational system theory (Watzlawick, Beavin, & Jackson, 1967) messages conveyed by leaders have two dimensions: content and relationship as Watzlawick and colleagues posit: "Every communication has a content and relationship aspect such that the latter classifies the former and is therefore metacommunication" (p. 54). Hence, every message conveyed by leaders in meetings does not only express content, but provides indicators of leaders' relationships with their followers. Reason being is the leaders' unconscious connotation of his or her motivation as well as the attitude towards the receivers while conveying a message (Baran et al. 2012). Hence, leader behavior displayed in meetings provide indications not only about the leader, but also the relationship with his followers (Baran et al. 2012). The relational system theories implies that "one cannot not communicate" and thus assumes that that the leaders' actions during regularly held staff meetings convey subconscious messages to followers.

**2.2 Verbal Behavior**

Leadership behavior is a prominent topic in the leadership literature. The most well-known leadership behavior model is the "transformational-transactional" model. Burns (1978) was the first scholar to propose the transformational and transactional leadership behavior dimensions (Lowe, Kroeck & Sivasubramaniam, 1996). Drawing up on extant research on character traits, leader-member exchange theories and leadership styles, he distinguished between two leadership behavior dimensions based on his qualitative analysis of biographies of political leaders (Lowe et al. 1996). For the last four decades, both leadership behaviors have been researched extensively by several scholars (Bass 1985; Conger & Kanungo, 1987, 1988; House, 1977; Podsakoff, McKenzie, Moorman, & Fetter 1990; Tichy & Devanna, 1986; Trite & Beyer, 1986; Yukl, 1989). Evidently, as research has progressed, different definitions, interpretations and assumptions about the transformational-transactional model have been proposed.

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## 2.2.1 Leadership Behavior Theories

According to Burns (1978), transactional and transformational leadership behaviors are distinctive, mutually exclusive constructs. Transformational leadership behaviors include intellectual stimulation, the recognition and consideration of individual differences amongst followers as well as sharing a collective vision with followers (Lowe et al., 1996). The transformational leader increases the followers' motivation and morality through engagement without the instrumental exchange (Burns, 1978; Lowe et al., 1996). On the contrary, transactional leaders engage in and initiate contact with followers to "exchange something of values, such as rewards for performance, mutual support and bilateral disclosure" (Lowe et al., 1996, p. 386) upon display of the leader's desired behaviors (Burns, 1978; Waldman, Bass, & Einstein, 1987).

Bass (1985) characterizes transactional leadership behavior as risk-avoidant, control oriented, focused on time constraints and efficiency and most effective in stable and predictable environments (Bass, 1985, Lowe et al., 1996). Transactional leadership behavior is exemplary for "an equitable leader-member exchange relationship where the leader fulfills the needs of followers in exchange for performance meeting basic expectations" (Bass, 1985; Graen & Cashman, 1975; Lowe, et al 1996, p. 387). On the other hand, transformational leadership behavior is opportunistic, risk-taking and innovative (Bass, 1985). Whereas transactional leaders are reactive to environmental circumstances, transformational leaders are aiming to shape and create them proactively (Avolio & Bass, 1988).

As opposed to Burn's assumptions, Bass (1985) claims the transformational and transactional leadership behaviors as complementary rather than polar constructs. He associated both leadership behaviors with the leader's "achievement of desired goals and objectives" (Lowe et al., 1996, p. 387). Bass, Avolio and Goodheim (1987) advance the proposition that the transformational leadership behavior is complementing transactional leadership behavior by claiming that transformational behavior is ineffective if the leader's transactional behavior is omitted. Thus, in order to be most effective, a leader must engage in transactional and transformational behaviors (Hoogeboom & Wilderom, 2015). This assumption has emerged the so-called "augmentation hypothesis" (Avolio, Jung, & Berson, 2003; Bass, 1985; Bass, 1999; Bass & Avolio, 1994; Hoogeboom & Wilderom, 2015; Howell & Avolio, 1993; Waldman, Bass, & Yammarino, 1990)

Bass' (1985) transformational-transactional leadership theory has received much attention in the leadership literature (Antonakis & House, 2014; Antonakis, Bastardoz, Liu, & Schriesheim, 2014; Gardner, Lowe, Moss, Mahoney, & Cogliser, 2010). However, the theory has also received criticism. Scholars have criticized the empirical overlap of transformational and transactional leadership behaviors (Hinkin & Schriesheim, 2008; Michel, Lyons, & Cho, 2011; Rafferty & Griffin, 2004; Rowold & Heinitz, 2007; Van Knippenberg & Sitkin, 2013; Yukl, 2006). Furthermore, critiques have emphasized the restricted behavioral facets in the repertoire of Bass' transformational-transactional leadership theory (DeRue, Nahrgang, Wellmann & Humphrey, 2011; Michel et al., 2011; Yukl, 1999). In fact, leaders display a variety of behavior that are not accounted for in Bass' theory such as seeking information (29.1%), giving information (21.7%), testing understanding (15.2%), summarizing (11.5%), procedural proposals (9.6%), content proposals (5.8%), supporting (3.2%), disagreeing (2.0%), defending/attacking (1.8%) and building (0.1%) (Rackham & Morgan, 1977). Hence, when researching leadership behavior a wide range of behaviors should be taken into consideration (Avolio, Bass & Jung, 1999; Bass, 1985, 1998; Bass & Avolio 1994). Moreover, scholars have criticized the oversimplification and discounting of the context and the omission of situational characteristics in which the researched leadership behavior was embedded (Avolio & Yammarino, 1990; Bass, 1990; Bass & Avolio, 1995; Capelli & Sherer, 1991; Hunt, 1991; Rousseau, 1985; Salancik, Calder, Rowland, Leblebici, & Conway, 1985; Tosi, 1992; Yammarino & Bass, 1990; Yammarino & Dubinsky, 1992).

**2.2.2 Functions of Verbal Leadership Behavior**

In response to the criticism of the transformational-transactional model, scholars have offered a variety of additions to the behavioral repertoire (e.g. Martin, Liao & Campbell ,2013; Pearce & Conger, 2003; Yukl, Wall & Lepsinger, 1990; Yukl, 1999; Yukl, Gordon & Taber, 2002. Yukl (2012; p.66) stresses the importance of the function of leadership as "influencing and facilitating individual and collective efforts to accomplish shared objectives". He distinguishes between four meta-categories and 15 specific component behaviors to identify factors that influence leadership effectiveness (appendix A). The extent to which a leader fulfills these behaviors shapes the organisational environment and the leader's influence on followers' perceptions, commitment and effectiveness (Otara, 2011; Mahdi, Mohd, & Almsafir, 2014; Yukl, 2012) This thesis will focus on three meta-categories *task-oriented*, *relation-oriented* and *counterproductive* leadership behavior.

## 2.3 Verbal Leadership Behavior

Yukl (2012) distinguished between four meta-categories and 15 specific component behaviors to identify factors that influence leadership effectiveness (appendix A). This thesis will focus on the following three meta-categories of Yukl's framework: *task-oriented, relation-oriented* and *counterproductive* leadership behavior.

Task-oriented behaviors have the purpose "to ensure that people, equipment, and other resources are used in an efficient way to accomplish the mission of a group or organization" (Yukl, 2012, p. 69). There are four related component behaviors for that meta-category, namely: Clarifying, Planning, Monitoring and Problem solving. *Clarifying* behavior is applied to ensure that people have a clear understanding of what is expected their task, how they should accomplish their tasks successfully and the expected results. *Planning* behavior refers to scheduling activities and defining tasks in order to accomplish objectives as efficiently as possible. *Monitoring* refers to the supervisory function of leaders and their assessment whether a task has been carried out adequately. *Problem solving* includes behavior displayed to handle disruptions and undesirable member behavior (Yukl, 2012).

Relation-oriented behaviors are referred to as behaviors that "enhance member skills, the leader-member relationship, identification with the work unit or organisation, and commitment to the mission" (Yukl, 2012, p. 71). The meta-categories of relation-oriented behaviors are: *Supporting*, *Developing*, *Recognizing* and *Empowering*.

*Supporting* implies incentives to build a cooperative relationship and helping members to cope with challenges whereas the *Developing* component aims to increase the members' skills and confidence. The behavioral component *Recognizing* appraisal and appreciation of members and *Empowering* is aiming to increase the members' autonomy and the members' inclusion in the decision making process (Yukl, 2012).

Wilderom and Hoogeboom (2015) are stressing the importance of including counterproductive behaviors in the leaders' behavioral repertoire. Einarsen, Aasland and Skogstad (2007) define counterproductive behavior as "the systematic and repeated behaviour by a leader, supervisor or manager that violates the legitimate interests of the organisation by undermining and/or sabotaging the organisation's goals, tasks, resources, and effectiveness and/or motivation, well-being or job satisfaction of subordinates" (p. 208). Counterproductive behaviors are equally as present as task-, and relation-oriented behaviors (Schyns & Schillings, 2013) and ought to have a greater negative influence on employees than task-oriented and relation-oriented behaviors (Baumeister, Bratslavsky, Finkenauer &

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Vohs, 2001; Tepper, Duffy, Henle & Lambert, 2006). Examples of such counterproductive behavior are "unsupportive managerial work behaviors" (Wilderom & Hoogeboom, 2015, p. 384) that communicate a disinterest in their followers and thus are perceived as disrespectful by followers (De Hoogh & Den Hartog, 2008; Rooney & Gottlieb, 2007). Conclusively, based on the literature it is expected to find the following:

**H1.** Relation-oriented and task-oriented verbal behavior displayed by the leader in regularly held staff meetings are positively related to perceived leadership effectiveness.

**H2.** Counterproductive verbal behavior displayed by the leader in regularly held staff meetings is negatively related perceived leadership effectiveness.

**2.4 Nonverbal Behavior**

Nonverbal behavior is invisible to the unconscious eye, yet it is ubiquitous in human interaction and has no lesser meaning than verbal behavior. It plays an important role in the interpersonal communication and accounts for up to 66% of the meaning conveyed between individuals in social interactions (Birdwhistell, 1970; Crane & Crane, 2010). In earlier literature, the power of nonverbal behavior has been underestimated by several scholars (e.g. Huxley, 1954). However, research has shown that in case of contradictions between verbal messages and nonverbal behavior, adults rely on the messages conveyed by nonverbal behavior to judge the senders' attitudes and feelings (Burgoon, Guerrero & Floyd, 2010). The terms nonverbal behavior and nonverbal communication are often used interchangeably. Thus, definitional issues will be discussed to provide a common understanding of the terminology of nonverbal communication and nonverbal behavior to proceed with this thesis. There are many similar, overlapping definitions of nonverbal behavior and nonverbal communication (table 1). Therefore, it is significant for this thesis to clarify what nonverbal communication constitutes.

Table 1 *Definitions of NVB Behavior and NVB Communication*

| Nonverbal behavior/communication is… | Author |
|---|---|
| "the study of behaviors other than words that create shared meaning between people who are interacting with one another" | Hale, 2003 |
| "any kind of expression, gesture or symbolic behavior that is either intended to convey meaning or happens to convey meaning" | Burleson, 2003 |
| "intentional behavior that's used to symbolically convey an idea" | Altarriba, Basnight, & Canary, 2003 |
| "the sending and receiving of thoughts and feelings via nonverbal behavior" | Ambady & Weisbruch, 2010 |
| "any other behavioral interaction other than speech content" | Darioly & Mast, 2014 |
| "everything we do except the words that we use in our face to face interactions, so it includes facial expressions, gestures, eye contact . . . even our artifacts, the clothes that we wear, the rings and jewelry that we carry around with us" | Greene, 2003 |
| "any numerical, verbal, graphical, pictoral, or other sensory information which is available to a judge for potential use in forming judgement" | Bonaccio, O'Reilly, Chiocchio, 2016 |

In congruence with most scholars' definitions, Burgoon, Guerrero and Floyd (2010) emphasize that verbal communication is "the process of creating meanings between senders and receivers through the exchange of signs and symbols. Messages originate as sender cognitions that are encoded (transformed into signals) through commonly understood codes and decoded by receivers (the signals must be recognized, interpreted, and evaluated)" (p. 12). Thus, following this assumption, nonverbal communication should include similar properties. There are multiple perspectives on what defines nonverbal communication.

One perspective emphasizes that when defining nonverbal communication it is necessary to differentiate between the concepts of communication, behavior and information (figure 1).
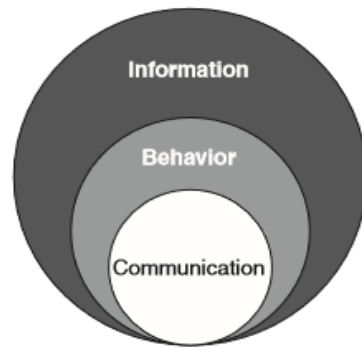
Figure 1 *The relationship of information, behavior and communication*. *Burgoon, J.,Guerrero, L. and Floyd, K. (2010). Nonverbal communication. Pearson Education.*

Information are "all stimuli in the environment that reduce uncertainty of the organism […] to gain predictability about the environment" (Burgoon et al., 2010, p. 12). If humans become the source of information it is often deemed as communication, for example, close proximity during interpersonal communication may signify hearing issues or a sneeze may be symptomatic for a cold (Burgoon et al., 2010). Without any contextual knowledge, these behaviors should be labelled as informative rather than communicative. Following this assumption, an individual's involuntary and passive display of nonverbal behavior is merely classified as behavior or information, but not as communication (Burgoon et al., 2010). This implies that nonverbal behavior is characterized as communication if the individual is displaying the behavior intentionally. Self-evidently, the prerequisite of intent has been criticized heavily (e.g. Andersen, 1998a; Kellermann, 1992; Motley, 1991; Stamp & Knapp, 1990) as it lacks clarification as to what characterizes intentional behavior and to what extent nonverbal behavior is consciously displayed (Burgoon et al. 2010).

The receiver-orientation perspective follows a contrasting approach, implying that nonverbal behavior classifies as communication if the receiver interprets displayed behavior as a message, hence omitting the intent of sender (Andersen, 1991). Accordingly, each behavior displayed by individuals may be communicative if the receiver draws inference from it (Burgoon et al., 2010). Following this perspective, studying nonverbal communication is nearly impossible as it would results in researching trivial behaviors such as e.g. sneezing your nose, as Nonverbal communication expert Maureen Keeley alludes – "I'm not interested in people scratching their head because they have an itch" (Keeley, 2003).

The message-orientation perspective draws upon a distinction between nonverbal behavior and nonverbal communication (Burgoon & Hoobler, 2002; Burgoon et al., 2010). It follows the definitions of Wiener, Devoe, Rubinow and Geller (1972): Nonverbal communication "implies (a) a socially shared signal system, that is, a code, (b) an encoder

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who makes something public via that code, and (c) a decoder who responds systematically to that code" (p. 186). Accordingly, not all nonverbal behaviors classify as communication. Thus, according to the message-orientation perspective, behaviors are communicative if: "(1) are typically sent with intent, (2) are used with regularity among members of a given social community, society, or culture, (3) are typically interpreted as intentional, and (4) have consensually recognized meanings." (Burgoon et al., 2010, p. 16). In this vein, behaviors are "typically" intended regularly, meaning that intent is not a necessity if the sender is displaying said behaviors frequently when conveying a message (Burgoon et al., 2010).

In this thesis the message-orientation perspective will be applied to study nonverbal behaviors in the organisational context. This means, a distinction is being made between nonverbal behavior and nonverbal communication. However, in order to avoid confusion for the reader and maintain the existing connection between those interrelated concepts, the terms communicative nonverbal behavior and non-communicative nonverbal behaviors are used.

### 2.4.1 Communicative and Non-communicative Nonverbal Behavior

Individuals have the ability to communicate potential meaning through nonverbal behavior by so-called cues (Bonaccio et al., 2016; Burgoon et al., 2011). In this vein, it is significant to stress the terms "ability" and "potential", referring back to the aforementioned definitions as to what constitutes communicative and non-communicative nonverbal behaviors.

Cues are "any numerical, verbal, graphical, pictorial, or other sensory information which is available to a judge for potential use in forming a judgment" (Cooksey, 1996, p. 368). Nonverbal cues can be divided into speech-related and speech-unrelated nonverbal behavior. Speech-related NVB includes the individuals' tone of voice, speech modulation and speech duration whereas speech-unrelated NVB encompasses visual attention, facial expressions, body-movements, posture, touch, mode of dress and walking style (Knapp & Hall, 2010). The focus of this thesis lays on speech-related nonverbal cues.

Nonverbal cues are expressed through different channels of nonverbal codes. The codes of nonverbal behaviors are "the systematic means through which meanings are created (encoded), transmitted, perceived, and interpreted (decoded)" (Burgoon et al., 2011, p. 240). Nonverbal codes range from micro codes (e.g. posture, gazing) to macro codes (e.g. display of warmth; Ambady & Weisbruch, 2010) and are grouped into three categories: body codes

(e.g. gestures, facial expressions), sensory and contact codes (e.g. touching) and spatiotemporal codes (e.g. the use of personal space; Bonaccio et al, 2011). Table 1 in appendix B depicts the enumerated nonverbal codes including explanations. This thesis focuses on body codes as medium for (communicative and non-communicative) nonverbal behaviors. In the following section, these codes will be elaborated on.

### 2.4.2 Body Codes

Body codes can further be divided into three categories: kinesics, physical appearance and oculesics. In order to research the influence of nonverbal behaviors the focal points in this thesis are kinesics and oculesics.

### 2.4.2.1 Oculesics

Oculesics include the behavior of the eye, namely: eye gaze, eye contact, ocular expressions as well as blinking and pupil dilation (Bonaccio et al. 2016; Harrigan, 2005). Whereas oculesics such as blinking or pupil dilation are displayed involuntarily, eye contact can be controlled and "is culturally prescribed and part of conversational norms" (Bonaccio et al., 2019, p. 7; Matsumoto & Hwang, 2013). An individual's gaze fluctuates towards and away from conversational partners (Krauss, Chen & Chawla, 1996). This gazing behavior has been assigned semantic information, amongst others, the expression of intimacy (e.g. Argyle & Cook, 1976; Exline, 1972; Exline, Gray, & Schuette, 1985; Russo, 1975). On the other hand, researchers claim the frequent fluctuation of a speaker's gaze is a result of combining "two complex tasks speakers must manage concurrently: planning speech, and monitoring the listener for visible indications of comprehension, confusion, agreement, interest, etc." (Krauss et al., 1996, p. 3, Brunner, 1979; Duncan, Brunner, & Fiske, 1979). If the planning of speech requires great cognitive attention, "speakers avert gaze to reduce visual information input, and, when those demands moderate, they redirect their gaze toward the listener, especially at places where feedback would be useful" (Krauss et al., 1996, p. 3). Following this assumption, a high frequency of gaze aversion may draw inference on the speakers' difficulty in formulating and planning his speech. On the contrary, the lack of gaze aversion at certain conjunctions in combination with overly fluent speech may hint to a lack of spontaneity in articulation (Krauss, Chen & Chawla, 1996). Therefore, oculesics, more specifically the eye gaze, are included in this research as communicative nonverbal behaviors.

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## 2.4.2.2 Kinesics

Kinesics are communicated through body movements, such as gestures, postures and facial expressions (Burgoon et al., 2011). Ekman and Friesen (1969) identified five categories of kinesics: adaptors (touching), emblems (gestures with social understood meaning e.g. thumbs-up), illustrators (Hand gestures), regulators (e.g. nods) and lastly facial expressions. In this thesis, three categories of kinesics will be applied to draw conclusions on the influence of leaders' nonverbal behavior on perceived leadership effectiveness, namely: facial expressions, illustrators and adaptors.

Charles Darwin (1872) attempted to answer the question: "Why do facial expressions take the forms they do?" over a century ago. His conclusion suggests that facial expressions are rudimentary habits manifested in our evolutionary history. Examples of such expressions are e.g. wrinkling the nose when smelling unpleasant odors or pinch the eyes when in rage. Over time, facial expressions have accumulated a communicative function in terms of providing information about an individual's internal state (Krauss et al., 1996). In general, facial expressions are displayed involuntarily (for example reddening) and thus even have the ability to reveal deception (Ekman & Friesen, 1974; Vrij, 2006). However, there is a variety of facial expressions that can indeed be controlled and even trained e.g. leaders displaying exuberant facial expressions to attract followers (Darioly & Schmid Mast, 2014; Burgoon, Birk, & Pfau, 1990). In this thesis the focus is laid on smiling behavior as facial expressions to research the influence of NVB on perceived leadership effectiveness. Although it has been mentioned that most facial expressions are displayed involuntarily, smiling is assumed to be displayed controllably (Krauss et al., 1996). Henceforth, smiling behavior is considered communicative nonverbal behavior in this thesis.

