

**The face of leadership: Perceiving leaders from  
facial expression**

**Savvas Trichas**

The thesis is submitted in partial fulfilment of the requirements for the award of the degree of  
Doctor of Philosophy of the University of Portsmouth

**February 2011**

## **Declaration**

Whilst registered as a candidate for the above research degree, I have been not registered for any other research award. The results and conclusions embodied in this thesis are the work of the named candidate and have not been submitted for any other academic award.

## **Acknowledgments**

As I reach the end of this journey, I cannot help but feel a sense of achievement. However, it would be ungrateful not to share that with all those who were part of that journey. Consequently, in the next paragraphs I would like to thank all the people who have been an essential part of this research.

To begin with, I owe my deepest gratitude to Dr Birgit Schyns. She successfully managed being a supervisor, a mentor, and a friend to guide me through the course of my PhD. I would also like to thank Dr Emma Brown for her help and guidance especially during my early stages of the PhD. To the rest of supervisory team I would also like to thank Professor Charlotte Rayner and Mr Derek Adam-Smith for their help and support. Special thanks go also to Dr Charalambos Charalambous for his statistical expertise, kindness, and constant willingness to improve my level of analysis. Finally, I am indebted to my two examiners, Professor Robin Martin who acted as an external examiner for this thesis, and Dr Michael Wood who acted as an internal examiner for this thesis, for their willingness to improve the quality of my work through their constructive feedback.

I would also like to show my appreciation to Marfin Laiki Bank who supported my research. Special thanks to Director of Human Resources, Dr Polis Votsis, Manager - Training & Development – HR Christiana Christodoulidou, and Training & Development Officer Savvas Kkolos.

It is a pleasure for me to thank my parents Christos Trichas and Andri Tricha, for the endless love and support in all my life decisions, and my sister Loukia Tricha for the help she provided during the data collection. You have been parents, friends, research assistants, sponsors, mentors, role models and for that I will always be deeply grateful.

Last but not least, I would like to thank my life partner, my beautiful wife Emily Demetriou for the endless love and support and also for the patience she showed during my studies. Thank you for being there for me in joy and sorrow.

## Dissemination

### Articles

Trichas, S., & Schyns, B. (2010) The face of leadership: Perceiving leaders from facial expression. Manuscript submitted for publication

Papanastasiou, E., Kosta, E., Trichas, S., Nicolaou, S., & Panagiotou, T. (2005) Predicting achievement in a research methods course. 11th European Conference for Research on Learning and Instruction, University of Cyprus, Nicosia, Cyprus

Trichas, S., Alampritis, P., Zeka M., Michael, N., Panaseti, A., Papademitriou, E., Christophi, A., Aristedou, T., & Phtiaka, E. (2004) Behavioural problems in school: A case study in a high school In Cyprus. Proceedings of the 8<sup>th</sup> Pancyriot Conference of the Cyprus Educational Research Association, University of Cyprus, Nicosia, Cyprus

### Presentations

Trichas, S. (2010). The face of leadership: Leadership perception from facial expression. Presented at the 13th European Conference on Facial Expression, Duisburg-Essen, Germany.

## **Abstract**

Facial expressions appear to have a powerful influence on the perception of leadership. The aim of the five studies presented here was to add to our knowledge about the contribution of facial expression to the perception of leadership. In particular, these five studies were used to explore which facial expressions influence perceptions of leadership and how these facial expressions influence leadership perceptions. Participants' prototypes of leadership were examined by assessing implicit leadership theories. Furthermore, facial expression stimuli (videos and pictures) were used in two research phases.

Phase 1 (studies 1 and 2) used different research designs applied to different populations, to pilot the design and also to examine how leadership perceptions are formed from facial expression. Participants' prototypes of leadership were assessed. Additionally, the participants were asked to evaluate pictures of different facial expressions. In Study 1, leadership perceptions were investigated based on basic facial actions. Study 2, extended this approach by using context activation in a facial expression scenario. Perceived leadership from the facial expressions was compared to the participants' prototypes. The results indicated that the participants used all available information, including facial appearance, expression, context of communication, appropriateness, and authenticity of expression to form complex prototypes. When the facial expressions in the studies matched the participants' prototypes, perception of leadership tended to be higher.

In phase 2 (studies 3, 4, and 5), the feedback from phase 1 was used to refine the instruments, and applied to different research designs on a large, culturally and organisationally homogenous sample. The aim of the three studies of the second phase was to further add to our knowledge about the contribution of facial expression to the perception of leadership. Similarly to phase 1, participants' prototypes of leadership were assessed. In addition, participants were shown photo sequences or videos of different facial expressions.

Study 3 used manipulations of static facial expression sequences, transferring some well known impression formation tests (see Asch, 1946) to the research of leadership perception from facial expression. Study 4 used videos of a leader's/actor's facial expressions in an organisational context. Finally, study 5 used photos extracted from the videos of study 4 with some additional manipulations. Perceived leadership from the facial expressions was compared to the participants' prototypes. The results revealed that when the facial expressions in the studies matched the participants' prototypes, perception of leadership was higher for the majority of the cases examined. Furthermore, the facial expression manipulations appeared to cause significant changes in perceptions of leadership. Particularly, participants considered those facial expressions that transmitted negativity as less leader-like than the ones transmitting positive emotions. Moreover, static facial expressions were perceived differently from dynamic facial expressions in terms of leadership perceptions. Changing the order of the sequence of specific facial expressions did not yield significant differences for the photo-sequences investigated. Finally, although gender differences were found in almost all participants' ILTs dimensions, when they had to evaluate the facial expressions, men and women showed much more agreement.

In conclusion, the evidence from the current research suggests that facial expressions significantly influence the perception of leadership. However, making sense of that influence was a matter of understanding what is inside the perceiver's mind. On the basis of the studies included in this thesis, it is recommended for leaders and organisations to shift attention from developing certain leadership skills to increasing perceptual awareness.

## Contents

<b>Chapter I: Introduction.....</b>	<b>1</b>
1.1 Introduction.....	1
1.2 Theoretical background.....	2
1.2.1 Implicit Leadership Theories.....	3
1.2.2 Previous research on leaders' expressions.....	4
1.3 Aim and research questions.....	5
1.4 Key concepts.....	5
1.5 Importance and contribution of research.....	7
1.6 Research philosophy.....	8
1.7 Research methodology and approach.....	11
1.8 Thesis overview.....	13
<b>Chapter II: Phase 1 of the research.....</b>	<b>15</b>
2.1 Introduction.....	15
2.2 Theoretical background.....	16
2.2.1 Implicit Leadership Theories.....	17
2.2.2 Facial expressions and trait impressions: The underlying theory.....	18
2.2.3 Previous research on leaders' expressions.....	20
2.2.4 Accuracy in describing facial expression: The facial action coding system (FACS) .....	24
2.2.5 Prior research investigating trait impressions from facial expressions.....	25
2.2.6 Research model.....	26
2.3 Methodological considerations.....	29
2.3.1 Methodological specifics on facial expressions: Judgement studies in studying nonverbal behaviours.....	29
2.4 Research design.....	30
2.4.1 Assessing participants Implicit Leadership Theories (ILTs) .....	30



2.4.2 Assessing facial expressions: Combining judgement-based and sign-based approaches.....	31
2.4.2.1 Sign-based approach: The facial action coding system (FACS) .....	31
2.4.2.2 Judgement-based approach: Reusing the ILTs list.....	32
2.4.3 Ethics.....	32
Study 1.....	33
2.5 Method.....	33
2.5.1	
Participants.....	33
2.5.2 Design and instruments.....	33
2.5.3 Implicit Leadership Theories (ILTs) .....	33
2.5.4 Facial expression coding.....	34
2.5.5 Experimental design and stimulus material.....	34
2.6 Results.....	35
2.6.1 Quantitative analysis of participants' ILTs.....	35
2.6.2 Qualitative analysis.....	36
2.6.3 Evaluation of physiognomy: The neutral face.....	36
2.6.4 Evaluation of facial expression: The impact of facial actions.....	38
2.6.5 Discussion of study 1.....	47
Study 2: Expanding the theory.....	49
2.7 Other factors that impact leadership perception.....	49
2.7.1 Authenticity, context and appropriateness: Key factors that differentiate the perceived meaning of facial expressions.....	49
2.7.2 The complex prototype filter.....	51
2.8 Method.....	53
2.8.1 Participants.....	53
2.8.2 Design and instruments.....	53
2.8.3 Implicit Leadership Theories (ILTs) .....	54

2.8.4 Experimental design and stimulus material.....	54
2.8.5 Facial expression.....	55
2.9 Results.....	56
2.9.1 Quantitative analysis of participants' ILTs.....	56
2.9.2 Qualitative analysis of participants' ILTs.....	57
2.9.3 Evaluation of the illustrated scenarios: The impact of facial expressions.....	57
2.9.4 Participants' own preferences for the scenario's facial expressions.....	61
2.9.5 Discussion of study 2.....	64
2.10 General discussion of studies 1 and 2.....	65
<b>Chapter III: Phase 2 of the research.....</b>	<b>69</b>
3.1 Introduction.....	69
3.2 Main research.....	71
3.2.1 Setting the context: Organisation information.....	71
3.2.2 Studies 3, 4, and 5: An improved design.....	72
3.2.3 Assessing participants Implicit Leadership Theories (ILTs) .....	72
3.2.4 Assessing facial expressions.....	72
3.2.5 Indicators of leader-likeness.....	73
3.2.6 Ethics.....	73
Studies 3, 4, and 5: Implicit Leadership Theories (ILTs) .....	74
3.3 Method.....	74
3.3.1 Participants and sampling: Studies 3, 4 and 5.....	74
3.4 Preliminary analysis: Factor analysis results.....	75
3.4.1 Implicit leadership theories (ILTs): Data reduction.....	75
3.4.2 Making sense of the participants' ratings: Statistical support for an 8-factor solution.....	75
Study 3: Integrating Asch's (1946) impression formation tests.....	79
3.5 Order effects and trait centrality.....	79

Study 3.....	82
3.6 Method.....	82
3.6.1 Participants.....	82
3.6.2 Design and instruments.....	82
3.6.3 Implicit Leadership Theories (ILTs) .....	83
3.6.4 Facial expression coding.....	83
3.6.5 Experimental design and stimulus material.....	83
3.6.6 Procedure.....	84
3.7 Results.....	85
3.7.1 Evaluation of the sequences with static facial expressions.....	81
3.7.2 Qualitative analysis.....	90
3.7.3 Discussion of study 3.....	92
3.8 Study 4: Dynamic facial expressions and leadership perceptions.....	94
Study 4.....	94
3.9 Method.....	94
3.9.1 Participants.....	94
3.9.2 Design and instruments.....	94
3.9.3 Implicit Leadership Theories (ILTs) .....	95
3.9.4 Facial expression coding.....	95
3.9.5 Experimental design and stimulus material.....	96
3.9.5.1 Video construction.....	96
3.9.6 Procedure.....	99
3.10 Results.....	99
3.10. 1 Evaluation of the videos (dynamic facial expressions) .....	100
3.10.2 Qualitative analysis of participants’ reactions to the facial expressions.....	104
3.10.3 Discussion of study 4.....	107