Illustrators and adapters are referred to nonverbal behavior expressed through hand movements. In this vein it is once more necessary to draw distinctions between seemingly interrelated, yet distinctive concepts. Even though all illustrators are considered hand movements, not all hand movements qualify to be labelled as illustrators. Illustrators may be divided into symbolic gestures (e.g. thumbs-up, raised fist) and conversational gestures (hand movements accompanied by verbal expression) (Krauss et al., 1996). Adapters are merely hand movements that aim to manipulate one's own body or objects and are thus unrelated to speech content or verbal behavior (Ekman & Friesen, 1969; Ekman & Friesen, 1972). All three concepts have different degrees of relation "to the semantic content of the speech they

accompany", also labelled as lexical movements (Krauss et al. 1996, p. 6). Similarly, the three concept also vary in the degree of rhythm, repetition, simplicity and consistency in hand movements (also referred to as batons), also labelled as motor movements (Hadar, 1989a; Hadar & Yadlin-Gedassy, 1994). Figure 2 illustrates the placement of each concept on the lexical and motor movement continuum.
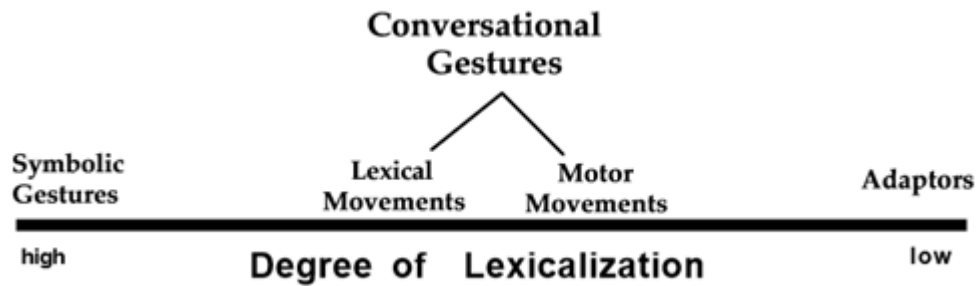


Figure 2 *The Degree of Lexicalization of hand movements. Krauss, R. M. Chen, Y. and Chawla, P. (1996) Advances in experimental social psychology (pp. 389-450). San Diego, CA: Academic Press.*

Symbolic gestures are used with intent, serve a communicative purpose and vary across cultures (Ekman, 1976). Although they serve a communicative purpose, speech is not a prerequisite. Symbolic gestures are highly lexical, hence they may substitute speech. Considering the aim of this research symbolic gestures are thus not included. Conversational gestures are positioned in the middle of the lexicalization continuum. These gestures do coincide with speech as they relate to its semantic content, yet do not substitute it (Krauss et al., 1996). Lastly, adaptors are positioned at the end of the continuum. Adaptors are not considered gestures as they are neither intended nor perceived to convey semantic content. However, adaptors are transmitting information about and individual's "unconscious thoughts or feelings" (Krauss et al., 1006, p. 5; Mahl, 1956; Mahl 1968). Conclusively, conversational gestures (illustrators) are considered as communicative nonverbal behavior whereas adaptors are categorized as non-communicative nonverbal behavior in the context of this thesis.

Figure 3 illustrates the division of body codes into communicative and non-communicative nonverbal behaviors to study the influence of nonverbal behavior on leadership effectiveness in this thesis.

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Figure 3 *Division of Nonverbal behaviors in the context of this thesis*

**2.5 Functions of Nonverbal Behavior**

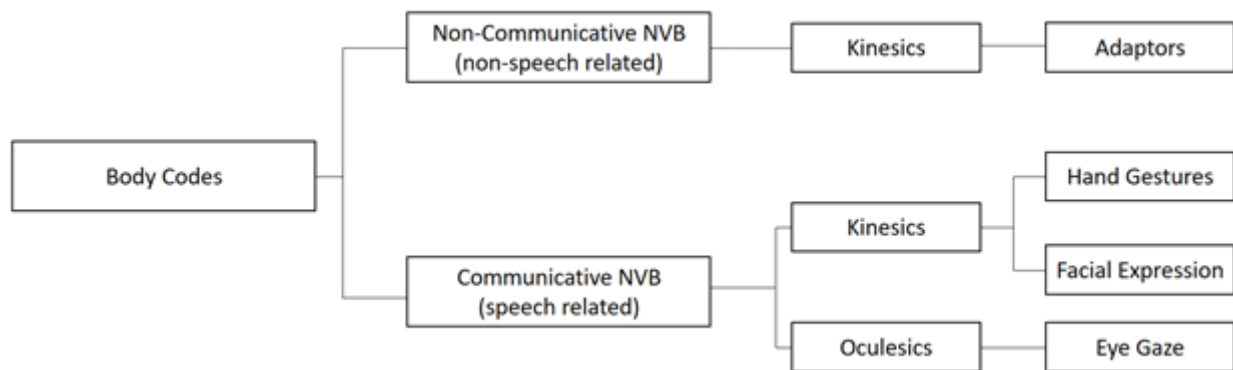In an organisational context, nonverbal behaviors have several functions. Bonaccio et al. (2016) identified five functions that NVB serve in the organisational life: 1. Display of personal attributes, 2. Exercise of social control and establishment of hierarchy, 3. Promotion of social functioning, 4. Foster high-quality relationships, 5. Display of emotional expression (p. 10). An explanation of each function is depicted in table 2 in appendix B.

*Display of personal attributes.* According to Goffman (1959), individuals are continually display signals, intentionally and unconsciously, and interpreted "as expressive of our underlying attributes" (Bonaccio et al. 2016, p. 10). Even when no nonverbal behaviors are displayed for the purpose of e.g. maintaining neutrality, this lack of expression may be interpreted as disinterest or remoteness (Keating, 2006). Although considered irrepressible (DePaulo, 1992), nonverbal behavior is controllable to a certain extent (Bonaccio et al., 2016). Hence, in the organisational context, nonverbal behaviors play an essential role in "impression formation and impression management" (Bonaccio et al., 2016, p. 13). Extant literature related to the topic of nonverbal behaviors in the organisational context focused on the impact on personnel decisions in terms of selection and performance appraisals.

*Exercise dominance and establish hierarchy.* Nonverbal behavior has the capacity to serve as a medium to communicate dominance and hierarchy (Burgoon & Dunbar, 2006; Hall, Coats, & Smith Lebeau, 2005; Ridgeway, Berger, & Smith, 1985). In general, "nonverbal cues of power are responded to with nonverbal cues that signify submission" (Bonaccio et al., 2016, p. 15). One prominent example of such nonverbal cues of power is the

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so called "Power Posture", which is significant for being physically expansive in terms of e.g. a straight stand with hands placed on the hips (Carney, Cuddy, & Yap, 2010; Park, Streamer, Huang, & Galinsky, 2013). Other nonverbal cues that are prone to exercise dominance and establish hierarchy are, amongst others: talking time and interruption (Mast, 2002), eye contact (Kleinke, 1986) and facial appearance (Olivola, Eubanks, & Lovelace, 2014; Spisak, Grabo, Arvey, & van Vugt, 2014).

*Promotion of social functioning*. Nonverbal cues may be operationalized to promote social functioning by displaying, for example, competence and persuasion (Driskell, Olmstead, & Salas, 1993). Extant research has shown that leaders "who exhibit charisma, enthusiasm, and capability" (Bonaccio et al. 2016, p. 17), which are attributes that may be communicated and enhanced by nonverbal cues (Bass, 1998; Conger & Kanungo, 1988; Tskhay, Xu, & Rule, 2014).

*Foster high-quality relationships*. Nonverbal behaviors has the function to "generate and maintain trusting and committed interpersonal relationships" (Bonaccio et al. 2016, p. 18) by creating meaningful interpersonal experiences. Examples of that is e.g. the self-expression through nonverbal cues that reveal vulnerability (Butler, Egloff, Wilhelm, Smith, Erickson, & Gross, 2003), immediacy and mimicry (Tickle-Degnen, 2006). Thus far, this function of nonverbal behavior in the organisational context has received little attention by scholars.

*Display of emotions*. The function of displaying emotions through nonverbal cues serves a variety of social purposes (Keltner & Haidt, 1999). First and foremost, the display emotions is relevant to each of the aforementioned function. Apart from that, this function is influences various social processes such as the influence on other's emotional experiences when engaging with individuals, which in turn has a significant impact on the social climate in the organisation. Moreover, nonverbal cues that display emotions of an individual give away information about the overall context (Bonaccio et al., 2016).

This thesis intends to add yet another function of nonverbal behavior in the organisational context by answering the main research question: *What specific verbal and nonverbal behaviors displayed by leaders in regularly held staff meetings are influencing perceived leadership effectiveness?*

In the following part, the communicative and non-communicative nonverbal behaviors as independent variables will be elaborated on in order to deduct the hypotheses for this thesis.

## 2.6 Nonverbal Leadership Behavior

In this research, four different body codes in the categories kinesics and oculesics are taken into account to investigate the relationship of nonverbal behavior on perceived leadership effectiveness, namely: *Hand gestures, Adaptors, Facial Expressions* and *Visual Attention*. In the following, the effects of nonverbal behavior in an organisational context are outlined and on the basis thereof hypotheses are deducted.

### 2.6.1 Hand Gestures & Adaptors

Extant literature has investigated the display of hand gestures in consideration of different classifications. In general, the majority of research in the gesture literature has focused on the relationship of speech and gestures (Alibali, Flevares, & Goldin-Meadow, 1997; Beattie & Shovelton, 2000, 2002; GoldinMeadow, 1999; Kelly & Church, 1998) or the speakers purpose and intent when displaying hand gestures (Alibali, Kita, & Young, 2000; Butterworth & Beattie, 1978; Feyereisen & Havard, 1999; Freedman, 1977; Hadar, 1989; Hadar & Butterworth, 1997; Krauss, Chen, & Chawla, 1996; Rime` & Shiaratura, 1991). As elaborated in the literature review, there are multiple categories of hand gestures that perform different functions as the perceivers' perceptions differ (Ekman & Friesen, 1969; McNeill, 1992). This thesis focuses on conversational hand gestures (illustrators) with a distinction between open palm (palms visible to receiver) and closed palm (palms not visible to receiver) gestures. These distinctions are in line with Kendon's (2004) findings. Kendon (2004) alludes that the lack of display of speakers' palms are negatively connoted as they convey impressions of denying, negating, interrupting or stopping conversations. On the other hand, open palm gestures are indicators of the speakers' openness and confidence as they are perceived as open, offering and receptive (Kendon, 2004). Moreover, extant literature elicits that the display of open palms persuades receivers to perceive the speaker as more immediate (Talley & Temple, 2015), persuasive (Poggi & Vincze, 2008), competent and dominant (Cuddy, Glick, & Beninger, 2011; Cashdan, 1998).

On the contrary, closed palm gestures are perceived as defensive gestures (Kendon, 2004, Talley, 2012). Argentin, Ghiglione and Dorna (1990) followed a more holistic approach by researching role of hand gestures displayed by politicians and the effect on perceptions of their persuasiveness. According to their findings, politicians were perceived as more persuasive when using many hand gestures. Extant research has not yet grasped the

opportunity to research the role of hand gestures in perceived leadership effectiveness (Mariccholio et al 2009).

The literature on the nonverbal meaning of clasped hands remains scarce. However, several studies imply that clasped hands convey a negative meaning. For example, prior work has shown that clasped hand gestures can signal negative characteristics, such as worry, tension, self-doubt or aggressive superiority (Blum, 1988). Moreover, clasped hands can also be seen as signals of annoyance, frustration and a negative attitude of the sender (Kahn, 1992).

Marciccholio and colleagues (2012) define adaptors as "hand movements of touching and manipulation, which include self-addressed, object-addressed or personaddressed hand movements" (p. 756). Although self-adaptors may be displayed during speech, they are not considered as communicative nonverbal behavior as they serve no purpose to underline semantics of speech and are unrelated to verbal behavior (Ekman & Friesen, 1969; Ekman & Friesen, 1972). In this thesis, the focus is laid on self-adapters (head and body) and object-adaptors. Several studies have found that self-, and object-adaptors are associated with anxiety, nervousness and deception (Henningsen, Valde, & Davies, 2005). Moreover, adaptors were to be found negatively related to the speaker's persuasiveness (Burgoon, Birk & Pfau, 1990; Argentin et al., 1990). Based on the literature, the following findings are expected:

**H3.** Displaying upward palm gestures by the leaders during regular staff meetings is positively related to follower perceptions of their leadership effectiveness.

**H4.** Displaying downward palm gestures, adaptors and clasped hands by the leader is negatively related to perceived leadership effectiveness.

**2.6.2 Facial Expressions**

Facial expressions in the context of this thesis are investigated on the basis of the leaders' smiling behavior. Extant literature on the influence of smiling behavior are contradictory as smiling ought to convey both positive and negative feelings (Landis 1926). Conclusively, smiling behavior may have bilateral influences on perceptions of leadership. The display of smiling behavior has been researched as signals of subordination and submissiveness (Freedman, 1979; Henley, 1977). However, experimental studies have failed to provide evidence of a significant relationship between authority and the display of smiling behavior (Dovidio, Heltman, Brown, Ellyson & Keating, 1988). Moreover, smiling has been researched with regard to differences between males and females. Keating and Bai (1986) proved that men who are smiling less are perceived as more dominant than men who display more smiling behaviors. On the other hand, smiling has been found to be associated with happiness (Halberstadt & Saitta, 1986), a mean to receive approval (Rosenfeld, 1996), an expression of embarrassment (Goldenthal, Johnston & Kraut, 1981) and leniency (LaFrance & Hecht, 1995). Clearly, there is scientific evidence of an influence of smiling behavior on perceptions. However, based on the lack of distinctness on the influence of smiling behavior in extant literature, the following findings are expected:

**H5.** Displaying smiling behavior by the leader is influencing perceived leadership effectiveness.

**H6.** Displaying neutral facial expressions (no mouth movement) by the leader is negatively related to perceived leadership effectiveness.

**2.6.3 Visual Attention**

Extant literate on visual attention (gazing) draws clear conclusion of the effect on the perceiver. Directing ones visual attention to the receiver is indicating that the speaker is paying attention (Montague & Asan, 2014). Gazing has been studied frequently in relation to visual dominance. Darioly and Schmid Mast (2014) define visual dominance as "the ratio of the percentage of looking while speaking divided by the percentage of looking while listening" (p. 7). Visual dominance has a significant positive effect on emergent leadership (Dovidio & Ellyson, 1982). Hence, the following findings are expected:

**H7.** Gazing towards followers has a positive effect while gazing away from followers has a negative effect on perceived leadership effectiveness.

**2.6.4 Nonverbal behavior in relation to verbal behavior**

As alluded in the literature review, verbal and nonverbal behavior are substantially related. Hence, researching the interaction of verbal and nonverbal behavior is crucial to contribute to the evident research gap thereof. By definition, nonverbal communication is "the sending and receiving of thoughts and feelings via nonverbal behavior" which are organized into a typology of codes (Ambady & Weisbuch, 2010; 465). These codes are systematic means through which meanings are encoded, transmitted, perceived and eventually decoded (Burgoon, Guerrero & Manusov, 2011). Albeit the clear distinctions between nonverbal and verbal behavior, both concepts are interrelated in several ways. Nonverbal behavior can repeat, substitute, complement, accent or contradict to verbal behavior (Richmond & McCroskey, 2004). Burgoon, Guerrero and Floyd (2010) elicit nine reasons why it is significant to research nonverbal behavior in relation to verbal behavior. Burgoon and colleagues (2010) state that nonverbal communication and behavior (1) is omnipresent and "pervade virtually every communicative act" (p. 3), (2) is multifunctional and included of the vast majority of every communicative purpose, (3) is "part of a universally recognized and understood code (p. 3), (4) may lead to both understanding and misunderstanding, (5) is deeply evolutionary rooted in human interaction, (6) is a humans very first medium of communication as infants, (7) precedes verbal communication in human interactions, (8) expresses hidden meanings of verbal communication, both intended and unintended, (9) is the true source of trust and the "window to the soul" (p. 8). Hence, this thesis will investigate the influence of nonverbal and verbal behavior as interrelated rather than mutually exclusive concepts. In order to follow a holistic approach and gain more insights on the relationship between verbal and nonverbal behavior, listening will also be taken into account. Due to the lack of extant research on the influence of nonverbal behavior in interaction of verbal behavior, the expected findings are based on assumptions:

**H8.** Hand gestures (Up & Downwards) displayed while engaging in verbal behavior (task-, relation-oriented and counter productive) is positively related to perceived leadership effectiveness.

**H8a.** Upward Palms and clasped hands displayed while engaging in verbal behavior (task-, relation-oriented and counter productive) is positively related to perceived leadership effectiveness.

**H8b.** Downward Palms displayed while engaging in verbal behavior (task-, relation-oriented and counter productive) is negatively related to perceived leadership effectiveness.

**H9.** Gazing towards followers while engaging in verbal behavior (task-, relation-oriented and counter productive) and listening is positively related to perceived leadership effectiveness.

**H9a.** Gazing away from followers while engaging in verbal behavior (task-, relation-oriented and counter productive) and listening is negatively related to perceived leadership effectiveness.

**H10.** Smiling (open & closed) while engaging in verbal behavior (task-, relation-oriented and counter productive) and listening has an effect on perceived leadership effectiveness.

**H11.** Neutral facial expression (no mouth movement) while engaging in verbal behavior (task-, relation-oriented and counterproductive) and listening is negatively related to perceived leadership effectiveness.

**H12.** Adaptors (Object, Body, Head) expression while engaging in verbal behavior (task-, relation-oriented and counterproductive) and listening is negatively related to perceived leadership effectiveness.
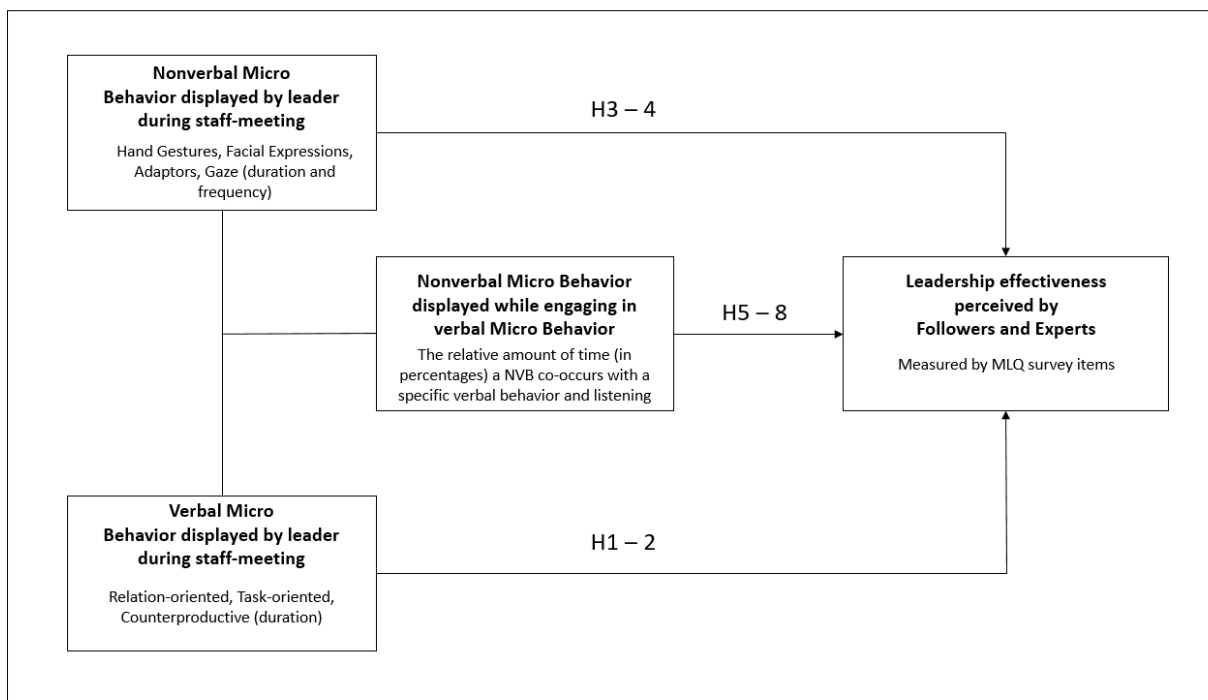


Figure 4 *Conceptual Model*

## 3. Methodology

### 3.1 Research Design

This multi-method study has a cross-sectional design and applies three different data types in the analysis: 1. Expert ratings the effectiveness of 45 leaders, 2. A survey measuring the perceived leadership effectiveness by followers and 3. A quantification of the leaders' nonverbal behavior based on 45 systematically coded videos of regularly held staff meetings.. By following this design to research the influence of leaders' nonverbal behavior on perceived leadership effectiveness, a common source and common methods bias will be omitted (Podsakoff, MacKenzie, & Podsakoff, 2012).

### 3.2 Sampling and Data Collection

The sample consists of 612 employees at a Dutch public-service organisation. From the sample, 10.2% of the participants were excluded from further analysis due to insufficient completion (less than 50%) of the survey, straight-lining (lack of variations in answers) and/or not being part of the actual team. The final sample size consits of 555 employees. Within the sample are 45 leaders, 439 followers and 71 experts. In the leader subsample, 77,80% or the participants were male and 22,2% female with an average age of 50,45, ranging from 27 to 64 years (SD = 8.62). The educational level within the leader subsample is distributed as follows: MBO 18.6%, HBO 30.2%, M.Sc. 48.8%.

The follower subsample consists of 296 male und 143 female participants. From the 439 participants in the follower subsample, 422 participants disclosed their age in the survey. Their average age is 49.53 years, ranging from 19 to 65 years (SD = 9.94). Amongst the followers the educational level is distributed as follows: MBO 43.3%, B.Sc. 1.7%, M.Sc. 17.1%, PhD 1.2%.

The participants were recruited telephonically by one of the researchers. Further, the leaders were invited to attend an information meeting in which the procedures of the video-observation was explained. Then, the leaders behavior was video-recorded during a randomly selected but regular staff meeting with their permanent working teams. The meeting context in this thesis has been chosen for three main reasons:

Three cameras were placed at a fixed position in the meeting room directed to the leader from different perspectives in order to get a clear vision of the leaders' front and middle frame. Directly after the meeting, the followers were asked to fill out a survey to rate,

amongst other items, the perceived leadership effectiveness. Further, the leadership effectiveness was rated by experts. The expert raters were members of the organisation in a higher managerial position with sufficient knowledge about the observed leader, his or her team and their overall team performance.

### 3.3 Measures

As described above, this study applies a *multi-method approach* by using three different types of data to research the influence of nonverbal behavior on perceived leadership effectiveness, namely: follower perceptions of leadership effectiveness and expert ratings and precise video-based codings of the leaders' verbal and nonverbal behaviors.

*Follower perceptions of leadership effectiveness*

In total, 439 leadership effectiveness scores were collected from followers (4 to 22 per team, on average 9.5 per team, SD = 10.6). To measure the follower perceptions of their leader's effectiveness, four items from the MLQ (Avolio & Bass, 1995) were applied. Amongst those, sample items were: "My supervisor is effective in meeting organisational requirements." Responses were categorized on a likert scale ranging from 1 (never) to 7 (always). The Cronbach's alpha for the construct of perceived leadership effectiveness by followers is 0.88. Collectively, the leaders' effectiveness was scored as 5.34 out of 10 (ranging from 2.75 to 7, SD = 0.90). In order to measure the inter-rater reliability and thus justify the team level aggregation of the perceived leadership effectiveness measure the Intraclass Correlation (ICC) was calculated. With a result of ICC1: 0.26 and ICC2: 0.79 a sufficient level of homogeneity amongst the follower ratings is achieved and aggregation on team level is justified (Bliese, 2000; Mierlo, Vermunt & Rutte, 2009).

*Expert ratings of leadership effectiveness*

Within the frame of this research 71 experts independently rated the leader's effectiveness (1 to 3 experts per leader, 1.8 on average per leader) based on their knowledge about the leader's functioning and the overall team performance. In order to ensure the expert's competence to rate the selected leader's effectiveness, the HRM department of the organisation has been consulted. Experts have rated the leader's effectiveness on a Likert scale ranging from 1 (highly ineffective) to 10 (highly effective). Example items of the expert rating of the leaders effectiveness are: "*The leaders lead a group that is effective*", "*The leader is effective in meeting organisational requirements*" and "*The leader is effective in*

*meeting organisational requirements*". Collectively, the leaders have scored a 7.2 on average (ranging from 4.0 to 8.75, SD = 0.86). The inter-rater reliability of the expert ratings was measured by applying the Intraclass Correlation Coefficient (ICC), ICC1: 0.04 and ICC2 0.29) confirms the consensus amongst the experts and thus justifies aggregation (James, Demaree & Wolf, 1984).

The follower perception and expert ratings of leadership effectiveness positively correlate with each other (0.240), though not significantly. Therefore, follower perceptions and expert ratings are included as dependent variables as the aggregation was not justified due to insufficient correlation amongst both measures.

*Coding of verbal and nonverbal behavior*

In order to analyze the leaders' behavior during the staff meetings, two coders systematically coded the verbal and nonverbal behaviors. The verbal behavior was coded with regard to task-, and relation- oriented and counterproductive behavior whereas the nonverbal behavior was coded in reference to the leaders illustrative gestures, hand movements, facial expressions and the visual attention during the meeting.

The leaders' verbal behavior was coded into two categories: *relation*-, and *task*-oriented verbal behavior as well as *counterproductive* behavior. *Task-oriented* behavior was coded when the leader displayed verbal behavior with regard on checking on the teams' progress on a task, referring to agreements with the team or assigning responsibility for tasks to team members. Examples of such task-oriented verbal behaviors are e.g. providing direction or structuring the conversation. *Relation-oriented* verbal behavior was coded whenever the leader was showing interest in the feelings or situations of his followers, creating a friendly environment or showing empathy for his followers. Examples for relation-oriented verbal behavior are e.g. providing positive feedback or being friendly (Hoogeboom & Wilderom, 2017). *Counterproductive* behavior was coded when the leader engaged in sabotaging behaviors such as defending his or her own position, showing disinterest of interrupting (Hoogeboom & Wilderom, 2017).

Illustrative gestures refer to the orientation of the individuals' palms. If the illustrative gesture displayed by the individual was open, meaning that the palms were visibly directed upwards, the gesture was coded as *upward palm* orientation. Closed gestures were coded if the individuals' palms were *down-, or inwards oriented* and therefore not visible to the follower. In case the palms were not clearly up- or downwards oriented, the gesture was

coded as *mixed palms*. If the individual is not displaying any gestures or the hand are not visible, it is coded as no gesture.

Adaptors were categorized in two categories: object- and self-touching behavior. *Object-touching* referred movements where one or both hands actively touch objects in the physical space while *self-touching* behavior was coded if one or both hands actively touch one's bodily areas or the head area.

Facial expressions were coded in three codes. *Open smiles* were coded if the lip corners were drawn up and the leaders' teeth were visible to the followers. Smiles with lip corners drawn up but no visibility of teeth were coded as *Closed Smiles*. *Neutral facial expression* was coded when there was no movement of the lip corners.

The leaders' visual attention was coded in three behavioral categories. Firstly, the visual attention *towards* the group was coded. Secondly, the visual attention *away* from the followers was coded. Lastly, *functional* looking behavior was coded if the visual attention was oriented towards work-related materials or objects with the clear intent to use them.

The leaders' nonverbal behavior has been coded by two trained coders independently. After the coding process, both coders reviewed the coding logs and discussed disagreements to achieve a high level of inter coder reliability. The initial threshold of agreements between coders was an average Kappa of 0.7 (Hayes & Krippendorff, 2007). After discussion of disagreements, a final code log has been created in alignment with the mutual  agreement of both coders. Ultimately, the event log utilized in this thesis achieved an agreement of 100%.

**3.4 Analysis**

In order to test assumptions for parametric analysis the dependent variables were tested for normality. As indicated by the Shapiro-Wilk test, the followers' leadership effectiveness scores are not normally distributed ($p=.034$).  Upon further investigation, the cause for the significant Shapiro-Wilk was an outlier. One leader has been scored significantly lower in leadership effectiveness by the followers (3.6 out of 7). After excluding the outlier, the Shapiro-Wilk indicated a normal distribution of the followers' leadership effectiveness scores ($p=.139$). The analyses were run including and excluding the outlier and no impact on the results have been detected. Thus, the outlier will not be excluded to keep the sample size as large as possible. For the experts' leadership effectiveness scores, the Shapiro-Wilk test indicates a normal distribution ($p=.228$).

Further, the assumption of homoscedasticity dependent variables was tested by checking the residual plots. Based on inspection of the residual plots, homoscedasticity of variances of both dependent variables is assumed. Lastly, the independent variables have been checked for multicollinearity. As the correlations between independent variables are below the threshold of 0.7 and the VIF values are below the threshold of 10, the absence of multicollinearity is assumed. Based on the assumption checks it can be concluded that the data is suitable for parametric analysis.

The analysis consists of a *confirmatory part* to test the above elaborated assumptions and an *exploratory part* to investigate differences in nonverbal behaviors between most, moderate and least effective leaders. Before starting with the analysis, the verbal and nonverbal behavior variables have been standardized. Due to the varying length of recorded staff meetings, the video observation length has been standardized to the shortest recorded meeting (30 minutes) to increase validity (Mashburn, Meyer, Allen, Pianta, 2014). The choice of the shortest meeting as orientation for the standardization was necessary to avoid the inflation of non-existent behavior in meetings that where shorter than the average length of all recoded meeting.

Firstly, a correlation analysis was run to determine significant correlations between the expert and follower leadership effectiveness scores and the coded behaviors. Based on the variables that significantly correlate with the dependent variables, a regression analysis was executed to test for a causal relationship between the dependent and independent variables. Secondly, an ANOVA is run and post-hoc test for multiple comparisons is applied to identify significant differences in nonverbal behaviors between the least, moderate and most effective leaders according to experts' and followers' perception. Lastly, the interclass correlations between significant variables and other nonverbal variables are investigated to establish a behavioral pattern of effective leaders.

## 4. Results

Firstly, a Pearson Correlation Analysis was run to investigate the relationship between the behavioral variables and the followers' and experts' leadership effectiveness scores. The results for all behavioral variables are depicted in appendix F. In the following sections, only significant correlations will be depicted.

The correlations between the three verbal behaviors and the expert and follower leadership effectiveness scores does not indicate a significant relationship (table 2). However, the correlations indicate an *opposite effect* as assumed in the hypotheses, namely: counterproductive behavior does not negatively correlate with perceived leadership effectiveness while relation-oriented verbal behavior negatively correlates with both experts' and followers' perceived leadership effectiveness.

Table 2 *Pearson correlations of verbal behavior*

| Leaders' observed behavior during the meeting | | Expert Ratings of Leadership Effectiveness (n=71) | Follower Ratings of Leadership Effectiveness (n=439) |
|---|---|---|---|
| Task-oriented verbal behavior (duration) | Pearson Correlation | .066 | .092 |
| Relation-oriented verbal behavior (duration) | Pearson Correlation | -.145 | -.072 |
| Counterproductive verbal behavior (duration) | Pearson Correlation | .016 | .004 |

Table 3 indicates significant correlations between nonverbal behaviors and perceived leadership effectiveness scores of both the followers and experts. In line with the above stated hypotheses, gazing (duration) towards followers positively correlates with the followers' perceived leadership effectiveness scores while gazing away (duration) from followers and adaptors (frequency and duration) negatively correlate with perceived leadership scores of followers and experts.

Table 3 *Significant Pearson Correlations of nonverbal behaviors (duration and frequency)*

| | | Leadership Effectiveness Score Experts | Leadership Effectiveness Score Followers |
|---|---|---|---|
| Object-, and Self-Adaptors (simultaneously, frequency) | Pearson Correlation | .141 | -.464[*] |
| Looking towards group (duration) | Pearson Correlation | .171 | .299[*] |
| Functional looking behavior (duration) | Pearson Correlation | -.172 | -.327[*] |
| Gazing away (functional & gazing away, duration) | Pearson Correlation | -.171 | -.300[*] |
| Body-, and Head-Adaptors (simultaneously, frequency) | Pearson Correlation | -.561[*] | -.087 |

* Correlation is significant at the 0.05 level (2-tailed).

Next, a correlation analysis is run to further investigate the relationship between interactions of nonverbal and verbal behavior and perceived leadership effectiveness (table 4). In line with the assumptions, gazing away from followers (functional gaze) while engaging in counterproductive behavior negatively correlates with the followers' perceived leadership effectiveness. Further, gazing towards followers while listening correlates positively whereas gazing away from followers while listening correlates negatively with perceived leadership effectiveness of followers. As for the experts' leadership effectiveness scores, there are multiple significant relationships with behavioral interactions. While engaging in counterproductive behavior, upward palm gesture as well as hand gestures in general (Up & Downward) positively correlate with experts' leadership effectiveness scores. Clasped hands while engaging in counterproductive behavior shows negative correlations. Moreover, several interactions of task-oriented behavior and nonverbal behaviors correlate significantly with the experts' leadership effectiveness scores. Clasped hands, open smiling and smiling behavior in general (open & closed) while engaging in task-oriented behavior negatively correlates with experts' leadership effectiveness scores. Displaying a neutral facial

while task-oriented verbal behavior correlates positively with perceived leadership effectiveness according to the experts' rating. Lastly, smiling while listening correlates negatively with experts' leadership effectiveness scores.

Lastly, the correlations of the control variables Age and Gender with the dependent and independent variables. While several behavioral interactions significantly correlate with both control variables, the dependent variables of the leaders' perceived effectiveness do not show a significant correlation with age and gender. For the control variable Gender, an ANOVA was run to investigate significant differences between male and female leaders. The between group differences are not significant ($p$=.058) for the followers' leadership effectiveness scores.

Table 4 *Significant Pearson Correlations of nonverbal-verbal interactions*

| | | Leadership Effectiveness Score Experts | Leadership Effectiveness Score Followers |
|---|---|---|---|
| Functional gaze while Counterproductive Behavior | Pearson Correlation | -.281 | -.372[*] |
| Listening while gazing towards followers | Pearson Correlation | -.058 | .305[*] |
| Listening while gazing away from followers | Pearson Correlation | .058 | -.305[*] |
| Upward Palms while Counterproductive Behavior | Pearson Correlation | .313[*] | -.098 |
| Clasped hands while Counterproductive Behavior | Pearson Correlation | -.330[*] | .113 |
| Hand gestures (Up & Downwards) while Counterproductive Behavior | Pearson Correlation | .363[*] | .058 . |
| Clasped hands while Task-oriented Behavior | Pearson Correlation | -.337[*] | -.006 |
| Neutral Facial Expression while Task-oriented Behavior | Pearson Correlation | .336[*] | -.085 |
| Open Smile while Task-oriented Behavior | Pearson Correlation | -.370[*] | .031 |
| Smiling (Open & Closed) while Task-oriented Behavior | Pearson Correlation | -.363[*] | .031 |
| Smiling (Open & Closed) while Listening | Pearson Correlation | -.355[*] | .118 |

Based on the significant correlations between the independent variables and the experts' and followers' leadership effectiveness scores, a univariate linear regression analysis is run to test the main hypothesis.

*Predicting follower perceptions of their leader's effectiveness.*

There are seven independent variables that significantly correlated with the followers' leadership effectiveness scores (Table 3 and 4). *Linear regression* analyses were used to establish whether the variables significantly predict the followers' perceptions of the leaders' effectiveness, the regression results are depicted in table 5 below. For the variable functional gazing while counterproductive behavior the regression results indicate a significant relationship with the followers perception of the leaders' effectiveness ($R^2$=0.138, $F(1,40)$=6.579, $p<.05$). Hence, functional gazing while engaging in counterproductive behavior significantly predicts the followers' perception of leadership effectiveness ($ß$=-.372, $p<.05$). Further, listening while gazing towards followers was found to significantly predict perceived leadership effectiveness ($R^2$=0.093, $F(1,40)$=4.105, $p<.05$), implying that leaders who gaze towards their followers while listening are more likely perceived as effective ($ß$ = .305, $p<.05$). On the other hand, gazing away from followers significantly correlated with the followers' perception of leadership effectiveness, and the regression analysis indicated a significant relationship.

Table 5 *Univariate linear regression results for perceived leadership effectiveness (followers)*

| | Leadership Effectiveness Score (rated by Followers) | | | |
|---|---|---|---|---|
| | R² | ß | t | p |
| Functional gaze while counterproductive behavior | 0.138 | - 0.372 | -2.565 | 0.014* |
| Gazing towards followers while listening | 0.093 | 0.305 | 2026 | 0.049* |
| Gazing away from followers while listening | 0.093 | -0.305 | -2.027 | 0.049* |
| Object-, and Self-Adaptor (simultaneously, frequency) | 0.215 | -0.0464 | -2.399 | 0.026* |
| Gazing towards followers (duration) | 0.089 | 0.299 | 2055 | 0.046* |
| Functional gaze (duration) | 0.107 | -0.327 | -2.268 | 0.028* |
| Gazing away from followers (gazing away and functional gaze) | 0.090 | -0.300 | -2.059 | 0.046* |

Further, the regression analysis indicated that leaders who display frequent simultaneous Object and Self-adaptors (body) is significantly and negatively related to lower perceptions of leadership effectiveness by followers ($R^2$=0.215, $F(1,40)$=5.765, $\beta$=-.464, $p$<.05). The duration of which leaders gaze towards followers significantly increases the followers' perception of leadership effectiveness ($R^2$=0.089, $F(1,40)$=4.223, $\beta$=.299, $p$<.05) whereas the duration of functional gazing ($R^2$=0.107, $F(1, 40)$=5.142, $\beta$=-.327, $p$<.05) and the duration of gazing away from followers (gazing away & functional gaze) ($R^2$=0.090, $F(1, 40)$=5.4.241, $\beta$=-.300, $p$<.05) decrease the perceived leadership effectiveness.

*Predicting experts perceptions of their leader's effectiveness*

There are nine independent variables that significantly correlate with the experts' perceived leadership effectiveness. Linear regression analyses were used to establish whether the variables significantly predict the experts' perceptions of the leaders' effectiveness, the regression results are depicted in table 6. In interaction with counterproductive behavior, three nonverbal variables have been found to significantly predict the experts' perceived leadership effectiveness, namely: Upward palms ($R^2$=0.090, $F(1, 40)$=4.333, $\beta$=.313, $p$<.05) as well as all (mixed, up & downwards) hand gestures ($R^2$=0.132, $F(1, 40)$=6.062, $\beta$=.363, $p$<.05) while engaging in counterproductive behavior significantly increase the experts' perceived leadership effectiveness. On the contrary, clasped hands while engaging in counterproductive is significantly decreasing the experts' perceived leadership effectiveness ($R^2$=0.109, $F(1, 40)$=4.892, $\beta$= -.330, $p$<.05). In interaction with task-oriented behavior, four nonverbal variable show a significant relationship with the experts' leadership effectiveness. While engaging in task-oriented behavior, clasped hands ($\beta$= -.337, $p$<.05), open smile ($\beta$= -0.370, $p$<.05) and smiling (open & closed, ß= -.363, p<.05) negatively influence the experts' perceived leadership effectiveness. A neutral facial expression while engaging in task-oriented behavior is significantly predicting an increase in perceived leadership effectiveness by experts ($R^2$=0.113, $F(1, 40)$=5.337, $\beta$= .336, $p$<.05). Lastly, (open & closed) smiling while listening ($\beta$= .355, $p$<.05) and frequent simultaneous display of body- and head-adapters have a significant negative relation with the experts' perceived leadership effectiveness. Appendix D represents the hypotheses and an indication whether these have been rejected or accepted based on the regression analysis result.

Table 6 *Univariate linear regression results for perceived leadership effectiveness (experts)*

| | Leadership Effectiveness Score Experts | | | |
| --- | --- | --- | --- | --- |
| | $R^2$ | ß | t | p |
| Upward palms while counter productive behavior | 0.098 | 0.313 | 2.082 | 0.044* |
| Clasped hands while counter productive behavior | 0.109 | -0.330 | -2.212 | 0.033* |
| Hand Gestures (mixed, up, down) while counter productive behavior | 0.132 | 0.363 | 2.462 | 0.018* |
| Clasped hands while task-oriented behavior | 0.113 | -0.337 | -2.319 | 0.025* |
| Open Smile while task-oriented behavior | 0.137 | -0.370 | -2.584 | 0.013* |
| Smiling (open and closed) while task-oriented behavior | 0.131 | -0.363 | -2.521 | 0.016* |
| Smiling (open and closed) while listening | 0.126 | -0.355 | -2.398 | 0.021* |
| Body-, and Head-Adaptors (simultaneously, frequency) | 0.314 | -0.561 | -2.345 | 0.037* |
| Neutral facial expression while task-oriented behavior | 0.113 | 0.336 | 2.310 | 0.026* |

Based on the significant univariate linear regression results, a *multivariate linear regression analysis* is run to find out how much explanatory power the significant individual independent variables have in conjunction to predict leadership effectiveness.

For the followers, the model for the multivariate regression consists of six variables (Figure 5). In spite of a comparatively large explanatory power ($R^2$=0.492, $R^2_{adjusted}$=0.274), the multivariate regression analysis for the model tested below indicates no significant predictive relationship to perceived leadership effectiveness ($F(6,14)$=2.257, $p$>.05). Moreover, based on the regression coefficients, only the variable *Object- and Self-Adaptors* significantly predicts the followers' perceived leadership effectiveness in the tested model ($ß$ = -.573, $p$ = .026).

For the expert ratings, nine individual independent variables have shown in the univariate regression analysis to predict perceived leadership effectiveness. Based on these variables, a multivariate regression analysis was run to evaluate the explanatory power of the model (Figure 6). The overall model has a comparatively high explanatory power ($R^2$=0.934, $R^2_{adjusted}$=0.638) in comparison to the univariate regression anlysis, yet it is not significantly predicting the experts' leadership effectiveness scores ($F(9, 2)$=3.155, $p$>.05).