3.11 Study 5: Comparing leadership perceptions to static facial expressions with dynamic facial expressions.....	108
Study 5.....	110
3.12 Method.....	110
3.12.1 Participants.....	110
3.12.2 Design and instruments.....	111
3.12.3 Implicit Leadership Theories (ILTs) .....	111
3.12.4 Facial expression coding.....	111
3.12.5 Experimental design and stimulus material.....	112
3.12.6 Procedure.....	114
3.13 Results.....	114
3.13.1 Evaluation of static facial expressions extracted from the respective videos.....	115
3.13.2 Qualitative analysis of participants’ reactions to the facial expressions.....	122
3.13.3 Comparing leadership perceptions from dynamic facial expressions with static facial expressions.....	124
3.13.4 Qualitative analysis of participants’ reactions to the facial expressions.....	128
3.13.5 Qualitative analysis of participants’ reactions to the facial expressions.....	132
3.13.6 Qualitative analysis of participants’ reactions to the facial expressions.....	137
3.13.7 Summary: Leadership perceptions from static facial expressions and comparisons with their respective dynamic facial expressions.....	139
3.13.8 Additional manipulations.....	141
3.13.9 Examining the basic three-frames structure, and physiognomy.....	142
3.13.10 Adding subtle facial actions: Angry with widening the eye aperture (AU: 5) and smiling with eyebrow raise.....	148
3.13.11 Comparing participants’ perceptions of leadership for subtle differences between facial expressions.....	156
3.13.12 Summary: Additional manipulations and comparisons.....	168
3.13.13 Discussion of study 5.....	170

3.13.13.1 Comparisons of participants' leadership perceptions from static facial expressions extracted from the respective videos.....	170
3.13.13.2 Comparing leadership perceptions from the dynamic versions of facial expressions with their respective static variations.....	172
3.13.13.3 Additional manipulations and comparisons.....	172
Further data analysis.....	174
3.14 Gender differences.....	174
3.15 Results.....	175
3.15.1 ILTs and gender.....	175
3.15.2 Gender differences: Study 3.....	177
3.15.3 Gender differences: Studies 4 and 5.....	178
3.15.4 Discussion: Gender differences.....	180
3.16 ILTs match with perceptions from facial expressions.....	181
3.17 Results.....	181
3.17.1 Discussion: ILTs match with perceptions from facial expressions.....	185
3.18 General discussion of studies 3 to 5.....	186
<b>Chapter IV: General discussion.....</b>	<b>192</b>
4.1 Implicit leadership theories (ILTs), facial expressions, and leadership perception.....	192
4.2 Phase 1.....	193
4.3 Phase 2.....	197
4.4 Limitations and future research.....	214
4.4.1 Implicit leadership theories (ILTs) .....	214
4.4.2 Facial expression manipulations.....	216
4.4.3 Theoretical limitations.....	220
4.4.4 Research credibility.....	221
4.5 Conclusions.....	223
4.5.1 Implications and contributions.....	224
4.5.2 Conclusion.....	229

<b>References.....</b>	<b>230</b>
<b>Appendices.....</b>	<b>246</b>
Appendix A - Studies connecting facial expression and trait inferences.....	247
Appendix B – Ethics.....	251
Appendix C - Questionnaires: Study 1.....	256
Appendix D - FACS coding: Study 1.....	280
Appendix E - Questionnaires: Study 2.....	281
Appendix F - FACS coding: Study 2.....	298
Appendix G - ILTs instrument modification.....	299
Appendix H - Factor loadings for principal component analysis of the 36 items in a 2-factor solution using varimax with Kaiser normalisation rotation methods.....	301
Appendix I - Questionnaires: Study 3.....	303
Appendix J - FACS coding: Study 3.....	313
Appendix K - “Yes” and “No” Figures and Tables: Study 3.....	314
Appendix L - Questionnaires: Study 4.....	323
Appendix M - FACS coding: Studies 4 and 5.....	331
Appendix N - Hypothetical conversation of the leader with the member of the HRM group.....	332
Appendix O - Interrater reliability for FACS coding: Studies 4 and 5.....	333
Appendix P - “Yes” and “No” Figures and Tables: Study 4.....	334
Appendix Q - Questionnaires: Study 5.....	336
Appendix R - “Yes” and “No” Figures and Tables: Study 5.....	353
Appendix S - Comparisons of variation 7 (basic) with the rest of the static variations....	361
Appendix T - Comparisons of variation 9 (angry with AU: 5) and variation 10 (smiling with eyebrow raise) with variation 5 (nervous).....	371
Appendix U - T-tests regarding gender differences for all variations in studies 3, 4 and 5.....	384

## List of Figures

2.1. Participants ILTs study 1.....	35
2.2.i-iii: Participants' evaluations of the neutral faces.....	37
2.3.iv,v: Participants' evaluations of the images showing facial expression.....	38
2.4.vi,vii: Participants' evaluations of the images showing facial expression.....	42
2.5. Theory proposed for the perception of leadership.....	52
2.6. Participants ILTs study 2.....	56
2.7.B1-B7: Evaluations of facial expressions for the illustrated scenarios.....	57
2.8i. Picture selected for the introduction phase (stage 1) .....	62
2.8ii. Picture selected for the negotiations phase (stage 2).....	62
2.8iii. Picture selected for the sealing the deal, goodbye phase (stage 3).....	63
3.1. Radar-graph, representations of the eight factors comprising participants' ILTs.....	79
3.2. Variations 1-4: Quantitative evaluations of leadership dimensions for each variation...85	
3.3. Acceptance of the actor as a potential leader: "yes" and "no" percentages.....	89
3.4. Variations 1-3: Evaluations of facial expressions for the videos.....	100
3.5. Acceptance of the actor as a potential leader: "yes" and "no" percentages.....	103
3.6. Variations 4-6: Evaluations of facial expressions for the photos.....	115
3.7.a-c: Descriptions of underlying emotions for the static facial expression representing apexes of the video scenarios.....	118
3.8. Acceptance of the actor as a potential leader: "yes" and "no" percentages.....	120
3.9. Participants' perceptions of leadership from dynamic stimuli (video: variation 1) with static stimuli (photo extracts of facial expressions' apexes from the video: variation 3).....	125
3.10. Acceptance of the actor as a potential leader: "yes" and "no" percentages.....	127
3.11. Participants' perceptions of leadership from dynamic stimuli (video: variation 2) with static stimuli (photo extracts of facial expressions' apexes from the video: variation 5).....	129
3.12. Acceptance of the actor as a potential leader: "yes" and "no" percentages.....	132

3.13. Participants’ perceptions of leaderships from dynamic stimuli (video: variation 3) with static stimuli (photo extracts of facial expressions’ apexes from the video: variation 6).....	134
3.14. Acceptance of the actor as a potential leader: “yes” and “no” percentages.....	136
3.15. Variations 7, 8: Quantitative evaluations in leadership dimensions for each variation... ..	142
3.16.a,b: Descriptions of underlying emotions for the static facial expression representing apexes of the video scenarios.....	144
3.17. Acceptance of the actor as a potential leader: “yes” and “no” percentages.....	146
3.18. Variations 9, 10: Quantitative evaluations in leadership dimensions for each variation.....	149
3.19.a,b: Descriptions of underlying emotions for the static facial expression (manipulation photos) representing apexes of the video scenarios.....	151
3.20. Acceptance of the actor as a potential leader: “yes” and “no” percentages.....	153
3.21. Variations 4, 10: Quantitative evaluations in leadership dimensions for each variation.....	157
3.22.a,b: Descriptions of underlying emotions for the static facial expression (manipulation photos) representing apexes of the video scenarios.....	159
3.23. Acceptance of the actor as a potential leader: “yes” and “no” percentages.....	160
3.24. Variations 6, 9: Participants’ perceptions of leadership in variation 6 with variation 9... ..	162
3.25.a,b: Descriptions of underlying emotions for the static facial expression representing apexes of the video scenarios.....	164
3.26. Acceptance of the actor as a potential leader: “yes” and “no” percentages.....	166



## List of Tables

2.1.a,b: Significant differences between participants' perceptions of physiognomy and facial expression.....	39
2.2.a,b: Significant differences between participants' perceptions of physiognomy and facial expression.....	43
2.3: Significant differences between participants' perceptions of Bill lowering and pulling together the eyebrows and raising and pulling together the eyebrows.....	46
2.4: Summary of results for B1-B7 .....	59
3.1: Factor loadings for Principal Components Analysis of the 36 items in an 8-factor solution using varimax with Kaiser Normalization rotation methods.....	76
3.2: Means, Standard Deviations, and Cronbach's Alpha coefficients of the eight Factors...78	
3.3: Significant differences between participants' perceptions in order effects (comparisons of variations 1,2 and 3) .....	86
3.4: Significant differences between participants' perceptions after changing the "weak" photo (comparisons of variations 1,2,3 and 4) .....	87
3.5: Most used trait descriptions (sorted by frequency) from participants' qualitative responses grouped in "yes, he could be a leader" and "no, he could not be a leader".....	91
3.6: Significant differences between participants' perceptions of the three variations (comparisons of variations 1,2,3) .....	101
3.7: Most used trait descriptions (sorted by frequency) from participants' qualitative responses grouped in "yes, he could be a leader" and "no, he could not be a leader" .....	104
3.8: Significant differences between participants' perceptions of the three variations (comparisons of variations 4,5,6) .....	116
3.9: Most used trait descriptions (sorted by frequency) from participants' qualitative responses grouped in "yes, he could be a leader" and "no, he could not be a leader" .....	122
3.10: Significant differences between participants' responses from dynamic stimuli (video: variation 1) with static stimuli (photo extracts of facial expressions' apexes from the video: variation 3) .....	125
3.11: Most used trait descriptions (sorted by frequency) from participants' qualitative responses grouped in "yes, he could be a leader" and "no, he could not be a leader" .....	127
3.12: Significant differences between participants' responses from dynamic stimuli (video: variation 2) with static stimuli (photo extracts of facial expressions' apexes from the video: variation 5).....	130