In spite of a high statistical power of both models, neither of them significantly related to perceived leadership effectiveness. This finding may have occurred due to *unaccounted noise* in the model and the relatively small sample size in relation to the large number of predictors. Nonetheless, the findings may be used as foundation for future research to replicate the model with a larger sample size.
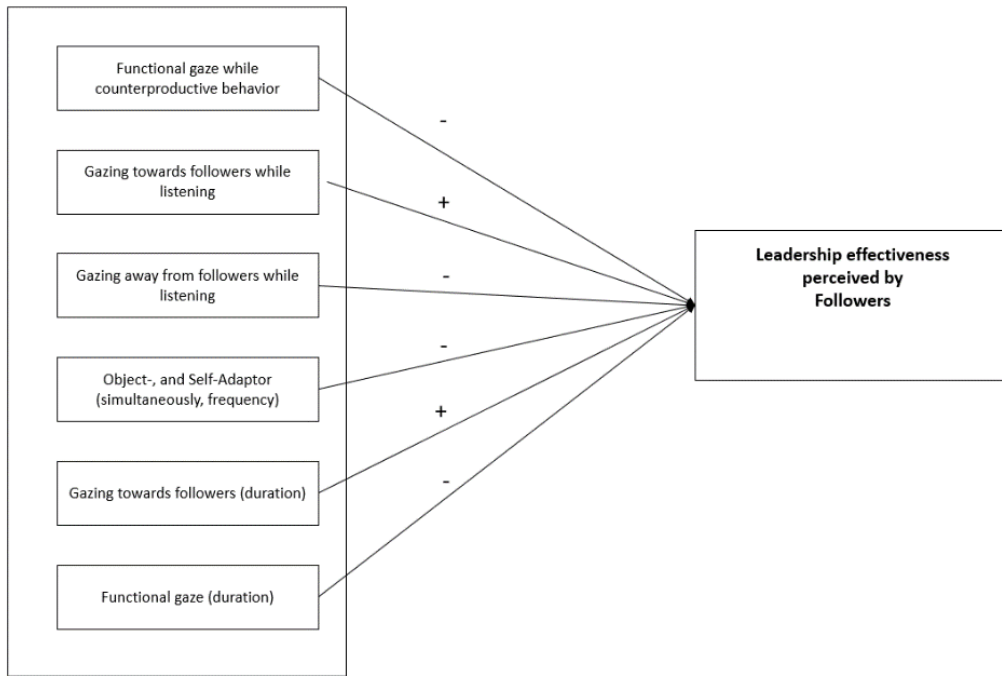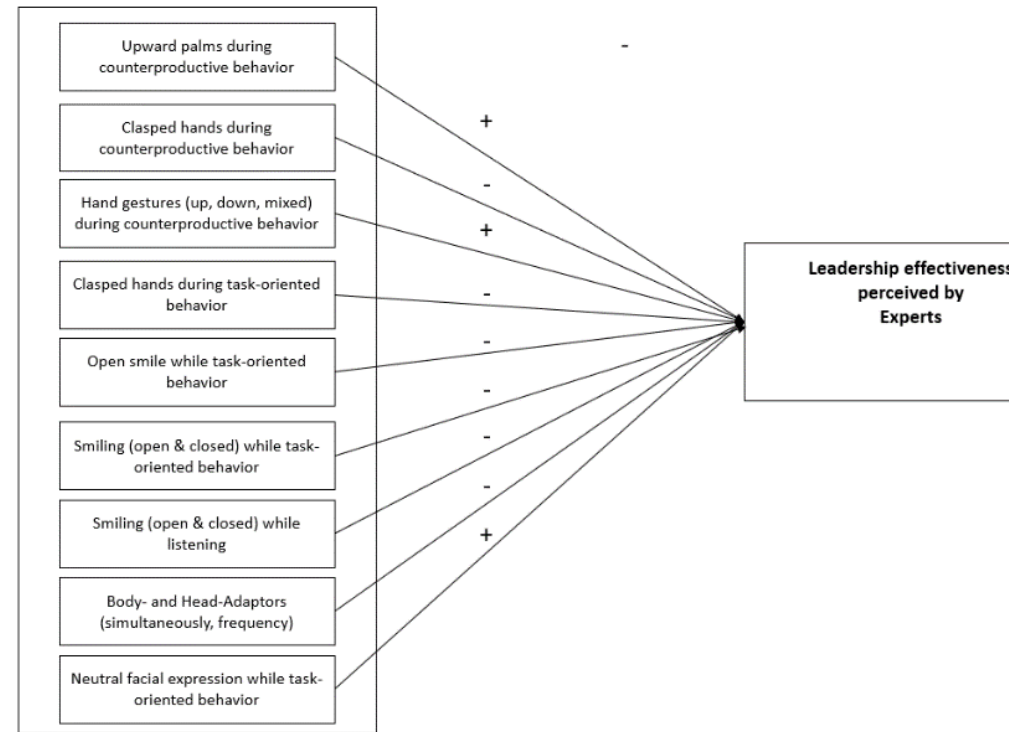
Figure 5 *Conceptual Model – Followers*

Figure 6 *Conceptual Model – Expert*

Further, a one-way ANOVA is run to investigate significant differences in behavior between the most, moderate and least effective leaders, based on follower and expert perceptions. Hence, *categoric variables* have been created to group leaders into three categories based on the followers' and the experts' leadership effectiveness scores. For the followers, the most effective leaders score within the range of 5.63 to 6.25 (*m*=5.8), the moderately effective leaders are ranged between 5.22 and 5.61 (*m*=5.4) and the least effective leaders scored between 3.6 and 5.19 (*m*=4.0). As for the experts, the most effective leaders scored between 7.75 and 8.75 (*m*=8.1), moderately effective leaders' range is between 6.92 and 7.62 (*m*=7.25) and the least effective leader scores scored 6.88 or lower (*m*=6.27). The results of the one-way ANOVA are presented in table 7 and 8. Based on the ANOVA results, Tukey's post hoc multiple comparison test is applied to compare behaviors between the least, moderate and most effective leaders. The descriptives of behaviors that showed significant differences between the most, moderate and least effective leaders in the one-way ANOVA can be found in appendix C.

*Follower ratings*. For the followers' leadership effective scores six nonverbal behavior variables showed significant differences between groups.

Three of these variable violated the assumption of homogeneity of variance and therefore the Games Howell post-hoc test will be applied. *Object-touch while counterproductive behavior* showed significant between-group differences in the one-way ANOVA ($F(2, 40)$=3.280, $p$=.021) and statistically significant results in the post-hoc test to reveal differences between the most effective leaders (*m*=0.21, *SD*=.28) and moderately effective leaders (*m*=0.018, *SD*=0.033). *Adapters (body, face and object) while task-oriented behavior* significantly differ between the groups ($F(2,42)$ =3.348, $p$=.045). However, the Games Howell post-hoc test does not indicate significant differences on the individual group level ($p$>.05). *The frequency of clasped hands* displayed by leaders in general show significant ANOVA results ($F(2, 39)$=4.060, $p$=.025) and the Games Howell post-hoc test indicates significant differences between the most effective leaders (*m*=33.06, *SD*=25.22) and moderately effective leaders (*m*=66.55, *SD*=47.70).

*Gazing towards followers while listening* shows significant between group differences in the one-way ANOVA ($F(2, 39)$=4.241, $p$ = .022). Tukey's post-hoc test shows statistically significant differences between the most effective leaders (*m*=0.87, *SD*=0.07) and moderately effective leaders (*m*= 0.73, *SD* = 0.19). On the other hands, *gazing away from followers while*

*listening* indicate significant differences on the between-groups level ($F_{(2,39)} = 4.234$, $p = .022$) and between the most effective leaders ($m$=0.06, $SD$=0.03) and moderately effective leaders ($m$=0.14, $SD$=0.09). Lastly, there is a statistically significant difference between groups for the *frequency of neutral facial expression* displayed by the leader, indicated by the one-way ANOVA ($F_{(2,42)}$=5.159, $p$=.010). Tukey's post-hoc test shows significant individual group differences between the least effective leaders ($m$=33.44, $SD$=13.92) and moderately effective leaders ($m$=48.98, $SD$=12.73).

*Expert ratings.* For the experts' leadership effective scores eight nonverbal behavior variables showed significant differences between groups. As determined by the one-way ANOVA the groups significantly differ in the amount of *gazing towards followers* while engaging in counterproductive behavior ($F_{(2, 38)}$=3.302, $p$=.048). However, Tukey's post hoc test revealed no significant differences on the individual level between the least, moderate and most effective leaders ($p$>.05). For the variable *gazing away from followers while counterproductive behavior* the one-way ANOVA indicated significant differences between groups ($F_{(2, 38)}$=3.302, $p$=.048) whereas the post hoc test was insignificant ($p$= 0.05).

Further, the one-way ANOVA showed significant results for three variables of nonverbal behaviors occurring while engaged in task-oriented behaviors. All three variables violated the assumption of homogeneity of variance, therefore the Games Howell post-hoc test will be applied. *Downward palms while task-oriented behavior* differs significantly between the groups ($F_{(2,40)}$ =3.985, $p$=.026). The Games-Howell post-hoc test reveals that least effective leaders (score 7.75 − 8.75) display significantly less downward palm gestures while task-oriented behavior ($m$=0.04, $SD$=0.038, $p$=.021) than moderately effective leaders ($m$=0.15, $SD$=0.11). There was no significance for differences between the least and moderately effective leaders ($p$=.413). *Clasped hands while task-oriented behavior* showed significant results in the ANOVA ($F_{(2,40)}$=4.137, $p$=.023). Further, the post-hoc test indicated that the least effective leaders display significantly more clasped hand gestures while task-oriented behavior ($m$=0.31, $SD$=0.21) than moderately effective leaders ($m$=0.16, $SD$=0.12) and least effective leaders ($m$=0.15, $SD$=0.15). Lastly, the one-way ANOVA indicated significant between group differences for *hand gestures (open & closed) while task-oriented behavior* ($F_{(2,40)}$=3.804, $p$=.031). However, the post-hoc test does not show statistically significant differences on the individual group level ($p$ >0.05).

Moreover, the ANOVA results indicate group differences for *mixed palms while relation-oriented behavior* ($F(2,40)=4.240$, $p=.021$), *hand gestures (open & closed) while speaking* ($F(2,40)=3.295$, $p=.047$) as well as *gazing towards followers and functional gaze while speaking* ($F(2,40)=4.650$, $p=.015$). However, Tukey's post-hoc test only indicates significant individual group differences for *gazing towards followers and functional gaze while speaking* between the most effective leaders ($m=0.46$, $SD=0.24$) and moderately effective leaders ($m=0.42$, $SD=0.44$).

Table 7 *One-way ANOVA results – Followers*

*ANOVA*

| | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| Object-touch while counterproductive behavior | Between Groups | .305 | 2 | .153 | 3.280 | .048* |
| | Within Groups | 1.862 | 40 | .047 | | |
| | Total | 2.167 | 42 | | | |
| Adapters (self and object) while task-oriented behavior | Between Groups | .025 | 2 | .012 | 3.348 | .045* |
| | Within Groups | .154 | 42 | .004 | | |
| | Total | .179 | 44 | | | |
| Gazing towards followers while listening | Between Groups | .152 | 2 | .076 | 4.241 | .022* |
| | Within Groups | .698 | 39 | .018 | | |
| | Total | .850 | 41 | | | |
| Gazing away from followers while listening | Between Groups | .038 | 2 | .019 | 4.234 | .022* |
| | Within Groups | .174 | 39 | .004 | | |
| | Total | .212 | 41 | | | |
| Neutral Facial Expression (freq) | Between Groups | 1.776.472 | 2 | 888.236 | 5.159 | .010* |
| | Within Groups | 7.231.643 | 42 | 172.182 | | |
| | Total | 9.008.114 | 44 | | | |
| Claspedhands (freq) | Between Groups | 8.317.927 | 2 | 4.158.963 | 4.060 | .025* |
| | Within Groups | 39.947.936 | 39 | 1.024.306 | | |
| | Total | 48.265.863 | 41 | | | |

Table 8 *One-way ANOVA results - Experts*

| | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| Gazing towards followers while counterproductive behavior | Between Groups | .211 | 2 | .105 | 3.302 | .048* |
| | Within Groups | 1.213 | 38 | .032 | | |
| | Total | 1.423 | 40 | | | |
| Gazing away from followers while counterproductive bahvior | Between Groups | .053 | 2 | .026 | 3.302 | .048* |
| | Within Groups | .303 | 38 | .008 | | |
| | Total | .356 | 40 | | | |
| Downward palms while task-oriented behavior | Between Groups | .069 | 2 | .034 | 3.985 | .026* |
| | Within Groups | .345 | 40 | .009 | | |
| | Total | .414 | 42 | | | |
| Clasped hands while task-oriented behavior | Between Groups | .178 | 2 | .089 | 4.137 | .023* |
| | Within Groups | .860 | 40 | .021 | | |
| | Total | 1.038 | 42 | | | |
| Hand gestures (open & closed) while task-oriented behavior | Between Groups | .027 | 2 | .013 | 3.804 | .031* |
| | Within Groups | .142 | 40 | .004 | | |
| | Total | .169 | 42 | | | |
| Mixed palms while relation-oriented behavior | Between Groups | .049 | 2 | .024 | 4.240 | .021* |
| | Within Groups | .230 | 40 | .006 | | |
| | Total | .279 | 42 | | | |
| Hand gestures (open & closed) while speaking | Between Groups | .016 | 2 | .008 | 3.295 | .047* |
| | Within Groups | .099 | 40 | .002 | | |
| | Total | .115 | 42 | | | |
| Gazing towards and functional while speaking | Between Groups | .012 | 2 | .006 | 4.650 | .015* |
| | Within Groups | .052 | 40 | .001 | | |
| | Total | .064 | 42 | | | |

Lastly, correlations of the nonverbal behavior variables that significantly predict leadership effectiveness perceived by followers are investigated to establish behavioral patterns of effective leaders in the eyes of their followers. Interestingly, the univariate linear regression results differ from the one-way ANOVA results with regard to which behaviors effective leaders engage in. Therefore, the results from both analyses are taken into account and the nonverbal variables that significantly predict *followers' perceived leadership effectiveness* are used as the baseline to find significant correlations with other nonverbal behaviors. Table 9 below presents behaviors with *significant* interclass correlations with the variables that have shown significance in predicting the followers' leadership effectiveness scores and/or within the individual group levels of the least, moderate and most effective leaders. According to the correlations, effective leaders engage in the following behaviors:

Table 9 *Behaviors of effective leaders (based on correlation analysis)*

| **1. Verbal behavior** | **4. Nonverbal behavior while relation-oriented verbal behavior** |
|---|---|
| ·    Less disinterest | ·    More gestures |
| ·    Less counterproductive behavior | ·    Less clasped hands |
| **2. Nonverbal behavior** | ·    Less adaptors |
| ·    Less clasped hands (duration) | ·    Less open & closed smile |
| ·    Less downward palms (duration & frequency) | ·    More neutral facial expression |
| ·    Less mixed palms (duration & frequency) | **5. Nonverbal behavior while counterproductive verbal behavior** |
| ·    Less gestures in general (duration) | ·    Less mixed palms |
| ·    Less adaptors in general (duration & frequency) | ·    Less clasped hands |
| ·    More open & closed smile | ·    Less gestures in general |
| ·    More upward palms (frequency) | ·    Less adaptors |
| **3. Nonverbal behavior while task-oriented verbal behavior** | **6. Nonverbal behavior while listening** |
| ·    Less gestures in general | ·    Less object-touch |
| ·    Less clasped hands | ·    Less Adaptors in general |
| ·    More object-touch | ·    Less clasped hands |
| ·    More Adaptors in general | ·    More smiling |

## 5. Discussion

This study aimed to explore the relation between observable micro-behaviors of leaders during regularly held staff meetings and perceptions of their leadership effectiveness. More specifically, this thesis was guided by the following research question: *What specific verbal and nonverbal behaviors displayed by leaders in regularly held staff meetings are infleuncing perceived leadership effectiveness?*

The findings of this study clearly show that both verbal and nonverbal behaviors of leaders can be accurately and systematically mapped on the basis of video-recorded staff meetings, and that these micro-behaviors explain a significant amount of variance in leadership effectiveness scores. Several key findings can be identified. First, the results of the data fit analysis showed that the expert and follower scores on leadership effectiveness did not significantly correlate. This finding in itself suggests that followers and experts have different perceptions of what constitutes effective leadership. As alluded in the literature review, individuals are constrained by several factors to objectively rate leadership behavior. Rating an individual's behavior is a highly complex cognitive task (Landy & Farr, 1987), which leads the rater to reduce the complexity of the task by relying on "subjective, prototypical representations" (Hoogeboom & Wilderom, 2015, p. 385).

The followers' leadership perception ratings may have been biased by the quality of the *leader-member exchange relationship* (Dienisch & Liden, 1986; De Jong & Den Hartog, 2007; Van Woerkom & Meyers, 2015). Graen and Uhl-Bien (1995) allude that „effective leadership processes occur when leaders and followers are able to develop mature leadership relationships (partnerships) and thus gain access to the many benefits these relationships bring" (p. 225). However, low quality leader-member exchange relationship negatively influence the followers' perceptions and decrease the leaders' incremental influence (Katz & Kahn, 1978). On the other hand, the expert are superiors of the leaders observed in the video-recorded staff-meetings. A phenomenon which possibly biased the expert ratings of leadership effectiveness is the *similarity-attraction phenomenon*. The similarity-attraction phenomenon assumes that the superiors' perceptions of their subordinate are influences by the similarity between them, implying that experts give higher rating to leaders that have a similar personality and management style (Byrne, 1971).

The analysis consisted of two parts - a confirmatory regression analysis to test the enumerated hypotheses as well as an ANOVA and correlation analysis to explore differences between the most, moderate and least effective leaders and to establish a behavioral pattern of effective leaders. Therefore, the results of the regression analysis are discussed first to confirm or reject hypotheses. Then, the ANOVA and correlation analysis results are reviewed to provide further insights on the behaviors of effective leaders in this sample.

### *Confirmatory Analysis*

*Verbal behavior - Hypotheses 1 - 2*

Based on the regression analysis, seven out of twelve hypotheses were (partly) confirmed, appendix D shows all hypotheses and whether they have been accepted. Surprisingly, none of three nonverbal behaviors measured significantly relate to perceived leadership effectiveness, hence hypothesis 1 and 2 were rejected.

*Nonverbal behavior - Hypotheses 3 - 7*

The univariate linear regression analysis confirmed that the display of adaptors negatively influences the followers' and experts' perception of leadership effectiveness. However, the type of adaptors that significantly relate to leadership effectiveness differ, depending on whether the experts or followers served as the source for the leadership effectiveness ratings. For the followers, the frequency of simultaneous object- and body-adaptors displayed by the leader in the video-recorded staff meeting negatively influence the perceptions of leadership effectiveness. In contrast, for the experts, the frequency of displayed simultaneous body- and head-adapters negatively relates to perceived leadership effectiveness. These findings are in line with the assumptions discussed in extant literate. In a professional setting, the display of adaptors is associated with deception and negative emotions such as anxiety, nervousness (Henningsen, Valde & Davies, 2005). Moreover, studies have shown that adaptors negatively influence an individual's persuasiveness (Burgoon, Birk & Pfau, 1990; Argentin et al. 1990), perceived competence and assertiveness (Bailey & Kelly, 2005). The data presented in this thesis indicate that frequent displays of adaptors during meetings negatively relate to leadership effectiveness.

Furthermore, the regression indicated that the followers' leadership effectiveness scores were related to the leaders' gazing behavior during the video-recorded meetings. The results indicated that gazing towards followers has a positive effect while gazing away from

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followers has a negative effect on perceived leadership effectiveness, as indicated in hypothesis 7. The leaders' gazing behavior was captured in multiple variables: 1. *Gazing towards followers* (frequency and duration), 2. *Gazing away from followers* e.g. looking at the floor (frequency and duration), 3. *Functional Gaze* e.g. looking at the laptop (frequency and duration) and 4. *Gazing away from followers* (functional gaze and gazing away summed up as one variable). For the followers, the duration of the leaders' gaze towards the followers positively influences perceived leadership effectiveness. The duration of functional gazing behavior as well as the combined duration of gazing away and functional gaze negatively influence the followers' perceived leadership effectiveness. Interestingly, the duration and frequency of gazing away from followers alone does not significantly predict perceptions of leadership effectiveness. Directing ones gaze towards the receiver is indicative for the senders attention (Montague & Asan, 2014). Hence, leaders who gaze towards followers convey the message of paying attention to their followers (Montague & Asan, 2014) and indicate an appropriate level of engagement with their followers (Admoni, Hayes, Feil-Seifer, Ullman and Scassellati, 2013). Furthermore, visual dominance is has a significant positive effect on the perceptions of leadership (Darioly & Mast, 2014), confidence and power (Griffin & Bone, 2016). Conclusively, gazing away from the receiver signals a lack of power and confidence (Hall et al. 2005). However, the regression results do not indicate significance for gazing away from followers, but for the duration of functional gazing and the combination of gazing away and functionally, indicating a high significance for functional gazing. In extant literature no distinction was made between gazing away and gazing functionally. In the following sections the functional gaze in relation to perceived leadership effectiveness will be further elaborated.

*Nonverbal cues in interction with verbal behavior 8 - 12*

Earlier work showed that the absence of hand gestures leads to a lack of emotional response by followers (Talley & Temple, 2015), as conversational gestures have the ability to complement, repeat and accent verbal behavior (Richmond & McCroskey, 2004). Therefore, as assumed in hypothesis 8, the display of hand gestures in general (up, down & mixed) while engaging in counterproductive behavior has a positive influence on the experts' leadership effectiveness perceptions. Moreover, the findings of the regression analysis indicate that upward palms during counterproductive behavior has a significant positive effect on the experts' perception of leadership effectiveness, in line with hypothesis 8a. Interestingly, neither of these variables showed an individual significant effect in the regression analysis.

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Due to the novelty of researching verbal and nonverbal behavior conjointly, literature in that field is scarce. According to literature, upward palm gestures convey openness, confidence and receptiveness (Kendon, 2004). Moreover, leaders who display upward palms gestures are perceived as more immediate, persuasive, competent and dominant (Talley & Temple, 2015; Poggi & Vincze, 2008; Cuddy, Glick & Beninger, 2011; Cashdan, 1998). The leaders are observed and rated by the experts, which are the leaders' superiors. Hence, the counterproductive behavior displayed by the leaders may affect the experts (superiors) differently than the followers (subordinates). Whereas followers might get offended when leaders engage in counterproductive behavior towards them, experts may perceive the behavior more objectively. Therefore, one can argue that the hand gestures outweigh the presumable negative effect of counterproductive behavior and positively influence the experts' perception of leadership effectiveness.

Moreover, the findings support hypothesis 8b, implying that the display of clasped hands while engaging in counterproductive and tasks-oriented behavior negatively influences the experts' perceptions of leadership effectiveness. The literature on the nonverbal meaning of clasped hands remains scarce. However, several studies imply that clasped hands convey a negative meaning. For example, prior work has shown that clasped hand gestures can signal negative characteristics, such as worry, tension, self-doubt or aggressive superiority (Blum, 1988). Moreover, clasped hands can also be seen as signals of annoyance, frustration and a negative attitude of the sender (Kahn, 1992). Hence, in co-occurrence with counterproductive and task-oriented behavior, these characteristics of clasped hand gestures seem to enhance the negative aspects of the verbal behavior.

As discussed above, the duration of gazing towards followers is an influential factor on the followers' perceptions of leadership effectiveness. Similar results have been shown for gazing behavior in co-occurrence with verbal behavior, as indicated by hypotheses 9 and 9a. For the followers' perceptions of leadership effectiveness, gazing towards followers while listening has a positive influence, whereas gazing away from followers while listening has a negative influence on the followers' perceived leadership effectiveness, indicating that the leaders' attentive listening to their followers is recognized and valued by followers.

Moreover, functional gazing while engaging in counterproductive behavior negatively relates to followers' perceived leadership effectiveness. Counterproductive behaviors are "unsupportive managerial work behaviors" (Wilderom & Hoogeboom, 2015, p. 384) that communicate a disinterest in their followers and thus are perceived as disrespectful by

followers (De Hoogh & Den Hartog, 2008; Rooney & Gottlieb, 2007). Empirical evidence on the influence of functional gazing is scarce. Though, one may assume that gazing functionally (e.g. on ones' laptop) while engaging in any type of verbal behavior is perceived as disrespectful and inattentive. Hence, gazing functionally while engaging in counterproductive behavior is resulting in negative synergy and thus influencing perceived leadership effectiveness negatively.