3.13: Most used trait descriptions (sorted by frequency) from participants’ qualitative responses grouped in “yes, he could be a leader” and “no, he could not be a leader”.....	132
3.14: Significant differences between participants’ responses from dynamic stimuli (video: variation 2) with static stimuli (photo extracts of facial expressions’ apexes from the video: variation 5).....	135
3.15: Most used trait descriptions (sorted by frequency) from participants’ qualitative responses grouped in “yes, he could be a leader” and “no, he could not be a leader”.....	137
3.16: Significant differences between participants’ perceptions for variation 7 and 8.....	143
3.17: Most used trait descriptions (sorted by frequency) from participants’ qualitative responses grouped in “yes, he could be a leader” and “no, he could not be a leader”.....	146
3.18: Significant differences between participants’ perceptions (variations 9, 10).....	150
3.19: Most used trait descriptions (sorted by frequency) from participants’ qualitative responses grouped in “yes, he could be a leader” and “no, he could not be a leader”.....	154
3.20: Significant differences between participants’ responses in variation 4 with variation 10.....	157
3.21: Most used trait descriptions (sorted by frequency) from participants’ qualitative responses grouped in “yes, he could be a leader” and “no, he could not be a leader”.....	161
3.22: Significant differences between participants’ responses in variation 6 (angry) with variation 9 (angry with AU: 5).....	163
3.23: Most used trait descriptions (sorted by frequency) from participants’ qualitative responses grouped in “yes, he could be a leader” and “no, he could not be a leader”.....	166
3.24: Significant differences between men and women for ILTs.....	175
3.25: Significant differences between men and women for study 3 (variation 4: replacing the “weak” photo).....	177
3.26: Significant differences between men and women for studies 4 and 5 (variation 9: angry with AU: 5).....	179
3.27: Pearson correlations between ILTs dimensions and the respective leader-actor evaluations from the facial expression conditions of study 3 (sorted by better match).....	182
3.28: Pearson correlations between ILTs dimensions and the respective leader-actor evaluations from the facial expression conditions of study 4 and 5 (sorted by better match).....	184

## *Chapter I: Introduction*

### **1.1 Introduction**

Malcom Gladwell (2005) in his book “Blink: the power of thinking without thinking” wrote:

If you were to approach a one year old child who sits playing on the floor and do something a little puzzling, such as clapping your hands over hers, the child would immediately look into your eyes. Why? Because what you have done requires explanation, and the child knows that she can find an answer on your face (p.195).

Human beings begin to understand the value of facial expression from their early years. The way the face functions is fascinating; many muscles together transmitting thousands of meanings every day, by movement combinations. Facial expression is a nonverbal channel that receives a lot of research attention and some might claim this is only fair since it gathers the vast majority of the sensor organs, plus the brain, in its region (Cohn & Ekman, 2008).

The paragraph above reveals a sample of the reasoning that resulted in my personal motivation for undertaking the current research; trying to reach a deeper understanding of the fascinating phenomenon of facial expression. In the area of business, as in any context where humans interact, the question how the facial expression shapes the perception of a person by others is key to our understanding of interaction. Thus, in this PhD thesis, I aim to combine the study of the human face with the perception of leadership. Specifically, I am interested in how leaders’ facial expressions influence leadership perception.

Facial expression, as a nonverbal channel, has been demonstrated to influence perception, impressions, and image (Aguinis, Simonsen, & Pierce, 1998; Cohn & Ekman, 2008; Glaser & Salovey, 1998; Krumhuber, Manstead, & Kappas, 2006). In fact, many professions (such as flight attendants, Hochschild, 1983, or bill collectors, Rafaeli & Sutton,

1987) presuppose the use of specific facial displays as part of their professional identity. Leadership is, also, a role where expression of emotional display is significant. Famous leaders, such as Ronald Reagan and Martin Luther King, are characteristically renowned for their skills of communicating emotions (BBC News, 2004; Ling, 2003). Furthermore, the significance of leaders' emotional expressivity was highlighted in a variety of studies on political, charismatic, transformational, and authentic leadership (Ashkanasy & Tse, 2000; Bono & Ilies, 2006; Bucy, 2000; Goffee & Jones, 2005). Nevertheless, little is known regarding the influence of facial expressions in leadership perceptions.

With respect to leadership, Kenney, Blascovich, and Shaver (1994) maintain that leadership lies in the perceivers' minds. In other words, it is the perception process itself that defines who is perceived to be a leader. Consequently, the understanding of perception plays an important part in understanding leadership. The studies presented in this thesis aim to add to our knowledge about influences on the perception of leadership, specifically, the contribution of facial expressions.

## **1.2 Theoretical background**

Prior studies acknowledge the significant contribution to leadership perception by perceivers themselves. These studies view leadership as a socially constructed phenomenon emerging from beholders (Meindl, 1995; Schyns, Felfe, & Blank, 2007), or as a procedure of information processing available in the perceivers' minds (Lord, Foti, & DeVader, 1984). The current thesis investigates leadership perceptions from the beholders' perspective. Specifically, the mental schemas beholders carry in terms of previous experiences play an important role in perception by unconsciously defining a large part of our judgements of others (Greenwald & Banaji, 1995; Vonk, 1994). In leadership research, these schemas, are called "implicit leadership theories" (ILTs).

### 1.2.1 Implicit Leadership Theories

ILTs are context-specific cognitive schemas that people have about leaders' behaviours traits, qualities, and attitudes, based on previous experiences (Epitropaki & Martin, 2004; Keller, 1999; Kenney, Blascovich, & Shaver, 1994). Hall and Lord (1995) support that ILTs influence the evaluation of leaders. Specifically, they argue that perceivers use ILTs as a comparison criterion to classify people into leaders and non-leaders. What is more, a line of empirical studies provide evidence supporting that ILTs are used in the perception and appraisal of actual leaders (Gray & Densten, 2007; Nye & Forsyth, 1991; Schyns, Felfe, & Blank, 2007). In conclusion, ILTs are cognitive schemas in the form of expectations from previous experiences which serve as a reference point to perceive leaders.