Extant literature on the influence of smiling behavior is contradictory. According to Ekman (1992), there are up to 50 distinction of smiling behavior with different social meanings depending on the context. Therefore, hypothesis 10 assumes that smiling while engaging in verbal and listening behavior does have an effect on perceived leadership effectiveness, not indicating any direction. The findings support hypothesis 10, indicating a negative relationship between smiling while task-oriented behavior and smiling while listening based on the experts' scores. One of the many outcomes of smiling behavior is that smiling individuals may be perceived as submissive with low levels of dominance (Keating et al., 1981, Edinger & Patterson, 1983). Further, smiling has been found to be a mean to receive approval (Rosenfeld, 1996), an expression of embarrassment (Goldenthal, Johnston & Kraut, 1891) and leniency (LaFrance & Hecht, 1995). Referring back to the hierarchical differences between experts and observed leaders, it can be assumed that experts see smiling while task-oriented behavior as an indication of weakness and lack of authority. Conclusively, smiling while engaging in task-oriented behavior may harm the leaders' perceived superiority and power and therefore decreases the experts' perceived leadership effectiveness. These assumptions are advanced by the findings that a neutral facial expression while task-oriented behavior is positively influencing the experts' perceived leadership effectiveness, hence not supporting hypothesis 11 and indicating a reverse effect than assumed.

In line with the aforementioned arguments, the present data also shows that leader who smile a lot while listening to their followers during meetings are rated as less effective by sampled experts. Negative effects of smiling behavior on perceptions have been discussed in the previous section and are assumed to hold for smiling behavior while listening. Additionally, Campbell and Rushton (1978) found that individuals who display smiling behavior particularly while listening are perceived to have a lower IQ. Nonetheless, empirical evidence on influence of smiling while listening remains scarce.

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Furthermore, ANOVA tests were run to provide further insights on behavioral patterns that are likely to influence the followers' and experts' perceptions of a leader's effectiveness. For the experts, the ANOVA additionally reveals that leaders are perceived as more effective if they display: downward palms while task-oriented behavior and gazing towards and functional gaze (summed up) while speaking. For the followers, additional significant behaviors by the ANOVA results, indicating that effective leaders display object-adaptors while engaging in counterproductive behavior, a higher frequency of neutral facial expression and a lower frequency of clasped hands. Although the One-way ANOVA results indicate significant differences on the individual group levels of the aforementioned variables for followers and experts, the data shows no directive pattern upon further investigation (see appendix C).

Referring back to the lack of correlation between the followers' and experts' leadership scores it is important to point out the discrepancy of the type of body codes that significantly influence the perceptions of leadership effectiveness. The followers' perceptions are solely influenced by gazing behavior and adapters whereas the experts' perceptions are influenced by hand gestures, facial expression and adapters while verbal behaviors, excluding gazing behavior. This finding in itself provides argumentation for further discussion.

Nonverbal behavior has been found to be a source of impression management in e.g. interview processes wit job applicants. Findings of extant literate suggests that nonverbal behavior of the interviewees have a significant influence on the interviewers evaluation of the interviewee (e.g. McGovern, 1978; Lievens & Peeters, 2008; Peeters & Lievens, 2006). Hence, individuals in a higher hierarchical position are relying on nonverbal cues when evaluating subordinates. These assumptions may also hold for the expert rating the leaders, as they are the leaders' superiors and thus have a higher hierarchical position. This argumentation is underlined by two facts - 1. the significant nonverbal verbal behaviors that influence expert perceptions are the obvious ones (smiling and gestures) which are recognized even by inattentive listeners and 2. the leaders' verbal behavior does not show any significant effect in predicting the experts' perceived leadership effectiveness.

On the other hand, the nonverbal codes that influence the followers' perceived leadership effectiveness (oculesics and adapters) are much less obvious, yet they are the only ones influencing the followers' perceptions of leadership effectiveness significantly. This

may be explained by the fact that the followers already have a relationship to the leader, which influences their perceptions of the leader.

The correlation analysis of significant behaviors related to the followers' ratings reveals a behavioral pattern of effective leaders. Although the behaviors listed in table 9 do not significantly relate to leadership effectiveness, they do help to draw a picture of an effective leader in line with follower perceptions. The correlations provide insight on the relationship of *showing disinterest (verbally)* and the significant variables that predict effective leadership according to the followers. All significant variables have a high (positive and negative) correlation with showing disinterest, e.g. Gazing away while listening has a positive correlation with disinterest (0.797). This correlation analysis may not provide insights to more behaviors that significantly predict leadership effectiveness, however, it helps to create reasoning as to why certain behaviors may be linked to the followers' perceptions of leadership effectiveness.

Referring back to functional gazing discussed in the paragraphs above, it is insightful to see that the functional gazing on its own and in co-occurrence with counterproductive behavior have very high, significant correlations with the verbal behavior of *showing disinterest.* These results are in line with the aforementioned findings of extant literature, implying that a lack of gazing towards followers conveys a message of inattentiveness, lack of engagement and disinterest (Admoni, Hayes, Feil-Seifer, Ullman and Scassellati, 2013, Montague & Asan, 2014). However, the findings also reveal a difference between gazing away from followers and gazing functionally, indicating why functional gaze significantly influences the followers perception, though gazing away is not. The correlation analysis reveals that the *duration* of gazing functionally, gazing functionally while engaging in counterproductive behavior and the duration of gazing away and functionally (summed up) have a high (significant) relation to the variables *No Gesture* (frequency & duration and co-occurrence with verbal behaviors), implying that leaders who have high durations of functional gazing show less gestures overall. In comparison, the *duration of gazing away from followers* has a (nonsignificant) negative correlation with *No Gesture* (-0.109), hence implying that leaders who gaze away from followers show more gestures overall. Moreover, it is important to point out that only the durations of functional gazing show significance in the analyses, not the frequencies.

Therefore, it can be concluded that leaders who show high durations of functional gaying are generally engaging in less gestures overall and during counterproductive, relation-, and task-oriented behaviors. This leads to conclude that those leaders may not only gaze functionally in high durations, but may also *engage in other activities* (e.g. typing on the laptop or making notes) during verbal behavior and therefore conveying a lack of engagement, interest and attentiveness.

**Theoretical contributions**

The importance of nonverbal behavior in the organisational context has been emphasized by extant literature, yet empirical evidence remains scarce. This thesis provides insights to further bridge the research gap on nonverbal leadership behavior by following an original approach. There are three theoretical implications provided by the study design and results of this thesis.

*Contribution 1*: This thesis distinguises itself from extant literature in two aspects. Firstly, this thesis has utilized three data sources to research effective leadership behavior: expert ratings, follower perceptions and video-observations, hence ommitting common source and common method bias. Secondly, the leadership behavior was reseached holistically by taking verbal and nonverbal behavior into account, both individually and conjointly. The importance of these disctinctions is reflected in the results. Follower and expert ratings of perceived leadership effectiveness do not significantly correlate, implying different perceptions of what constitutes effective leadership. Moreover, the findings of this thesis provide implications for understanding how leaders' nonverbal behavior influences followers and experts. Follower perceptions are influenced by sublte nonverbal behaviors, namely - *gazing behaviors*. On the other hand, expert perceptions are influenced by more obvious nonverbal behaviors, such as *hand gestures* and *facial expressions*. Hence, the choice of data source to measure leadership behavior should be context specific and well aligned with the research objectives and research perspective of leadership behavior. Furthermore, the results indicate that the leaders' verbal behavior does *not significantly* relate to follower and expert ratings of leadership effectiveness. However, the results indicated significant relations between perceived leadership effectiveness and interactions of verbal and nonverbal behavior. These findings suggest that the verbal context and nonverbal behaviors are equally impactful and seem to influence expert perceptions in a synergistic manner. This provides

empirical evidence to research leadership behavior under the aspect of co-occuring verbal and nonverbal behaviors.

*Contribution 2*: The lack of significance of verbal behavior in predicting perceived leadership effectiveness provides theoretical implications for researching leadership behavior. Scholars have criticized extant research on leadership behavior for the lack of context specificity. Therefore, this thesis aimed to follow a context specific approach by categorizing verbal leadership behavior into task-, and relation-oriented as well as counterproductive behavior, as opposed to the traditional transactional-transformational leadership behavior approach. Nontheless, the results do not indicate significance in predicting perceived leadership effectiveness. This finding provides implications for scholars to gain more insights on verbal leadership behavior and to find a more detailed approach to cluster verbal behaviors of leaders. The verbal behavior of the leaders in this sample was coded based on a pre-existing cluster of micro-behaviors which are categorized in counterproductive, task-, and relation-oriented behaviors. Evidently, the coded beahviors did not significantly relate to perceived leadership effectiveness in this study. Future research should therefore aim to increase the context specificity to code verbal behaviors. This may be accomplished by following a two-step approach to research verbal and nonverbal behaviors. Firstly, a qualitative analysis of the leaders' verbal behaviors to create a cluster of verbal behaviors that are actually displayed during the recorded meetings, as opposed to the pre-existing cluster. Then, on basis of the qualitative analysis, the verbal behavior should be quantified by utilizing the created cluster to code the leaders' verbal behavior.

*Contribution 3*: The regression analysis for both follower and expert leadership effectiveness perceptions provided novel results of nonverbal behaviors. The follower perceptions of leadership effectiveness are negatively influenced by the functional gazing of leaders where as gazing away from followers is not significanlty influencing perceived effectiveness. The dual function of gazing has not been discussed in extant literature on leadership behavior. Therefore, the presented results imply a high importance of concept of functional gazing in the organisational context. On the other hand, expert perceptions are negatively influenced by the gesture of clasped hands (while task-oriented and counterproductive behavior). Empirical evidence on the effect of clasped hands remains scarce. Hence, the findings of this thesis provide implications to gain further insights on the reasoning and effect of clasped hands in management literature.

**Practical implications**

The topic of leadership effectiveness is omnipresent in management-literature. Scholars have focused on which leadership styles are most effective and how to coach, train and improve leadership skills to attain organisational goals. The verbal component of effective leadership behavior has been researched extensively (e.g. Hoogeboom & Wilderom, 2015a; Yukl, 2008; Yukl, 2012) whereas the nonverbal component of leadership behavior remains neglected. Managers are responsible for setting strategies, motivate subordinates, create a desirable culture and ultimately be as effective and efficient as possible. Organisations offer trainings on how to manage teams or how to communicate with impact, but have yet to notice the importance on nonverbal interactions. Nonverbal behavior accounts for up to 66% of the meaning conveyed between individuals in social interactions (Birdwhistell, 1970; Crane & Crane, 2010) and has a significant influence on leadership perceptions, as shown by the results of the regression analysis. This thesis provides practical implications for organisations to include nonverbal behavior as an influential soft-skill of managers and expand the repertoire of Do's and Don'ts for effective leaders. Leaders need to learn how to communicate effectively on verbal and nonverbal levels by enhancing their verbal messages with specific nonverbal behaviors. On the other hand, leaders need to become aware of which nonverbal behaviors are undermining their authority and persuasiveness and therefore negatively influence follower and expert perceptions of themselves.

**Limitations and strengths**

Self-evidently, this study has limitations. First and foremost, the relatively small sample size of 45 Leaders is decreasing the statistical power of this study, leaving potentially significant behaviors undetected. Moreover, the generalizability of this study is relatively low due to the fact that the study was conducted in one public sector institution in the Netherlands. Extant research has proven that nonverbal behavior has different effects in various cultural contexts (Bonaccio et al., 2016). The Netherlands is a country with a low-context culture, meaning that individuals rely on explicit, direct communications rather than nonverbal cues (Hall, 1959). If this study was repeated in a high-context culture such as China, results are very likely to differ. The public sector is another factor of limitation as several studies have emphasized the differences of the effect of HRM practices in private and

public sector organisations (e.g. Bos- Nehles, Renkema & Janssen, 2017). Moreover, the lack of literature on the effect of nonverbal behavior *during* specific verbal behaviors is a limitation to this studies' theoretical and practical implications, though this study lays a foundation for future research.

Albeit the limitations, this study also has several strengths. This cross-sectional study makes use of different sources and methods: 1. Expert ratings, 2. Follower ratings, 3. Video-observations, hence omitting the common source and common method bias. Further, the use of objective codings of the leaders' micro behavior is a reliable and unbiased source when researching leadership behaviors as opposed to behavioral recall ratings. Moreover, the field-study character of this thesis is offering a high degree of context-specificity when researching leadership behavior, as demanded by critiques of extant literature on leadership behavior. A disadvantage of field-studies is the lack of control for extraneous influences and biases. However, this study has controlled for the representativeness of the leaders' behavior in the recorded meeting to assure that the leaders' behavior is not biased due video recording.

**Future Research**

The results of this thesis are contributing to further bridge the research gap of the influence of nonverbal and verbal leadership behavior in the organisational context. Nontheless, there are improvements to the research design that can be implemented in future research. Therefore, the following recommendations are presented for future research:

*Recommendation 1:* One of the aforementioned limitations was the choice of a public organiation as focal point of this study. According to extant literature, there are several differences between public and private organisations. Rainey and colleagues (1976) identified the following differences that may influence the studies outcomes: 1. Due to the lack of market exposure and competition, public organisations have less incentives for efficient and effective performance, 2. Increased complexity of public organisations' objectives leads to vague and intangible evaluation criteria and difficulty in creating incentives for effectivity and efficiency, 3. Public organisations suffer under bureaucratic constraints on procedures and processes, leaving little decision-making autonomy to managers, 4. Employees in the public sector show different character traits and needs as well as lower satisfaction and organisational commitment, which can potentially influence the perceptions of their leaders. Hence, a recommendation for future research is to replicate the current study design in a highly competitive, private sector organisation.

*Recommendation 2*: This thesis utilizes followers' perception of leadership effectiveness (measured directly after recorded meeting) and expert opinions as means to assess the leaders' perceived effectiveness. The latter is supposed to serve as an objective measurement of the leaders' effectiveness. However, individuals are constrained by several factors to objectively rate leadership behavior. Rating an individual's behavior is a highly complex cognitive task (Landy & Farr, 1987), which leads the rater to reduce the complexity of the task by relying on "subjective, prototypical representations" (Hoogeboom & Wilderom, 2015, p. 385). Therefore, it is recommended to utilize direct, unobtrusive measures as objective assessment criteria of leadership effectiveness, such as the leaders' Key Performance Indicators.

*Recommendation 3*: The insignificance relation between verbal behavior and perceived leadership effectiveness provides grounds for future research recommendations. The Netherlands have a low-context culture, meaning that individuals rely on explicit, direct communications rather than nonverbal cues (Hall, 1959). However, the results of this thesis are contradicting this argumentation as none of the verbal behaviors significantly predict perceptions of leadership effectiveness. Future research may focus on taking a more detailed approach of researching the influence of verbal behavior in the organisational context. It can be recommended to further divide the three generic verbal behavior of this study into more detailed, context-specific verbal variables, e.g. by running an exploratory factor analysis.

*Recommendation 4*: The current study has followed a unique approach by researching verbal and nonverbal behavior conjointly. However, recommendations for future research are to not only research nonverbal behavior in co-occurrence with verbal behavior, but also in relation to other nonverbal behaviors. The nonverbal codes researched in this study are not mutually exclusive, therefore it may yield more insights to research nonverbal behaviors concurrently and in relation to verbal behavior (e.g. the relation of smiling displayed while gazing towards followers during relation-oriented behaviors).

**Conclusion**

This thesis aimed to analyze the influence of leaders' verbal and nonverbal behavior on follower and expert perceptions of leadership effectiveness by answering the central research question: *What specific verbal and nonverbal leadership behaviors, displayed by leaders in regularly held meetings, are influencing follower and expert perceptions of leadership effectiveness?*

The findings implicate that the leaders' behavior during regularly held meetings significantly influences follower and expert perceptions of their effectiveness. For the follower perceptions, two nonverbal behaviors showed a significant influence, namely: oculesics and adaptors. Leaders who display less object- and self-adaptors and high durations of gazing towards followers are perceived as more effective. According to the experts, effective leaders display more upward palms and hand gestures in general and maintain a neutral facial expression while engaging in task-oriented behavior. Smiling while listening and task-oriented behavior as well as adaptors and clasped hands during counterproductive and task-oriented behavior are negatively related to the experts' leadership perceptions. Conclusively, the findings presented in this thesis are contributing to further bridge the research gap of the influence of nonverbal and verbal leadership behavior in the organisational context and provide a profound basis for future research to build upon.

# References

Admoni, H., Hayes, B., Feil-Seifer, D., Ullman, D., & Scassellati, B. (2013). Are you looking at me? Perception of robot attention is mediated by gaze type and group size. *Proceedings of the 8th ACM/IEEE international conference on Human-robot interaction*, 389–395. https://doi.org/10.1109/HRI.2013.6483614

Alibali MW, Flevares L, Goldin-Meadow S. (1997) Assessing knowledge conveyed in gesture: Do teachers have the upper hand? *Journal of Educational Psychology*, *89*, 183–193.

Alibali, M. W., Kita, S., & Young, A. J. (2000). Gesture and the process of speech production: We think, therefore we gesture. *Language and Cognitive Processes, 15(6),* 593-613.

Altarriba, J., Basnight, D. M., & Canary, T. M. (2003). Emotion Representation and Perception Across Cultures. *Online Readings in Psychology and Culture, 4*(1). https://doi.org/10.9707/2307-0919.1033

Andersen, P. A. (1999). *Nonverbal communication: Forms and functions*. Houston, Mayfield Publishing Company.

Antonakis, John & J. House, Robert. (2014). Instrumental leadership: Measurement and extension of transformational–transactional leadership theory. *The Leadership Quarterly, 2*5, 746-771. 10.1016/j.leaqua.2014.04.005.

Antonakis, J., Bastardoz, N., Liu, Y., & Schriesheim, C. A. (2014). What makes articles highly cited? *The Leadership Quarterly, 25*, 152-179.

Argentin, G., Ghiglione, R., & Dorna, A. (1990). La gestualité et ses effets dans le discours politique [Gesture and its effect on political discourse]. *Psychologie Française*, *35*, 153-161.

Argyle, M., & Cook, M. (1976). *Gaze and mutual gaze*. Cambridge, Eng.: Cambridge University Press.

Avolio, B. J., & Bass, B. M. (1988). Transformational leadership, charisma, and beyond. In J. G. Hunt, B. R. Baliga, H. P. Dachler, & C. A. Schriesheim (Eds.), *International leadership symposia series. Emerging leadership vistas* (pp. 29-49).

Avolio, B. J., & Yammarino, F.J. (1990). Operationalizing charismatic leadership using a level of analysis framework. *The Leadership Quarterly, 1*, 193-208.

Avolio, B.J., Yammarino, F.J., & Bass, B.M. (1991). Identifying common methods variance with data collected from a single source: An unresolved sticky issue. *Journal of Management, 17*, 571-587.

Avolio, B. J., & Bass, B. M. (1995). Individual consideration viewed at multiple levels of analysis: a multi-level framework for examining the diffusion of transformational leadership. *The Leadership Quarterly, 6(2),* 199–218.

Bailey, A. H., & Kelly, S. D. (2015). Picture power: Gender versus body language in perceived status. *Journal of Nonverbal Behavior, 39(4),* 317–337. https://doi.org/10.1007/s10919-015- 0212-x

Baran, B., Shanock, L., Rogelberg, S., & Scott, C. (2012). Leading Group Meetings: Supervisors' Actions, Employee Behaviors, and Upward Perceptions. *Small Group Research,* 43(3), 330-355.

Bass, B.M. (1985*). Leadership and performance beyond expectations*. New York: Free Press.

Bass, B.M., Avolio, B.J., & Goodheim, L. (1987). Biography and the assessment of transformational leadership at the world class level. *Journal of Management, 13*,7-19.

Bass, B.M. (1990). *Bass and Stogdills handbook of leadership*. New York: Free Press.

Bass, B.M., & Avolio, B.J. (Eds.). (1994). *Improving organizational effectiveness through transformational Leadership*. Thousand Oaks, CA: Sage.

Bass, B. M. 1998. *Transformational leadership: Industrial, military and educational impact*. Mahwah, NJ: Erlbaum.

Bass, B. M., Jung, D. I., Avolio, B. J. & Berson, Y. (2003) Predicting unit performance by assessing transformational and transactional leadership, *Journal of Applied Psychology,* 88, 207–218.

Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad Is Stronger Than Good. *Review of General Psychology, 5*, 323-370. http://dx.doi.org/10.1037/1089-2680.5.4.323

Beattie, G., Shovelton, H. (2000). Iconic hand gestures and predistability of words in context in spontaneous speech. *British Journal of Psychology. 91*, 473–492

Beattie, G., Shovelton, H. (2002). An experimental investigation of some properties of individual iconic gestures that mediate their communicative power. *British Journal of Psychology. 93,* 179–192

Berg, S. T. S., Grimstad, A., Škerlavaj, M., & Černe, M. (2017). Social and economic leader–member exchange and employee creative behavior: The role of employee willingness to take risks and emotional carrying capacity. *European Management Journal, 35(5),* 676-687.

Birdwhistell, R. L. (1970). *Kinesics and context*. Philadelphia: University of Pennsylvania Press.

Bliese, P. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. *Multilevel theory, research, and methods in organizations*, 349–381.

Bonaccio, S., O'Reilly, J., O'Sullivan, S. L., & Chiocchio, F. (2016). Nonverbal behavior and communication in the workplace: A review and an agenda for research. *Journal of Management, 42 (5)*, 1044-1074. https://doi.org/10.1177/0149206315621146

Bono, J. E., & Judge, T. A. (2004). Personality and Transformational and Transactional Leadership: A Meta-Analysis. *Journal of Applied Psychology, 89*, 901-910.  http://dx.doi.org/10.1037/0021-9010.89.5.901

Brown, D. J., & Keeping, L. M. (2005). Elaborating the construct of transformational leadership: The role of affect. *The Leadership Quarterly, 16*(2), 245-272. http://dx.doi.org/10.1016/j.leaqua.2005.01.003

Brunner, L. J. (1979). Smiles can be backchannels. *Journal of Personality and Social Psychology, 37*, 728-734.

Bums, J.M. (1978). *Leadership*. New York: Harper & Row.

Burgoon, J. K., Burk, T., & Pfau, M. (1990). Nonverbal behaviors, persuasion, and credibility. *Human Communication Research*, 17(1), 140–169. https://doi.org/10.1111/j.1468-2958.1990.tb00229.x

Burgoon, J. K., & Hoobler, G. D. (2002). Nonverbal signals. In M. L. Knapp & J. A. Daly (Eds.), *Handbook of interpersonal communication* (3rd ed., pp. 240–299).

Burgoon, J. K., & Dunbar, N. E. 2006. Nonverbal expressions of dominance and power in human relationships. In V. Manusov & M. Patterson (Eds.), *The Sage handbook of nonverbal communication*: 279-297.

Burgoon, J. K., Guerrero, L. K., & Floyd, K. (2010). *Nonverbal communication*. *1*. Boston: Allyn & Bacon

Burgoon, J. K., Guerrero, L. K., & Manusov, V. 2011. Nonverbal signals. In M. L. Knapp & J. Daly (Eds.), *Handbook of interpersonal communication*: 239-280.

Burleson, B. R., & Mortenson, S. R. (2003). Explaining Cultural Differences in Evaluations of Emotional Support Behaviors: Exploring the Mediating Influences of Value Systems and Interaction Goals. *Communication Research*, *30*(2), 113-146.  https://doi.org/10.1177/0093650202250873

Butler, E., Egloff, B., Wilhelm, F., Smith, N., Erickson, E. and Gross, J. (2003) The Social Consequences of Expressive Suppression. *Emotion, 3*, 48-67.  http://dx.doi.org/10.1037/1528-3542.3.1.48

Butterworth, B., & Beattie, G. (1978). *Gestures and silence as indicators of planning in speech*. In R. Campbell & P. Smith (Eds.), Recent advances in the psychology of language: Formal and experimental approaches. NATO Conference Series III:4B. New York: Plenum.

Campbell, A., & Rushton, J. P. (1978). Bodily communication and personality. *British Journal of Social & Clinical Psychology, 17*(1), 31-36. http://dx.doi.org/10.1111/j.2044-8260.1978.tb00893.x

Cashdan, E. (1998). Smiles, speech, and body posture: How women and men display sociometric status and power. *Journal of Nonverbal Behavior*, *22*(4), 209–229. https://doi.org/10.1023/A:1022967721884

Capelli, P., & Sherer, P.D. (1991). The missing role of context in OB: The need for a meso-level approach. *Research in Organizational Behavior, 13*, 55-l 10.

Carney, D. R., Cuddy, A. J. C., & Yap, A. J. (2010). Power Posing: Brief Nonverbal Displays Affect Neuroendocrine Levels and Risk Tolerance. *Psychological Science*, *21*(10), 1363–1368. https://doi.org/10.1177/0956797610383437

Crane, J., & Crane, F. G. (2010). Optimal nonverbal communications strategies physicians should engage in to promote positive clinical outcomes. *Health Marketing Quarterly, 27(3),* 262–274. https://doi.org/10.1080/07359683.2010.495300

Conger, J.A., & Kanungo, R.N. (1987). Toward a behavioral theory of charismatic leadership in organizational settings. *Academy of Management Review, 12*,637-647.

Conger, J.A., & Kanungo, R.N. (1988). The empowerment process: Integrating theory and practice. *Academy of Management Review, 13*,47 l-482.

Cooksey, R. W. (1996). *Judgment analysis: Theory, methods, and applications*. San Diego: Academic Press

Cuddy, A.J.C., Glick, P. . A. B. (2011). The dynamics of warmth and competence judgments, and their outcomes in organization. *Research in Organizational Behavior*, *31*, 73–98.

Dansereau, F., Jr., Graen, G., & Haga, W. J. (1975) A ver- tical dyad linkage approach to leadership within formal organizations-a longitudinal investigation of the role making process. *Organizational Behavior and Human Performance, 13*, 46-78.

Darwin, Charles, 1809-1882. (1859). *On the origin of species by means of natural selection, or preservation of favoured races in the struggle for life*. London: J.Murray

Darioly, A., & Schmid Mast, M. S. (2014). The role of nonverbal behavior in leadership: An

    integrative review. *Leader Interpersonal and Influence Skills: The Soft Skills of*

    *Leadership*, 1771–2335. https://doi.org/10.4324/9780203760536

Den Hartog, D. N., De Hoogh, A. H., & Keegan, A. E. (2007). The interactive effects of

    belongingness and charisma on helping and compliance. *Journal of Applied*

    *Psychology, 92*, 1131– 1139.

De Jong, J. P., & Den Hartog, D. N. (2007). How leaders influence employees' innovative

    behaviour. *European Journal of Innovation Management*, 10(1), 41-64.

DePaulo, B.M. (1992). Nonverbal behaviour and self-presentation. *Psychological Bulletin,*

    *111*, 203-243.

DeRue, D. S., Nahrgang, J. D., Wellman, N., & Humphrey, S. E. (2011). Trait and behavioral

    theories of leadership: An integration and meta-analytic test of their relative validity.

    *Personnel Psychology, 64(1),* 7–52.

Dienesch, M., Liden, R. (1986). Leader-Member Exchange Model of Leadership: A Critique

    and Further Development. The Academy of Management Review. 11. 618.

    10.2307/258314.

Dovidio, J. F., & Ellyson, S. L. (1982). Decoding visual dominance : Attributions of power

    based on relative percentages of looking while speaking and looking while listening.

    *Social Psychology Quarterly*, *45*(2), 106–113.

Dovidio, J. F., Ellyson, S. L., Keating, C. F., Heltman, K., & Brown, C. E. (1988). The

    relationship of social power to visual displays of dominance between men and women.

    *Journal of Personality and Social Psychology, 54,* 233-242.

Driskell, J. E., Olmstead, B., & Salas, E. 1993. Task cues, dominance cues, and influence in task groups. *Journal of Applied Psychology*, 78, 51-60.

Duncan, S. J., Brunner, L. J., & Fiske, D. W. (1979). Stratey signals in face-to-face interaction. *Journal of Personality and Social Psychology*, *37*, 301-313.

Edinger, J. A., & Patterson, M. L. (1983). Nonverbal involvement and social control. *Psychological Bulletin, 93(1),* 30–56. https://doi.org/10.1037/0033-2909.93.1.30

Einarsen, S., Aasland, M. S., & Skogstad, A. ( 2007). Destructive leadership behaviour: A definition and conceptual model. *The Leadership Quarterly, 18*, 207-216.

Eisenberger, R., Stinglhamber, F., Vandenberghe, C., Sucharski, I. L., & Rhoades, L. (2002). Perceived supervisor support: Contributions to perceived organizational support and employee retention. *Journal of Applied Psychology*, *87*, 565-573. doi:10.1037/0021-9010.87.3.565

Ekman, P., & Friesen, W. V. (1969). The repertoire of nonverbal behavior: Categories, origins, usage, and coding. *Semiotica, 1*, 49–98. https://doi.org/citeulike-article-id:5932905

Ekman, P. 1972. Universals and cultural differences in facial expressions of emotions. In J. K. Coles (Ed.), *Nebraska symposium on motivation*: 207-283.

Ekman, P., & Friesen, W. V. (1974). Detecting deception from the body or face. *Journal of Personality and Social Psychology*, 29: 288-298.

Ekman, P. (1976). Movements with Precise Meanings. *Journal of Communication, 26(3),* 14-26.

Ekman, P. (1992). An argument for basic emotions, *Cognition & Emotion, 6*. 3-4, 169-200

Epitropaki, O., & Martin, R. (2004). Implicit Leadership Theories in Applied Settings: Factor Structure, Generalizability, and Stability Over Time. *Journal of Applied Psychology, 89*(2), 293-310. http://dx.doi.org/10.1037/0021-9010.89.2.293

Exline, R. V. (1972). *Visual interaction: The glances of power and preference*. J. K. Cole (Ed.), Nebraska symposium on motivation, 19. 163-206.

Exline, R. V., Gray, D., & Schuette, D. (1985). Visual behavior in a dyad as affected by interview content and sex of respondent. *Journalof Personality and Social Psychology, 1*, 201-209.

Feyereisen, P., & Havard, I. (1999). Mental imagery and production of hand gestures while speaking in younger and older adults. *Journal of Nonverbal Behavior, 23*, 153-171.

Foti, J., & Luch, C. (1992). The influence of individual differences on the perception and categorization of leaders. *The Leadership Quarterly, 3*. 55–66. 10.1016/1048-9843(92)90006-2.

Freedman, N. (1977). Hands, words and mind: On the structuralization of body movement during discourse and the capacity for verbal representation. *Communicative structures and psychic structures: A psychoanalytic interpretation of communication*, 109-132.

Freedman, R. (1979). Theories of Fertility Decline: A Reappraisal. *Social Forces, 58* (1). 1-17.

Galton, F. (1980). Hereditary genius: a centennial problem in resolution of cultural and biological inheritance. *Social Biology*, *27*(1), 48–52. https://doi.org/10.1080/19485565.1980.9988402

Gardner, W. L., Lowe, K. B., Moss, T. W., Mahoney, K. T., & Cogliser, C. C. (2010). Scholarly leadership of the study of leadership: A review of The Leadership Quarterly's second decade, 2000–2009. *The Leadership Quarterly, 21*, 922-958.

Goffman, E. 1959. *The presentation of self in everyday life*. London: Penguin.

Goleman, D. (2000). Leadership that gets results. *Harvard Business Review*, 78-90.

Graen, G., & Cashman, J. (1975) A role-making model of leadership in formal organizations:
A development ap- proach. *J. G. Hunt & L. L. Larson (Eds.), Leadership Frontiers*.
143-165)

Graen, G., & Cashman, J.F. (1975). A role making model of leadership in formal
organizations: A developmental approach. J. G. Hunt & L. L. Larson (eds.), *Leadership
frontiers*.

Graen, G., Novak, M., & Sommerkamp, P. (1982) The effects of leader-member exchange and
job design on productivity and satisfaction: Testing a dual attachment model.
*Organizational Behavior and Human Performance, 30*, 109-131.

Graen, G.B., Uhl-Bien, M. (1995). Relationship-Based Approach to Leadership: Development
of Leader-Member Exchange (LMX) Theory of Leadership over 25 Years: Applying a
Multi-Level Multi-Domain Perspective. *Management Department Faculty
Publications. 57*.

Graen, G.B., Uhl-Bien, M. (1995). Relationship-Based Approach to Leadership: Development
of Leader-Member Exchange (LMX) Theory of Leadership over 25 Years: Applying a
Multi-Level Multi-Domain Perspective. *Management Department Faculty
Publications. 57*.

Greene, J.O. (2003). *Models of adult communication skill acquisition: Practice and the course
of performance improvement*. In J.O. Greene & B.R. Burleson (Eds.), Handbook of
Communication and Social Interaction Skills (pp. 51-91). Mahwah, NJ: Lawrence
Erlbaum

Griffin, C. L., & Bone, J. E. (2016). *Invitation to human communication (2nd ed.)*. Boston, MA: Cengage Learning.

Hadar, U. (1989a). Two types of gesture and their role in speech production. *Journal of Language and Social Psychology*, *8*, 221-228.

Hadar, U. (1989). Two types of gesture and their role in speech production. *Journal of Language and Social Psychology, 8,* 221-228.

Hadar, U., & Yadlin-Gedassy, S. (1994). Conceptual and lexical aspects of gesture: Evidence from aphasia. *Journal of Neurolinguistics, 8*, 57-65.

Hadar, U., & Butterworth, B. (1997). Iconic gestures, imagery and word retrieval in speech. *Semiotica, 115*, 147-172.

Halberstadt, A. G., & Saitta, M. B. (1986). Gender, nonverbal behavior, and perceived dominance: A test of the theory. *Journal of Personality and Social Psychology, 53,* 257- 272.

Hale, J.L.  (2003).  Using social skills models to explain interpersonal communication behavior s:  A  response to the top four papers.  *Presentation to the National Communication Ass ociation*, Miami Beach, FL

Hall, J. A, Coats, E. J., & LeBeau, L. S. (2005). Nonverbal behavior and the vertical dimension of social relations: a meta-analysis. *Psychological Bulletin, 131(6),* 898–924. https://doi.org/10.1037/0033-2909.131.6.898

Harrigan, J. A. 2005. Proxemics, kinesics, and gaze. In J. A. Harrigan, R. Rosenthal, & K. R. Scherer (Eds.), *The new handbook of methods in nonverbal behavior research*. 137-198.

Henley, N. M. 1977. *Body politics: Power, sex and nonverbal communication*. Englewood Cliffs, NJ: Prentice Hall.

Henningsen, D. D., Valde, K. S., & Davies, E. (2005). Exploring the effect of verbal and nonverbal cues on perceptions of deception. *Communication Quarterly*, *53*(3), 359–375. https://doi.org/10.1080/01463370500101329

Hinkin, T. R., & Schriesheim, C. A. (2008). An examination of "nonleadership": From laissez-faire leadership to leader reward omission and punishment omission. *Journal of Applied Psychology, 93,* 1234-1248.

Hogan, R., Curphy, G. J., & Hogan, J. (1994). What we know about leadership. *American Psychologist*, *49*(6), 493–504.

Hoogeboom, A.M.G.M. & Wilderom, C. P. M. (2015a). Effective leader behaviors in regularly held staff meetings. *In The Cambridge Handbook of Meeting Science (pp. 381–412).* New York, NY: Cambridge University Press.

Hoogeboom, A.M.G.M. & Wilderom, C. P. M. (2015b). Integrating two leadership models: Augmentation effects with initiating structure. *In Paper presented at the 75th Annual Academy of Management Conference*, Vancouver, British Columbia. https://doi.org/10.5465/AMBPP.2015.18038abstract

Howell, J.M., 8cAvolio, B.J. (1993). Transformational leadership, transactional leadership, locus of control, and support for innovation. *Journal of Applied Psychology, 78,*891-902.

House, R.J. (1977). A theory of charismatic leadership. In J.G. Hunt & L.L. Larson (eds.), Leadership: The cutting edge. Carbondale, IL: Southern Illinois University.

Hunt, J. (1991). *Leadership: A new synthesis*. Thousand Oaks, CA: Sage.

Huxley, Aldous (1954) *The Doors of Perception*, Chatto and Windus,

James, L. R., Demaree, R. G., & Wolf, G. (1984). Estimating within-group interrater reliability

    with and without response bias. *Journal of Applied Psychology, 69*(1), 85-98.

    http://dx.doi.org/10.1037/0021-9010.69.1.85

Judge, T. A., Bono, J. E., Ilies, R., & Gerhardt, M. W. (2002). Personality and leadership: A

    qualitative and quantitative review. *Journal of Applied Psychology, 87*(4), 765–780.

    https://doi.org/10.1037//0021-9010.87.4.765

Judge, T. A., Colbert, A. E., & Ilies, R. (2004). Intelligence and leadership: A quantitative

    review and test of theoretical propositions. *Journal of Applied Psychology, 89*(3), 542–

    552. https://doi.org/10.1037/0021-9010.89.3.542

Judge, T. A., Piccolo, R. F., & Kosalka, T. (2009). The bright and dark sides of leader traits: A

    review and theoretical extension of the leader trait paradigm. *The Leadership

    Quarterly, 20*(6), 855-875. http://dx.doi.org/10.1016/j.leaqua.2009.09.004

Kahn, W. A. (1992). To Be Fully There: Psychological Presence at Work. *Human

    Relations*, *45*(4), 321–349. https://doi.org/10.1177/001872679204500402

Katz, D., & Kahn, R. L. (1978). *The social psychology of organizations*. New York: Wiley.

Keating, C. F., Mazur, A., Segall, M. H., Cysneiros, P. G., Divale, W. T., Kilbride, J. E.,

    Komin, S., Leahy, P., Thurman, B., & Wirsing, R. (1981). Culture and the perception

    of social dominance from facial expression. *Journal of Personality and Social

    Psychology, 40*, 615– 626.

Keating, C., & Bai, D. (1986). Children's attributions of social dominance from facial cues.

    *Child Development, 57,* 1269-1276.

Keating, C. F. (2006). How and why the silent self speaks volumes: Functional approaches to nonverbal impression management. In M. L. Patterson & V. L. Manusov (Eds.) *Sage Handbook of Nonverbal Communication,* 321-340.

Kendon, A. (2004). *Gesture: Visible action as utterance*. Cambridge, UK: Cambridge University Press.

Kellermann, Natan. (1992). *Focus on Psychodrama: The Therapeutic Aspects of Psychodrama*. London: Jessica Kingsley

Kelly, S. D., & Church, R. B. (1998). A Comparison between Childrens and Adults Ability to Detect Conceptual Information Conveyed Through Representational Gestures. *Child Development,69*(1), 85. doi:10.2307/1132072

Keltner, D., & Haidt, J. (1999). Social functions of emotions at four levels of analysis. *Cognition & Emotion*, *13*(5), 505–522. https://doi.org/10.1080/026999399379168

Kleinke, C. L. 1986. Gaze and eye contact: A research review. *Psychological Bulletin*, *100*: 78-100.

Kolesnikova, Y., & Mykletun, R. J. (2012). *Effective hotel leadership: The MLQ and its predictive effects on LMX, extra effort effectiveness, satisfaction, commitment, motivation and turnover intentions*. University of Stavanger.

Krauss, R. M., Chen, Y., & Chawla, P. (1996). Nonverbal behavior and nonverbal communication: What do conversational hand gestures tell us? *Advances in Experimental Social Psychology, 28,* 389-450.

Kraut, Robert & Johnston, R.E.. (1979). Social and emotional messages of smiling: An ethological approach. *Journal of Personality and Social Psychology, 37*. 1539-1553. 10.1037//0022-3514.37.9.1539.

Kriesberg, M. (1950). Executives evaluate administrative conferences. *Advanced Management, 15.* 15-17

Knapp, L. M, & Hall, A. J. (2010). *Non-Verbal Communication in Human Interaction.* Wadsworth: Cengage Learning.

LaFrance, M., & Hecht, M. A. (1995). Why Smiles Generate Leniency. *Personality and Social Psychology Bulletin*, *21*(3), 207–214. https://doi.org/10.1177/0146167295213002

Landis, C. (1926). Studies of emotional reactions. *Journal of Comparative Psychology*, *6*(3), 188–203. https://doi.org/10.1037/h0071773

Landy, F. J., & J. Farr. (2019). The measurement of work performance : methods, theory, and applications. *Annual review of Psychology, 49.* 141-168

Liden, R., & Graen, G. (1980) Generalizability of the vertical dyad linkage model of leadership. *Academy of Management Journal, 23*, 451-465.

Liden, Robert & Maslyn, John. (1998). Multidimensionafity of Leader-Member Exchange: An Empirical Assessment through Scale Development. *Journal of Management, 24.* 43-72. 10.1177/014920639802400105.

Lord, R.G., Foti, R.J., & De Vader, C.L. (1984). A test of leadership categorization theory:Intemal structure, information processing, and leadership perceptions. *Organizational Behavior and Human Performance, 34*,343-378.

Lowe, K. B., Kroeck, K. G., & Sivasubramaniam, N. (1996). Effectiveness correlates of transformational and transactional leadership: A meta analytic review. *The Leadership Quarterly, 7(3),* 385.

Mahdi, O. R., Mohd, E. S. B. G., & Almsafir, M. K. (2014). Empirical study on the impact of leadership behavior on organizational commitment in plantation companies in Malaysia. *Procedia - Social and Behavioral Sciences*, *109*, 1076–1087. https://doi.org/10.1016/j.sbspro.2013.12.591

Mahl, G. (1956). Disturbances and silences in the patient's speech in psychotherapy. *Journal of Abnormal and Social Psychology*, *53*, 1-15.

Mahl, G. F. (1968). Gestures and body movement in interviews. In J. Schlien (Ed.), *Research in psychotherapy* . Washington, DC: American Psychological Association.

Maricchiolo, Fridanna & Gnisci, Augusto & Bonaiuto, Marino & Ficca, Gianluca. (2009). Effects of different types of hand gestures in persuasive speech on receivers' evaluations. *Language and cognitive processes, 24*. 239-266.

Maricchiolo, F., Livi, S., Bonaiuto, M., & Gnisci, A. (2011). Hand gestures and perceived influence in small group interaction. *The Spanish Journal of Psychology*, *14*(2), 755–64. https://doi.org/10.1177/001872676802100101

Martin, S., Liao, H., & Campbell, E. M. (2013). Comparing empowering leadership and directive leadership on task proficiency and proactivity: A field experiment in the UAE. *Academy of Management Journal, 56,* 1372-1395.

Mashburn A.J., Meyer J.P., Allen J.P., Pianta R.C. (2014). The effect of observation length and presentation order on the reliability and validity of an observational measure of teaching quality. *Educational and Psychological Measurement, 74*. 400–422

Mast, M. 2002. Dominance as expressed and inferred through speaking time: A meta-analysis. *Human Communication Research, 28*, 420-450.

Matsumoto, D., & Hwang, H. C. 2013. Culture and nonverbal communication. In J. A. Hall & M. L. Knapp (Eds.), *Nonverbal communication*, 697-728.

McNeill, D. (1992). Hand and mind: What gestures reveal about thought. Chicago: University Chicago Press.

Michel, J. W., Lyons, B. D., & Cho, J. (2011). Is the full-range model of leadership really a full-range model of effective leader behavior? Journal of Leadership & Organizational Studies, 18(4), 493–507.

Mierlo, H. van, Vermunt, J. K., & Rutte, C. G. (2009). Composing Group-Level Constructs From Individual-Level Survey Data. *Organizational Research Methods*, *12*(2), 368–392. https://doi.org/10.1177/1094428107309322

Montague, E.N., & Asan, O. (2014). Dynamic modeling of patient and physician eye gaze to understand the effects of electronic health records on doctor-patient communication and attention. *International journal of medical informatics, 83 3*, 225-34.