Extending the previous rationale, Calder's (1977) work on the attribution of leadership is relevant. Particularly, Calder (1977) stresses the link between behaviours, qualities and expectations of leaders. The main argument is that if a quality produces a behaviour, then a behaviour generates an expectation of that underlying quality. Consequently if, for example, friendliness is expected to be expressed with a smile, when people see a smile they will infer friendliness.

There is a large volume of published studies which links trait impressions to facial expressions (e.g. Aguinis, Simonsen, & Pierce, 1998; Krumhuber, Manstead, Cosker, Marshall, & Rosin, 2007; Marsh, Adams, & Kleck, 2005; Montepare & Dobish, 2003; Schmid & Hall, 2004). For example, Krumhuber, Manstead, Cosker, Marshall, and Rosin (2007) found that smiling facial expressions are considered more trustworthy than non-expressive facial expressions. In addition, angry facial expressions are positively related to high dominance and low affiliation (Montepare & Dobish, 2003). In conclusion, both facial expressions and ILTs are linked with the perception of leadership. The current thesis

combines these two approaches to examine how facial expressions influence leadership perceptions.

### 1.2.2 Previous research on leaders' expressions

Previous studies on leadership expressions have mainly focused on two different types of research, (1) political leaders' emotional displays (e.g. Bucy & Bradley, 2004; Cherulnik, Donley, Wiewel, & Miller; 2001, Masters & Sullivan, 1989), and (2) leaders' general emotional displays (e.g. Gaddis, Connelly, & Mumford, 2004; Glomb, & Hulin, 1997; Lewis, 2000; Medvedeff, 2008). These studies contributed to an understanding of the influence of facial expressions in the perception of leadership. However, they ignored the added perspective that sophisticated facial expression analysis could provide to their findings. To clarify, modern facial action coding analysis involves the marking of exact facial muscle movement and intensity (Ekman, Friesen, & Hager, 2002). For example, taking results from the studies above, Lewis (2000) found that sadness displays negatively influenced evaluations of leader's efficiency compared to neutral displays. With respect to facial action coding, sadness expressions can be illustrated in a face with several intensity levels and by different muscle movements (see Ekman, Friesen, & Hager, 2002).

Although leadership research lacked sophisticated facial expression analysis, such methods were used and developed in studies from the domain of psychology and facial expression (Ekman, 1992; Ekman & Rosenberg, 1997; Hess, Blairy, & Kleck, 2000; Knutson, 1996). Studies like the ones above highlight the significance of accurately describing facial expression. Specifically, research has demonstrated that subtle facial expressions have an impact on people's perceptions (Surakka & Hietanen, 1998; Ekman, Friesen, & Hager, 2002). This means that in facial expressions' studies, the findings depend on how accurately the facial expressions are described. In other words, accuracy in facial

expression description can potentially have an impact on the credibility of a research design (see Rosenberg, 2005). In addition to the above, to my knowledge, no research so far has combined the study of implicit leadership theories and the study of trait impressions from facial expressions to approach how leaders' facial expressions influence leadership perception. The present thesis integrates detailed facial action coding analysis and existing knowledge of leadership perception.

### **1.3 Aim and research questions**

The target of this thesis is to create an understanding on how facial expressions influence leadership perceptions. In particular, I aim to explore which facial expressions influence perceptions of leadership and how these facial expressions influence leadership perceptions.

### **1.4 Key concepts**

As mentioned above, the research explores how facial expressions influence leadership perceptions. The two obvious key concepts involved are “facial expression” and “leadership perception”. A brief explanation will be given below to set the background, as the concepts will be discussed in detail in chapter II.

Facial expression is addressed to the thesis as a part of the wider study of nonverbal communication which refers to the study of the messages, other than speech, people use to communicate (Mehrabian, 1972). Following principles of studying the expressions of the face from the facial action coding system (FACS; Ekman, Friesen, & Hager, 2002), the current thesis refers to *facial expressions* as the visible<sup>1</sup> changes to the appearance of the face resulting from facial-muscle activity. The facial action coding system (*FACS*) mentioned above, is a highly valid, widely used tool that combines anatomy with photo or video analysis

---

<sup>1</sup> The method of electromyography (EMG, Tassinari & Cacioppo, 1992) can also be used for measuring facial muscle movement. EMG can detect facial muscle changes which are not visible with a naked eye. The current study investigates only visible facial expressions.

observation to define exact facial muscle movement and intensity (Ekman et al., 2002; Harker & Keltne, 2001). The present research uses the FACS instrument to contribute to the integration of detailed facial expression coding analysis to the area of leadership.

Furthermore, clarifications of the various facial expression-related terms which are going to be used in this research are given: *physiognomy* is the appearance of the face without the contribution of facial muscle movement (see Zebrowitz, 1997). Additionally, in facial expression coding, physiognomy is also referred to as the neutral face (Ekman, Friesen, & Hager, 2002). *Static facial expressions* refer to the still representation of facial expressions, usually through photographs. In contrast, *dynamic facial expressions* refer to actual moving facial expressions as they appear in real communication (Kilts, Egan, Gideon, Ely, & Hoffman, 2003).