Murphy, K. R., & DeShon, R. (2000). Progress in psychometrics: Can industrial and organizational psychology catch up? *Personnel Psychology, 53*(4), 913-924. http://dx.doi.org/10.1111/j.1744-6570.2000.tb02423.x

Noureddine, D. (2015). The problem of effective leadership from the perspective of corporate management development. *Procedia - Social and Behavioral Sciences, 181*, 62–71. https://doi.org/10.1016/j.sbspro.2015.04.866

Offermann, L. R., Kennedy, J. K., Jr., & Wirtz, P. W. (1994). Implicit leadership theories: Content, structure, and generalizability. *The Leadership Quarterly*, *5*, 43–58. doi: 10.1016/1048-9843(94)90005-1

Olivola, C. Y., Eubanks, D. L., & Lovelace, J. B. 2014. The many (distinctive) faces of leadership: Inferring leadership domain from facial appearance. *The Leadership Quarterly*, 25: 817-834.

Otara, A. (2011). Perception: A guide for managers and leaders. *Journal of Management and Strategy*, *2*(3), 21–24. https://doi.org/10.5430/jms.v2n3p21

Park, L. E., Streamer, L., Huang, L., & Galinsky, A. D. 2013. Stand tall, but don't put your feet up: Universal and culturally-specific effects of expansive postures on power. *Journal of Experimental Social Psychology*, 49: 965-971.

Pearce, C. L., & Conger, J. A. (2003). *Shared leadership:Reframing the hows and whys of leadership.* Tliousand Oaks, CA: Sage.

Peterson, N. (1997). Demand sharing: sociobiology and the pressure for generosityamong foragers. *Australian Aboriginal Studies in Honour of L. R. Hiatt,* 171–190. Canberra, AU: Aboriginal Studies Press.

Perkins, R. D. (2009). How executive coaching can change leader behavior and improve meeting effectiveness: An exploratory study. *Consulting Psychology Journal: Practice and Research, 61(4)*, 298–318. https://doi.org/10.1037/a0017842

Piccolo, R. F., Bono, J. E., Heinitz, K., Rowold, J., Duehr, E., & Judge, T. A. (2012). The relative impact of complementary leader behaviors: Which matter most? *Leadership Quarterly, 23(3),* 567–581. https://doi.org/10.1016/j.leaqua.2011.12.008

Podsakoff, P.M., MacKenzie, S.B., Moorman, R.H., & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *Leadership Quarterly, l(2),* 107-142.

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, *63*(1), 539–569. https://doi.org/10.1146/annurev-psych-120710-100452

Poggi, I., & Vincze, L. (2008). The persuasive import of gesture and gaze. In *Proceeding on the workshop on Multimodal Corpora, LREC, Marrakech*.

Peterson, R. S., Smith, D. B., Martorana, P. V, & Owens, P. D. (2003). The impact of chief executive officer personality on top management team dynamics:one mechanism by which leadership affects organizational performance. *The Journal of Applied Psychology*, *88*(5), 795–808. https://doi.org/10.1037/0021-9010.88.5.795

Rackham, N., & Morgan, T. (1977). *Behavior analysis in training*. McGraw-Hill, London; New York.

Rafferty, A. E., & Griffin, M. A. (2004). Dimensions of transformational leadership: Conceptual and empirical extensions. *The Leadership Quarterly, 15*, 329-354.

Richmond, V. P., & McCroskey, J. C. (2000). The impact of supervisor and subordinate immediacy on relational and organizational outcomes. *Communication Monographs*, *67*, 85–87.

Ridgeway, C. L., Berger, J., & Smith, L. (1985). Nonverbal cues and status: An expectation states approach. *American Journal of Sociology, 90,* 955–978.

Ridolphi, J., & Seers, A. (1984). *Leader behavior versus leader-member exchange: A competitive test.* Paper presented at the Southeast Decision Sciences meeting, Williamsburg, VA.

Rime`, B., & Schiaratura, P. (1991). Gesture and speech. *Fundamentals of nonverbal behavior*, 239-281. New York: Cambridge University Press.

Rogelberg, S. G., Leach, D.J., Warr, P. B., & Burnfield, J. L. (2006). "Not Another Meeting!" Are meeting time demands related to employee well-being? *Journal of Applied Psychology, 91(1),* 83–96. https://doi.org/10.1037/0021-9010.91.1.83

Rogelberg, S. G., Scott, C., & Kello, J. (2007). The science and fiction of meetings. MIT Sloan *Management Review, 48(2),* 18–21. Retrieved from http://sloanreview.mit.edu/article/the- science-and-fiction-of-meetings/

Rogelberg, S. G., Allen, J. A., Shanock, L., Scott, C. and Shuffler, M. (2010). Employee satisfaction with meetings: A contemporary facet of job satisfaction. *Human Resource Management Review, 49*, 149–172. https://doi.org/doi:10.1002/hrm.20339

Rooney, J. A., & Gottlieb, B. H. (2007). Development and initial validation of a measure of supportive and unsupportive managerial behaviors. *Journal of Vocational Behavior, 71*(2), 186-203. http://dx.doi.org/10.1016/j.jvb.2007.03.006

Rosenfeld, H. M. (1996). Instrumental affiliative functions of facial and gestural expressions. *Journal of Personality and Social Psychology,4,* 65-72.

Rousseau, D.M. (1985). Issues of level in organizational research: Multi-level and cross-level perspectives. *Research in organizational behavior, 7*, l-37.

Rowold, J., & Heinitz, K. (2007). Transformational and charismatic leadership: Assessing the convergent, divergent and criterion validity of the MLQ and the CKS. *The Leadership Quarterly, 18(2),* 121-133.

Russo, N. F. (1975). Eye contact, interpersonal distance, and the equilibrium theory. *Journal of Personality and Social Psychology*, 31, 497-502.

Salancik, J.R., Calder, B.J., Rowland, K.M., Leblebici, H., & Conway, M. (1985). Leadership as an outcome of social structure and process: A multidimensional analysis. *Leadership frontiers*, 81-101

Schwartzman, H. B. (1986). The meeting as a neglected social form in organizational studies. *Research in organizational behavior,* 233–258.

Schyns, Birgit & Schilling, Jan. (2013). How bad are the effects of bad leaders? A meta-analysis of destructive leadership and its outcomes. *The Leadership Quarterly. 24*. 138–158.

Seers, A., & Graen, G.B. (1984). The dual attachment concept: A longitudinal investigation of the combination of task characteristics and leader-member exchange. *Organizational Behavior & Human Performance, 33*, 283-306.

Shaw, J. B. (1990). A cognitive categorization model for the study of intercultural management. *The Academy of Management Review, 15*(4), 626-645. http://dx.doi.org/10.2307/258685

Shondrick, S. J., & Lord, R. G. (2010). Implicit leadership and followership theories: Dynamic structures for leadership perceptions, memory and leader-follower processes. *International review of industrial and organizational psychology, 25,* 1-33.

Spisak, B. R., Grabo, A. E., Arvey, R. D., & van Vugt, M. 2014. The age of exploration and exploitation: Younger- looking leaders endorsed for change and older-looking leaders endorsed for stability. *The Leadership Quarterly*, 25: 805-816.

Srull, K.T. & Wyer, Jr. (1989). Person Memory and Judgment. *Psychological review, 96* 58-83. 10.1037/0033-295X.96.1.58.

Stamp, G, H. & Knapp, M. L. (1990). The construct of intent in interpersonal communication. *Quarterly Journal of Speech*, 76 (3), 282-99. https://doi.org/10.1080/00335639009383920

Stein, R. T. (1975). Identifying emergent leaders from verbal and nonverbal communications. *Journal of Personality and Social Psychology*, *32*, 125–135.

Sy, T. (2010). What do you think of followers? Examining the content, structure, and consequences of implicit followership theories. *Organizational Behavior and Human Decision Processes. 113*. 73-84.

Talley, L., L. (2012). *Influence of leader hand gestures on the perception of nonverbal immediacy*. PhD Doctoral dissertation, Walden University.

Talley, L., & Temple, S. (2015). How leaders influence followers through the use of nonverbal communication. *Leadership & Organization Development Journal*, *36*(1), 69–80. https://doi.org/10.1108/LODJ-07-2013-0107

Tepper, Bennett & Duffy, Michelle & Henle, Chris & SCHURER LAMBERT, LISA. (2006). Procedural injustice, victim precipitation, and abusive supervision. *Personnel Psychology. 59*. 101 - 123.

Tichy, N.M., & Devanna, M.A. (I 986). *The transformational leader*. New York: Wiley.

Tickle-Degnen, L. 2006. Nonverbal behavior and its functions in the ecosystem of rapport. In V. Manusov & M. L. Patterson (Eds.), *The Sage handbook of nonverbal communication*: 381-401. Thousand Oaks, CA: Sage.

Tosi, H.L. (1992). The environment/organization/person (EOP) contingency model: A meso approach to the study of organization. *Monographs in Organizational Behavior and Industrial Relations*, *14*. Greenwich, CT: JAI Press.

Trite, H.M., & Beyer, J.M. (1986). Charisma and its routinization in two social movement organizations. *Research in Organizational Behavior, 8 (1)*. 13-164.

Tskhay, K. O., Xu, H., & Rule, N. O. (2014). Perceptions of leadership success from nonverbal cues communicated by orchestra conductors. *Leadership Quarterly, 25*(5), 901–911. https://doi.org/10.1016/j.leaqua.2014.07.001

Van Dun, D. H., Hicks, J. N., & Wilderom, C. P. M. (2016). Values and behaviors of effective lean managers: Mixed-methods exploratory research. *European Management Journal*, *1*(13). https://doi.org/10.1016/j.emj.2016.05.001

Van Knippenberg, D., & Sitkin, S. B. (2013). A critical assessment of charismatic-transformational leadership research: Back to the drawing board? *The Academy of Management Annals, 7(1),* 1-60.

Van Woerkom, M., & Meyers, M.C. (2015). My strengths count! Effects of a strengths-based psychological climate on positive effect and job performance. *Human Resource Management*, 54(1), 81-103.

Wakabayashi, M., & Graen, G.B. (1984). The Japanese career progress study: A 7-year follow-up. *Journal of Applied Psychology, 69*, 603-614 .

Waldman, D.A., Bass, B.M., & Einstein, W.O. (1987). Leadership and outcomes of performance appraisal processes. *Journal of Occupational Psychology, 60.* 177-186

Waldman, D. A., Bass, B. M., & Yammarino, F. J. (1990). Adding to contingent-reward behavior: The augmenting effect of charismatic leadership. *Group & Organization Management, 15(4),* 381-394.

Watzlawick, P., Beavin, J. H., & Jackson, D. D. (1967). *Pragmatics of human communication*. New York, NY: Norton.

Wayne, S., Shore, L., Bommer, W., & Tetrick, L. (2002). The role of fair treat- ment and rewards in perceptions of organizational support and leader-member exchange. *Journal of Applied Psychology*, *87*, 590-598. doi:10.1037/0021- 9010.87.3.590

Weide, J. G. Van der, & Wilderom, C. P. M. (2004). Deromancing leadership: what are the behaviours of highly effective middle managers? *International Journal of Management Practice*, 1(1), 3–20. https://doi.org/10.1504/IJMP.2004.004867

Weisbuch, M., & Ambady, N. Thin slice vision. (2010), *Social Vision*, 28-247, Oxford University Press.

Wiener, M., Devoe, S., Rubinow, S., & Geller, J. (1972). Nonverbal behavior and nonverbal communication. *Psychological Review, 79*(3), 185-214.

Yammarino, F.J., & Bass, B.M. (1990). Transformational leadership and multiple levels of analysis. *Human Relations, 43*, 975-995.

Yammarino, F.J., & Dubinsky, A.J. (1992). Superior-subordinate relationships: A multiple levels of analysis approach. Human Relations, 45, 575-600.

Yukl, G.A. (1989). Managerial leadership: A review of theory and research. *Journal of Management*, Z5(2), 251-289.

Yukl, G., Wall, S., & Lepsinger, R. (1990). Preliminary report on validation of the managerial

    practices survey. In K. E. Glark & M. B. Glark (Eds.), *Measures of leadership,* 223-

    238. West Orange, Leadership Library of America.

Yukl, G. A. (1999). An evaluative essay on current conceptions of effective leadership.

    *European Journal of Work and Organizational Psychology, 8(1),* 33-48.

Yukl, G., Gordon, A., & Taber, T. (2002). A hierarchical taxonomy of leadership behavior:

    Integrating a half century of behavior research, *Journal of Leadership amd*

    *Organizational Studies, 9,* 15-32.

Yukl, G. A. (2006). *Leadership in organizations (6th ed.).* Upper Saddle River, NJ: Prentice

    Hall.

Yukl, G. (2008). How Leaders Influence Organizational Effectiveness. *The Leadership*

    *Quarterly, 19*, 708-722. http://dx.doi.org/10.1016/j.leaqua.2008.09.008

Yukl, G. (2012). Effective leadership behavior: What we know and what questions need more

    attention. Academy Af Management Perspectives, 26(4), 66–85.

    https://doi.org/10.5465/amp.2012.0088

Zaccaro, S. J., Rittman, A. L., & Marks, M. A. (2001). Team Leadership. *Leadership*

    *Quarterly*, *12*, 451-483. http://dx.doi.org/10.1016/S1048-9843(01)00093-5

Table 1 *Meta categories of Leadership Behavior*

| Task-oriented | Clarifying |
|---|---|
| | Planning |
| | Monitoring operations |
| | Problem solving |
| Relations-oriented | Supporting |
| | Developing |
| | Recognizing |
| | Empowering |
| Change-oriented | Advocating change |
| | Envisioning change |
| | Encouraging innovation |
| | Facilitating collective learning |
| External | Networking |
| | External monitoring |
| | Representing |

Source: Yukl, G. (2012). Effective leadership behavior: What we know and what questions need more attention. *Academy Af Management Perspectives*,

**Appendix B**

Table 1 *Codes of Nonverbal Communication*

| Category | Definition | Nonverbal Examples | Examples of Common Methods and Measures |
|---|---|---|---|
| Vocalics (paralanguage or prosody) | Communication through voice qualities | Characteristics (e.g., laugh), qualifiers (e.g., pitch, volume), segregates (e.g., "eh," "hmm"), silence | Checklist of qualities associated with vocal production (see http://ncvs.org/e-learning/ tutorials/qualities.html).<br>Software: for example, PRAAT (freely available at http://www.fon.hum.uva.nl/praat/).<br>National Center for Voice and Speech (http://www.ncvs.org/). See their tutorials for a helpful guide: http://ncvs.org/e-learning/tutorials/index.html. |
| Olfactics | Communication through smell | Body odor, use of perfume or cologne | The Sniffin' Sticks Test assesses threshold, discrimination, and identification of odors (Hummel, Sekinger, Wolf, Pauli, & Kobal, 1997).<br>The proxemics notation system (E. T. Hall, 1973) includes an olfaction component. |
| Spatiotemporal Codes | | | |
| Proxemics | Communication through physical space | Personal space, territory | Projective approaches ask participants to imagine their comfort distance with another person and indicate it by manipulating figurines or choosing among several photographs, for example. See also the Comfort Interpersonal Distance Scale (Duke & Nowicki, 1972).<br>The proxemics notation system (E. T. Hall, 1973) includes distance, posture, orientation of body, touch, vision, audition, olfaction, and temperature.<br>Harrigan and Carney (2005; see Kinetics, above). |
| Chronemics | Communication through the use of time | Talk time, body speed | Software designed to analyze voice quality (such as PRAAT) can measure speech rate (also called velocity of speech; see Juslin & Scherer, 2005).<br>Response latencies in computer-mediated communication, such as e-mail.<br>Gait speed can be assessed via technology, such as GPS, infrared sensors, or stopwatches (i.e., manual chronometry; Doyen, Klein, Pichon, & Cleeremans, 2012).<br>Individual and organizational differences in time preferences can be assessed through questionnaires (e.g., Bluedorn, Kalliath, Strube, & Martin, 1999; Poposki & Oswald, 2010). |
| Environment and Artifacts | Communication through objects | Built environments, design and objects, landscape of natural environments | The servicescape literature (e.g., see Table 1 in Ezeh & Harris, 2007) discusses aspects of the physical environment that contain communicative properties.<br>Approaches to organizational culture that focus on artifacts (e.g., Rafaeli & Pratt, 2006). |

| Category | Definition | Nonverbal Examples | Examples of Common Methods and Measures |
|---|---|---|---|
| **Body Codes** | | | |
| Kinesics | Communication through body movement | Facial expressions, gestures, interactive synchrony, posture (the majority of the work has focused on movement of hands and head; Harrigan, 2005) | Facial kinesics<br>• Facial Action Coding System (Ekman, Friesen, & Hager, 2002; Scherer & Ekman, 2005): Most used coding scheme. See Cohn and Ekman (2005) for other coding systems and how to evaluate coding systems.<br>• Automated analysis: Computer software that automatically measures and recognizes NVB, especially used to measure facial action (Cohn & Kanade, 2007). See Cohn and Ekman (2005) for technical considerations.<br>• Electromyography: Uses electrodes to measure muscular activity. It is useful for capturing emotional responses that are quick and short (Cohn & Ekman, 2005).<br>Nonfacial kinesics<br>• Ekman and Friesen (1969b). Codes for adaptors, emblems, illustrators, regulators, and affect display. Still widely used.<br>• Harrigan and Carney (2005; see also Harrigan, 2005: 181). Codes for body positions, body actions, head actions, and proxemics.<br>• The Bernese System: Kinesics are recorded by numerical codes plotted on Cartesian axes (see Harrigan, 2013).<br>• Software for coding audiovisual data: http://www.anvil-software.org/. |
| Appearance (including chromatics) | Communication through one's appearance | Attire, makeup, height, weight, attractiveness | See Todorov, Olivola, Dotsch, and Mende-Siedlecki (2015) for a review of work on social attributions made from facial appearance (see also Facial Kinesics, above). |
| Oculesics | Communication via the eyes | Eye contact, pupil dilation, blinking, eye movements | Eye-tracking instruments and software: (Eizenman et al., 2003; Harrigan, 2005). Frequency/total/average duration of individual gaze/proportion of time gazing.<br>Recording facial orientation: Used as a proxy for gaze (Harrigan, 2013). |
| **Sensory and Contact Codes** | | | |
| Haptics | Communication through touch | Types of touch, touch avoidance | Touch Log Record (Jones, 2005) and The Body Chart (Andersen & Guerrero, 2005) record the location and characteristics of touch. |

Table 2 *Functions of Nonverbal Behavior in Organisations*

| Function | Select Relevant Topics in Organizational Research | Sample Organizational Research Questions and Problems |
|---|---|---|
| Display Personal Attributes | • Recruitment, selection, and assessment<br>• Performance appraisal<br>• Detection of dishonesty<br>• Displays of integrity | • Which NVB cues are most relevant to assessment/selection decisions, and how do they influence assessors?<br>• How might context moderate the influence of NVBs on assessment/selection decisions?<br>• How might assessors best be trained to discern deception versus integrity? |
| Exercise Social Control and Establish Hierarchy | • Power and dominance<br>• Abusive supervision<br>• Harassment/bullying<br>• Discrimination<br>• Negotiation<br>• Socialization<br>• Organizational culture<br>• Executive influence | • How might NVB displays of dominance influence negotiations or conflict management?<br>• How might hostile NVB codes differ depending on relationship (e.g., supervisor-subordinate vs. coworker)?<br>• How might sensitivity training help in detecting, documenting, and minimizing hostile NVBs in the workplace?<br>• To what extent do hostile NVBs affect organizational climate? |
| Promote Social Functioning | • Charismatic leadership<br>• Motivation<br>• Trust<br>• Interactional justice<br>• Organizational commitment | • How might NVB denoting diversity (e.g., appearance cues, such as the wearing of religious symbols) influence ascriptions of charisma, credibility, and persuasiveness?<br>• How might NVB enhance or detract from perceptions of interactional justice?<br>• Are the different types of commitment associated with different NVBs? |
| Foster High-Quality Relationships | • Teams<br>• Mentoring<br>• Leader-follower exchange<br>• Workplace compassion<br>• Organizational identity | • How might NVB denoting rapport operate in specific organizational contexts, such as mentor-mentee relationships and leader-member exchange?<br>• How might NVB, other than chronemics, influence synchrony in team contexts?<br>• How does NVB mimicry develop in leader-follower or mentor/protégé relationships? |
| Emotional Displays | • Emotional labor<br>• Emotional management<br>• Emotional leakage<br>• Emotional contagion | • Which NVBs are most relevant to the suppression of negative emotions and the display of positive emotions?<br>• Are some NVBs more likely to betray inauthentic emotional labor (or which NVBs are more prone to leakage)?<br>• How do NVBs support verbal communication to produce emotional contagion? |

Source: Bonaccio, S., O'Reilly, J., O'Sullivan, S. L., & Chiocchio, F. (2016). *Nonverbal behavior and communication in the workplace: A review and an agenda for research. Journal of Management*

# Appendix C

Table 1 *Descriptives of One-way ANOVA for the most, moderate and least effective leaders - perceived by followers[1]*