Since the current research is based exclusively on human interaction, leadership perception can be explained as a branch of interpersonal perception. Interpersonal perception is defined as the judgements a person makes about another person (Kenny, 1994). As Kenny (1994) explains, because of perceivers' tendency to structure their knowledge about people around traits, studies investigating person perception have focused on revealing these traits. Considering the complexity of human interaction, it cannot be claimed that trait descriptions alone can capture the full essence of person perception. Nevertheless, studying trait characteristics is a widely used and acceptable approach in both person perception (Kenny, 1994) and leadership perception (Epitropaki & Martin, 2004). As mentioned above, in this research, trait descriptions are the link between the areas of leadership and facial expression. Therefore, in the current thesis, the perception of leadership is going to be viewed in relation to traits. The current study uses the term *leadership perception* to refer to the mental image, constructed by perceivers, in terms of trait-networks after observing leaders' facial expressions.



Closely related to leadership perception, a crucial concept for the present thesis is perceivers' leadership prototypes or *implicit leadership theories (ILTs)*. ILTs are context-specific cognitive schemas people have about leaders' behaviours, traits, qualities, and attitudes based on previous experiences (Epitropaki & Martin, 2004; Keller, 1999; Kenney, Blascovich, & Shaver, 1994). Trait descriptions, similarly to person perception, are considered to be a suitable method of investigating ILTs (see Epitropaki & Martin, 2004; Offerman, Kennedy, & Wirtz, 1994). The term ILTs in the current study refers to the participants' cognitive schemas (expectations) of an ideal leader in terms of trait-networks.

### **1.5 Importance and contribution of research**

As mentioned earlier, this PhD thesis aims to penetrate the structures of leadership perception which leads to a threefold academic contribution.

The first is expanding the relevant literature. A considerable amount of literature on ILTs exists, and the importance of a match with leaders' behaviours has already been identified (Nye & Forsyth, 1991). The current study attempts to investigate how participants' leadership prototypes (ILTs) "translate" into traits networks. Furthermore, it examines how the relationship of these ILTs networks with other trait networks constructed from the participants' reactions to leaders' facial expressions links with the perception of leadership. To my knowledge, the studies included in the thesis are the first line of research investigating a match between ILTs and reactions from leaders' facial expressions. Additionally, a special contribution to the area is the integration of sophisticated facial expression coding methods (FACS; Ekman, Friesen, & Hager, 2002) in the area of leadership perception.

The second contribution is addressing a theoretical problem that could, later on, set the background for applied methods. Calder (1977) argues that instead of focusing on developing certain skills in leaders the aim should be to discover how specific groups of people perceive

leaders and make them aware of that knowledge. Uncovering the structures of perception can contribute to carrying professional training educational philosophy to another level; trying to understand the structures of a problem and create a strategy rather than just trying to develop professional skills. The current research is an application of such a philosophy.

There is also a context specific contribution. The present thesis investigates leaders' facial expression influences in leadership perceptions using a Cypriot sample. To my knowledge, there is currently no research involving facial expressions in leadership perception in Cyprus, so the study introduces new contextual findings which, hopefully, will help local business development and education. Communication, and especially education in perception, (or leadership perception in general) was not found to be highly developed in Cyprus in terms of research and professional training (<http://www.pba.ucy.ac.cy>, <http://www.mba.ucy.ac.cy>, <http://www.capitallinkcyprus.com>).

The outcomes of such a study could contribute to a more professional business education, training and administration in Cyprus. Generalising from the context specific contribution, the philosophy underlying the methodology could also be used as a cornerstone for similar studies into other organisational positions as for example frontline employees (bank cashiers or hotel receptionists). In a similar vein, the way of approaching the topic area could potentially be used as a plan for similar nonverbal leadership perception studies covering other segments of communication (such as body posture, gestures, voice, proxemics, and touch) in a search for a full nonverbal theory about leadership perception.

## **1.6 Research philosophy**

Traditionally, a lot of the philosophical debate concerned the opposing stands of positivism and relativism. Briefly, positivism supports strict rules, direct experience, facts, creating laws, and quantified methodologies, while relativistic approaches focus on situational aspects,

reality through the eyes of participants, complexity of context, and qualitative methodologies (see Robson, 2002; Tashakkori & Teddlie, 1998). Avoiding philosophical extremes such as positivism and relativism, I am placed among paradigms which allow more flexibility of both thought and methods. In this section I will explain how my philosophy emerges from combining key principles from two paradigms: critical realism and pragmatism.

In a post-positivistic environment, discussing a more flexible (or human) view of positivism, Robson (2002) proposes critical realism as a philosophy for real world research. Critical realism accepts that quantification offers significant contributions to knowledge but also acknowledges that what is perceived is up to a point socially constructed (Robson, 2002). This philosophy argues that, even though reality is out there, the way people describe it depends on their own subjective criteria (Sayer, 2000). Consequently, confirming structures identified through research does not mean that the theory is confirmed due to the relativity of reality as we perceive it (Manicas & Secord, 1983). The closest research gets to reality is making theories strong by replicating them in as similar conditions as possible.

Besides critical realism, my research philosophy also embraces key principles from the paradigm of pragmatism. Pragmatism's main principle is that the researchers decide the focus of a project and then use the philosophical and methodological approaches they consider appropriate for addressing the research problem (Robson, 2002). Similarly to critical realists, pragmatists accept the existence of an external reality and try to explore causal relationships (Tashakkori & Teddlie, 1998). They also accept that the reality cannot be represented completely accurately, which is why one theory is not discussed in terms of how much better it is than another, but how solid is it in terms of significance. The main difference between critical realism and pragmatism is that the former focuses on the reality-causality improvement while the latter filters the explanations through the respective value system to create meaning (Fishman, 1999; Tashakkori & Teddlie, 1998).