**Descriptives Followers**

| | | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Minimum | Maximum |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Lower Bound | Upper Bound | | |
| Object-touch while counterproductive behavior | 1.00 | 14 | 0,1801 | 0,24314 | 0,06498 | 0,0397 | 0,3205 | 0,00 | 0,80 |
| | 2.00 | 14 | 0,0175 | 0,03270 | 0,00874 | -0,0014 | 0,0364 | 0,00 | 0,10 |
| | 3.00 | 15 | 0,2098 | 0,27766 | 0,07169 | 0,0560 | 0,3636 | 0,00 | 0,76 |
| | Total | 43 | 0,1375 | 0,22715 | 0,03464 | 0,0676 | 0,2074 | 0,00 | 0,80 |
| Adapters (Self and object) while task-oriented behavior | 1.00 | 15 | 0,0762 | 0,04546 | 0,01174 | 0,0510 | 0,1014 | 0,01 | 0,19 |
| | 2.00 | 14 | 0,0801 | 0,04680 | 0,01251 | 0,0531 | 0,1071 | 0,00 | 0,15 |
| | 3.00 | 16 | 0,1268 | 0,08024 | 0,02006 | 0,0840 | 0,1695 | 0,00 | 0,29 |
| | Total | 45 | 0,0954 | 0,06370 | 0,00950 | 0,0763 | 0,1145 | 0,00 | 0,29 |
| Gazing towards followers while listening | 1.00 | 14 | 0,7792 | 0,13459 | 0,03597 | 0,7015 | 0,8569 | 0,56 | 0,94 |
| | 2.00 | 12 | 0,7257 | 0,18701 | 0,05399 | 0,6069 | 0,8446 | 0,25 | 0,95 |
| | 3.00 | 16 | 0,8705 | 0,07191 | 0,01798 | 0,8322 | 0,9089 | 0,71 | 0,97 |
| | Total | 42 | 0,7987 | 0,14395 | 0,02221 | 0,7539 | 0,8436 | 0,25 | 0,97 |
| Gazing away from followers while listening | 1.00 | 14 | 0,1104 | 0,06729 | 0,01798 | 0,0715 | 0,1492 | 0,03 | 0,22 |
| | 2.00 | 12 | 0,1371 | 0,09351 | 0,02700 | 0,0777 | 0,1965 | 0,03 | 0,37 |
| | 3.00 | 16 | 0,0647 | 0,03596 | 0,00899 | 0,0456 | 0,0839 | 0,02 | 0,14 |
| | Total | 42 | 0,1006 | 0,07196 | 0,01110 | 0,0782 | 0,1230 | 0,02 | 0,37 |
| Neutral Facial Expression (freq) | 1.00 | 15 | 33,4470 | 13,91244 | 3,59218 | 25,7425 | 41,1514 | 5,76 | 54,58 |
| | 2.00 | 14 | 48,9783 | 12,72560 | 3,40106 | 41,6307 | 56,3258 | 23,21 | 75,89 |
| | 3.00 | 16 | 42,6420 | 12,69285 | 3,17321 | 35,8784 | 49,4055 | 19,44 | 63,77 |
| | Total | 45 | 41,5483 | 14,30838 | 2,13297 | 37,2496 | 45,8470 | 5,76 | 75,89 |
| Clasped hands (freq) | 1.00 | 14 | 41,2171 | 16,95949 | 4,53261 | 31,4250 | 51,0092 | 17,22 | 76,88 |
| | 2.00 | 13 | 66,5455 | 47,69626 | 13,22856 | 37,7229 | 95,3680 | 4,39 | 150,75 |
| | 3.00 | 15 | 33,0616 | 25,22699 | 6,51358 | 19,0914 | 47,0319 | 1,00 | 101,93 |
| | Total | 42 | 46,1442 | 34,31058 | 5,29424 | 35,4522 | 56,8361 | 1,00 | 150,75 |

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[1] 1=least effective, 2=moderately effective, 3=most effective perceived by followers

Table 2 *Descriptives of One-way ANOVA for the most, moderate and least effective leaders - rated by experts[2]*

**Descriptives Experts**

| | | N | Mean | Std. Deviation | Std. Error | Mean Lower Bound | Upper Bound | Minimum | Maximum |
|---|---|---|---|---|---|---|---|---|---|
| Gazing towards followers while counterproductive behavior | 1.00 | 16 | 0,7288 | 0,21669 | 0,05417 | 0,6133 | 0,8443 | 0,28 | 1,00 |
| | 2.00 | 22 | 0,8828 | 0,14386 | 0,03067 | 0,8190 | 0,9466 | 0,53 | 1,00 |
| | Total | 38 | 0,8179 | 0,19162 | 0,03108 | 0,7550 | 0,8809 | 0,28 | 1,00 |
| Functional Gaze while counterproductive behavior | 1.00 | 16 | 0,1407 | 0,19486 | 0,04872 | 0,0368 | 0,2445 | 0,00 | 0,57 |
| | 2.00 | 22 | 0,0206 | 0,05613 | 0,01197 | -0,0043 | 0,0454 | 0,00 | 0,20 |
| | Total | 38 | 0,0711 | 0,14420 | 0,02339 | 0,0237 | 0,1185 | 0,00 | 0,57 |
| Gazing away from followers while counterproductive behavior | 1.00 | 16 | 0,1356 | 0,10834 | 0,02709 | 0,0779 | 0,1933 | 0,00 | 0,36 |
| | 2.00 | 22 | 0,0586 | 0,07193 | 0,01534 | 0,0267 | 0,0905 | 0,00 | 0,23 |
| | Total | 38 | 0,0910 | 0,09581 | 0,01554 | 0,0595 | 0,1225 | 0,00 | 0,36 |
| Neutral Facial Expression while task-oriented behavior | 1.00 | 16 | 0,9500 | 0,03790 | 0,00947 | 0,9298 | 0,9702 | 0,89 | 1,00 |
| | 2.00 | 22 | 0,9711 | 0,01543 | 0,00329 | 0,9643 | 0,9780 | 0,94 | 1,00 |
| | Total | 38 | 0,9622 | 0,02880 | 0,00467 | 0,9527 | 0,9717 | 0,89 | 1,00 |
| Open smile while task-oriented behavior | 1.00 | 16 | 0,0400 | 0,03712 | 0,00928 | 0,0202 | 0,0598 | 0,00 | 0,11 |
| | 2.00 | 22 | 0,0152 | 0,01114 | 0,00237 | 0,0103 | 0,0201 | 0,00 | 0,04 |
| | Total | 38 | 0,0256 | 0,02798 | 0,00454 | 0,0165 | 0,0348 | 0,00 | 0,11 |
| Smiling while task-oriented behavior | 1.00 | 16 | 0,0216 | 0,01985 | 0,00496 | 0,0110 | 0,0322 | 0,00 | 0,06 |
| | 2.00 | 22 | 0,0097 | 0,00659 | 0,00141 | 0,0067 | 0,0126 | 0,00 | 0,02 |
| | Total | 38 | 0,0147 | 0,01484 | 0,00241 | 0,0098 | 0,0196 | 0,00 | 0,06 |
| Gazing towards followers while speaking | 1.00 | 16 | 0,7397 | 0,11493 | 0,02873 | 0,6784 | 0,8009 | 0,53 | 0,92 |
| | 2.00 | 22 | 0,8206 | 0,10587 | 0,02257 | 0,7736 | 0,8675 | 0,52 | 0,97 |
| | Total | 38 | 0,7865 | 0,11556 | 0,01875 | 0,7485 | 0,8245 | 0,52 | 0,97 |
| Gazing away from followers while speaking | 1.00 | 16 | 0,1294 | 0,05613 | 0,01403 | 0,0995 | 0,1593 | 0,04 | 0,22 |
| | 2.00 | 22 | 0,0895 | 0,05259 | 0,01121 | 0,0662 | 0,1128 | 0,01 | 0,24 |
| | Total | 38 | 0,1063 | 0,05697 | 0,00924 | 0,0875 | 0,1250 | 0,01 | 0,24 |
| Functional Gaze while speaking | 1.00 | 16 | 0,1343 | 0,09581 | 0,02395 | 0,0833 | 0,1854 | 0,02 | 0,33 |
| | 2.00 | 22 | 0,0764 | 0,05288 | 0,01127 | 0,0529 | 0,0998 | 0,00 | 0,19 |
| | Total | 38 | 0,1008 | 0,07842 | 0,01272 | 0,0750 | 0,1266 | 0,00 | 0,33 |

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[2] 1=least effective, 2=moderately effective, 3=most effective rated by followers

Table 1 *Results of Hypotheses 1 - 12*

| Nr. | Hypotheses | accepted/rejected |
|---|---|---|
| 1 | Relation-oriented and task-oriented verbal behavior displayed by the leader in regularly held staff meetings are positively related to the followers' perception of leadership effectiveness. | Rejected |
| 2 | Counterproductive verbal behavior displayed by the leader in regularly held staff meetings is negatively related to the followers' perception of leadership effectiveness. | Rejected |
| 3 | Displaying upward palm gestures by the leaders during regular staff meetings is positively related to follower perceptions of their leadership effectiveness. | Rejected |
| 4 | Displaying downward palm gestures, adaptors and clasped hands by the leader is negatively related to perceived leadership effectiveness. | Partly accepted for adapters based on followers and expert scores |
| 5 | Displaying smiling behavior by the leader is influencing perceived leadership effectiveness. | Rejected |
| 6 | Displaying neutral facial expressions (no mouth movement) by the leader is negatively related to perceived leadership effectiveness. | Rejected |
| 7 | Gazing towards followers has a positive effect while gazing away from followers has a negative effect on perceived leadership effectiveness. | Accepted based on followers scores |
| 8 | Hand gestures (Up & Downwards, Mixed) displayed while engaging in verbal behavior (task-, relation-oriented and counter productive) is positively related to perceived leadership effectiveness. | Accepted based on expert scores |

| | | |
|---|---|---|
| 8a | Upward Palms displayed while engaging in verbal behavior (task-, relation-oriented and counter productive) is positively related to perceived leadership effectiveness. | Accepted for Upward palms during counterproductive behavior based on expert ratings |
| 8b | Downward Palms, adaptors and clasped hands displayed while engaging in verbal behavior (task-, relation-oriented and counter productive) is negatively related to perceived leadership effectiveness. | Accepted for clasped hands while counterproductive and task-oriented behavior based on expert ratings |
| 9 | Gazing towards followers while engaging in verbal behavior (task-, relation-oriented and counter productive) and listening is positively related to perceived leadership effectiveness. | Accepted for gazing towards followers while listening based on follower scores. |
| 9a | Gazing away from followers while engaging in verbal behavior (task-, relation-oriented and counter productive) and listening is negatively related to perceived leadership effectiveness. | Accepted for functional gaze while counterproductive behavior and gazing away while listening based on follower scores |
| 10 | Smiling (open & closed) while engaging in verbal behavior (task-, relation-oriented and counter productive) and listening has an effect on perceived leadership effectiveness. | Accepted for Smiling while task-oriented behavior and listening based on experts scores |
| 11 | Neutral Facial expression (no mouth movement) while engaging in verbal behavior (task-, relation-oriented and counter productive) and listening is negatively related to perceived leadership effectiveness. | Rejected, reverse effect for Neutral Facial Expression while task oriented behavior based on experts scores |
| 12 | Adaptors (Object, Body, Head) expression while engaging in verbal behavior (task-, relation-oriented and counter productive) and listening is negatively related to perceived leadership effectiveness. | Rejected |

Table 1 *Correlations Verbal Behavior[3]*

|  |  | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| Task-oriented behavior | Pearson Correlation | .092 | .066 |
| Relation-oriented behavior | Pearson Correlation | -.072 | -.145 |
| Counterproductive behavior | Pearson Correlation | .004 | .016 |

Table 2 *Correlations Gestures while counterproductive behavior*

*Correlations*

|  |  | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| No Gesture | Pearson Correlation | -.239 | -.013 |
| Upward palms | Pearson Correlation | -.098 | .313 |
| Downwardinward palms | Pearson Correlation | .221 | .192 |
| Mixed palms | Pearson Correlation | -.128 | .189 |
| Clasped hands | Pearson Correlation | .113 | -.330 |
| Hand gestures (up, down 6 mixed) | Pearson Correlation | .058 | .363 |
| Hand gestures (up & down) | Pearson Correlation | .170 | .273 |

Table 3 *Correlations Facial Expression while counterproductive behavior*

|  |  | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| Neutral Facial expression | Pearson Correlation | -.081 | -.181 |
| Open smile | Pearson Correlation | .070 | .126 |
| Closed smile | Pearson Correlation | .055 | .186 |
| Lipcorners down | Pearson Correlation | .009 | -.023 |
| Smile (open & closed) | Pearson Correlation | .082 | .186 |

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[3] LeEff_Follwers represent the Followers' leadership effectiveness perception ratings
LeEff_Experts represent the Expert Leadership effectiveness scores

Table 4 *Correlations Adaptors while counterproductive behavior*

| | | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| Objecttouch | Pearson Correlation | -.065 | .047 |
| Selftouchheadarea | Pearson Correlation | -.122 | -.202 |
| Selftouch body | Pearson Correlation | .097 | -.045 |
| Touches (object & self) | Pearson Correlation | -.052 | -.032 |
| Selftouch (body & head) | Pearson Correlation | .019 | -.145 |

Table 5 *Correlations Gazing while counterproductive behavior*

| | | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| Gazing towards group | Pearson Correlation | .191 | .250 |
| Gazing away from group | Pearson Correlation | .142 | -.054 |
| Functional Gaze | Pearson Correlation | -.372[*] | -.281 |
| Gazing functional & towards followers | Pearson Correlation | -.142 | .054 |
| Gazing functional & away from followers | Pearson Correlation | -.191 | -.250 |

Table 6 *Correlations Gestures while task-oriented behavior*

| | | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| NoGesture | Pearson Correlation | .066 | .248 |
| Upwardpalms | Pearson Correlation | -.244 | -.022 |
| Downwardinwardpalms | Pearson Correlation | -.155 | .173 |
| Mixed palms | Pearson Correlation | -.171 | -.138 |
| Clasped hands | Pearson Correlation | -.006 | -.337 |
| Hand gestures (up, down & mixed) | Pearson Correlation | -.240 | .035 |
| Hand gestures (up & down) | Pearson Correlation | -.206 | .130 |

Table 7 *Correlations Facial Expressions while task-oriented behavior*

|  |  | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| Neutral Facial expression | Pearson Correlation | -.085 | .336 |
| Open smile | Pearson Correlation | .031 | -.370 |
| Closed smile | Pearson Correlation | .008 | -.061 |
| Lipcorners down | Pearson Correlation | .220 | .174 |
| Smiles (open & closed) | Pearson Correlation | .031 | -.363 |

Table 8 *Correlations Adaptors while task-oriented behavior*

|  |  | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| Objecttouch | Pearson Correlation | .068 | .077 |
| Selftouchheadarea | Pearson Correlation | -.009 | .079 |
| Selftouchbody | Pearson Correlation | .132 | .009 |
| Touches (object & self) | Pearson Correlation | .138 | .105 |
| Selftouch (head & body) | Pearson Correlation | .120 | .049 |

Table 9 *Correlations Gazing while tak-oriented behavior*

|  |  | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| Gazing towards followers | Pearson Correlation | .087 | .147 |
| Gazing away from followers | Pearson Correlation | -.088 | -.116 |
| Functional Gaze | Pearson Correlation | -.039 | -.098 |
| Gazing functional & towards followers | Pearson Correlation | .088 | .115 |
| Gazing functional & away from followers | Pearson Correlation | -.087 | -.147 |

Table 10 *Correlations Gestures while relation-oriented behavior*

|  |  | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| No Gesture | Pearson Correlation | -.108 | .164 |
| Upwardpalms | Pearson Correlation | .159 | .081 |
| Downwardinwardpalms | Pearson Correlation | -.207 | .025 |
| Mixedpalms | Pearson Correlation | -.263 | -.044 |
| Claspedhands | Pearson Correlation | .145 | -.172 |
| Hand gestures (up, down & mixed) | Pearson Correlation | -.199 | .011 |
| Hand gestures (up & down) | Pearson Correlation | -.072 | .061 |

Table 11 *Correlations Facial Expression while relation-oriented behavior*

|  |  | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| Neutral facial expression | Pearson Correlation | -.155 | .013 |
| Open smile | Pearson Correlation | .106 | -.071 |
| Closed smile | Pearson Correlation | -.064 | .192 |
| Lipcorners down | Pearson Correlation | .256 | .130 |
| Smiles (open & closed) | Pearson Correlation | .095 | -.041 |

Table 12 *Correlations Adaptors while relation-oriented behavior*

|  |  | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| Selftouch (object) | Pearson Correlation | -.113 | -.004 |
| Selftouch (head) | Pearson Correlation | -.041 | -.039 |
| Selftouch (body) | Pearson Correlation | .147 | .122 |
| Touches (object & self) | Pearson Correlation | -.006 | .074 |
| Selftouch | Pearson Correlation | .128 | .104 |

Table 13 *Correlations Gazing while relation-oriented behavior*

|  |  | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| Gazing towards group | Pearson Correlation | .185 | .196 |
| Gazing away from follwers | Pearson Correlation | -.015 | -.112 |
| Functional Gaze | Pearson Correlation | -.234 | -.134 |
| Gazing functional & towards followers | Pearson Correlation | .011 | .112 |
| Gazing functional & away from followers | Pearson Correlation | -.192 | -.196 |

Table 14 *Correlations Adaptors while speaking*

|  |  | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| Tocuh (object & self) | Pearson Correlation | -.042 | .065 |
| Touch (head & body) | Pearson Correlation | .063 | .111 |
| Selftouch | Pearson Correlation | .058 | .027 |
| Objecttouch | Pearson Correlation | -.079 | .048 |

Table 15 *Correlations Hand gestures and smiling while speaking*

|  |  | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| Upward | Pearson Correlation | -.111 | .225 |
| Hand gestures (up & down) | Pearson Correlation | -.156 | .236 |
| Hand gestures (up, down & mixed) | Pearson Correlation | -.022 | .248 |
| Smiling (open & closed) | Pearson Correlation | .118 | .100 |

Table 16 *Correlations Gazing while speaking*

|  |  | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| Gazing towards followers | Pearson Correlation | .174 | .247 |
| Gazing away from followers | Pearson Correlation | -.039 | .110 |
| Gazing functional & towards | Pearson Correlation | .109 | .180 |
| Gazing functional & away | Pearson Correlation | -.177 | -.248 |
| Gazing functional | Pearson Correlation | -.127 | -.257 |

Table 17 *Correlations Adaptors, Clasped hands, Gazing and Smiling while listening*

|  |  | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| All touches (self & body) | Pearson Correlation | -.055 | -.082 |
| Selftouch | Pearson Correlation | -.105 | -.175 |
| Obejcttouch | Pearson Correlation | .029 | .060 |
| Claspedhands | Pearson Correlation | .011 | -.068 |
| Gazing towards followers | Pearson Correlation | .305 | -.058 |
| Smile (open & closed) | Pearson Correlation | .118 | -.355 |
| Gazing functional & towards followers | Pearson Correlation | .092 | .233 |
| Gazing functional & away | Pearson Correlation | -.305 | .058 |

Table 18 *Correlations Hand Gestures (duration)*

|  |  | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| Upwardpalms_dur_std | Pearson Correlation | .064 | .055 |
| Downwardinwardpalms | Pearson Correlation | -.029 | .116 |
| Mixedpalms | Pearson Correlation | -.229 | -.036 |
| Claspedhands | Pearson Correlation | .061 | -.121 |
| Gesture (up, down & mixed) | Pearson Correlation | -.117 | .053 |
| Gestures (up & downward) | Pearson Correlation | -.069 | .151 |
| No Gesture | Pearson Correlation | -.023 | .057 |

Table 19 *Correlations Smiling (duration)*

|  |  | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| Open smile | Pearson Correlation | .196 | -.247 |
| Closed smile | Pearson Correlation | .191 | .007 |
| Neutral facial expression | Pearson Correlation | -.226 | .119 |
| All smiles (open & closed) | Pearson Correlation | .225 | -.203 |

Table 20 *Correlations Adaptors (duration)*

|  |  | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| Objecttouch | Pearson Correlation | .042 | .050 |
| Selftouchheadarea | Pearson Correlation | -.069 | -.156 |
| Selftouchbody | Pearson Correlation | -.069 | -.156 |
| All touches (body, head, object) | Pearson Correlation | -.021 | -.086 |
| Selftouch (body & head) | Pearson Correlation | -.069 | -.156 |

Table 21 *Correlations Gazing (duration)*

|  |  | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| Gazing functional & away from group | Pearson Correlation | -.300 | -.171 |
| Gazing functional & towards group | Pearson Correlation | .049 | .046 |
| Lookingtowardsgroup | Pearson Correlation | .299 | .171 |
| Lookingawayfromgroup | Pearson Correlation | -.050 | -.047 |
| Functionallookingbehaviour | Pearson Correlation | -.327 | -.172 |

Table 22 *Correlations Gestures (frequency)*

|  |  | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| NoGesture | Pearson Correlation | .082 | .249 |
| Upwardpalms | Pearson Correlation | .113 | .090 |
| Downwardinwardpalms | Pearson Correlation | .105 | .170 |
| Mixedpalms | Pearson Correlation | -.070 | -.016 |
| Claspedhands | Pearson Correlation | -.045 | -.186 |

Table 23 *Correlations Facial Expressions (frequency)*

|  |  | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| Neutral facial expression | Pearson Correlation | .229 | -.097 |
| Opensmile | Pearson Correlation | .173 | -.240 |
| Closedsmile | Pearson Correlation | .175 | .011 |

Table 24 *Correlations Adaptors (frequency)*

|  |  | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| Object-touch | Pearson Correlation | .075 | -.060 |
| Selftouch headarea | Pearson Correlation | .059 | -.090 |
| Selftouch body | Pearson Correlation | .073 | .020 |
| Object & Bodytouch (simulteneous) | Pearson Correlation | -.464 | .141 |
| Object & Headtouch (simulteneous) | Pearson Correlation | -.034 | .079 |
| Body & Headtouch (simulteneous) | Pearson Correlation | -.087 | -.561 |

Table 25 *Correlations Gazing (frequency)*

|  |  | LeEff_Followers | LeEff_Experts |
|---|---|---|---|
| Gazing towards followers | Pearson Correlation | -.063 | .087 |
| Gazing away from followers | Pearson Correlation | -.010 | .106 |
| Functional Gaze | Pearson Correlation | -.122 | -.060 |
| Gaze fluctuation | Pearson Correlation | -.061 | .082 |