The pragmatic approach seeks to increase flexibility to the researcher in comparison to philosophies such as positivism and relativism which support the *incompatibility thesis* (Howe, 1988), namely that qualitative and quantitative paradigms should not be combined. Howe (1988) states that an important element of a good researcher is to avoid becoming entrenched into certain patterns of thinking that might prevent from deliberately neglecting methodological options, as these may actually help in approaching a problem better. For example, a researcher who embraces a research philosophy that puts all the emphasis on statistical strength and quantitative analysis might lose the fine details that come from obtaining qualitative data. In the same manner, a qualitative-only approach abandons the statistics which can reveal useful and informative tendencies of a sample. Specifically, the pragmatic approach allows (and encourages) the use of philosophies and methodologies which are considered more appropriate for each research (Johnson & Onwuegbuzie, 2004; Robson, 2002). A result of such a philosophy is many times using both qualitative and quantitative, a so called mixed methods approach (Johnson & Onwuegbuzie, 2004; Yardley & Bishop, 2007).

To summarise, the discipline found in positivism often provides the statistical security of quantifying the data. However, one cannot simply reject the relativist notion of a socially constructed reality, especially in social sciences. For that reason I have chosen to combine elements from two philosophies which support compatibility of the two extremes; critical realism and pragmatism. Consequently, my main position is that there is a reality out there but the representations of reality we construct do not have 1:1 equivalence due to the human factor, particularly with respect to how we perceive information.

My study views the influence of facial expressions on leadership perception as a socially constructed phenomenon. Giving weight to the quantitative part was a matter of choosing, in my opinion, the best design for the study. That is not because my position is that

the social concepts are better understood quantified but because such quantification was considered suitable to approach the current research problem. Specifically, the combination of the research questions with quantifying personality traits as a link between participants' implicit leadership theories and facial expressions resulted in greater emphasis on quantitative data. The qualitative approach, which is complementary to the study, was used to triangulate the results (Johnson & Onwuegbuzie, 2004). In an ideal design, qualitative data could be even richer and not just complementary but an equal component in the study. In that manner statistical significance and depth could be balanced in real world research to give strength and depth to the results.

### **1.7 Research methodology and approach**

Anderson and Burns (1989) define methodology as the nature of knowing, that is, how evidence is collected and interpreted. One of the difficult decisions that had to be made for this research was whether the methodology would be qualitative or quantitative. Following principles from philosophies of pragmatism and critical realism as outlined above, I chose the approach I considered as most appropriate for addressing my research questions; a quantitative-dominant mixed method approach (Johnson, Onwuegbuzie, & Turner, 2007). In other words, I used quantitative methods as the main approach and complemented with qualitative data. Specifically, the quantitative nucleus of the study was determined from (a) the conditions of the research agreement following negotiations with the organisation; (b) the statistical strength "hard" data can provide (see Robson, 2002) and (c) specific characteristics of the subject area. Clarifying the latter, as mentioned in the literature review, a common strategy of investigating ILTs is by quantification of trait characteristics (items) which can be rated on scales (Epitropaki & Martin, 2004; Offerman, Kennedy, & Wirtz, 1994). Since the current research blends ILTs with perceptions from facial expressions with trait

characteristics as a link, instruments with rated traits (quantification) were selected as a method of evaluation and comparison.

Defending the quantitative lean of the study, Bentz and Shapiro (1998) state that using quantitative methods to approach social issues is not only acceptable but also crucial to gaining a unique understanding. In addition, qualitative data was used as a complementary method, thereby mixing different methods for triangulation, and adding more depth to the quantitative results (Best & Kahn, 1998; Brewer & Hunter, 2006). The aim of such an approach was basically to address some of the possible weaknesses of the quantitative method (e.g., missing important concepts due to specific focus; abstractness of representations) by utilising the strengths of the qualitative method (e.g., identifying emerging concepts that were not predetermined; greater depth in interpretation which can help resolving vagueness), to provide stronger insights (Johnson & Onwuegbuzie, 2004).

The current thesis falls into the tradition of empirical studies with a predictive character, as it is mainly quantitative, it identifies and manipulates variables, uses deduction to formulate and test hypotheses, and statistics to discuss significance of results (Hussey & Hussey, 1997; Johnson & Onwuegbuzie, 2004). The design was fixed before the data collection took place, following by definition what is called a “fixed design” (Robson, 2002).

To conclude, I do not claim that the respondents’ mainly quantitative reactions to the instruments have full accordance with reality. Besides, my research philosophy maintains that truth exists but we can only describe it the way we perceive it. Consequently, each individual may give different interpretations of the same reality. For that reason, the representations of “truth” extracted from the questionnaire can reveal something about the reality of the influence of facial expression in leadership perception in a unique manner. Considering that representations of reality must not be irrelevant (validity) a main reason for triangulating is to

ensure that there is at least a satisfactory equivalence between quantified traits and more flexible qualitative descriptions.

## **1.8 Thesis overview**

The overall structure of the study takes the form of four chapters, including this introductory chapter. In Chapter II both the literature review and the preliminary research are described. As regards the literature review, previous work on the area of leadership perceptions and facial expressions is reviewed. Specifically, the background literature is introduced, and past methodologies and findings are discussed, aiming to construct a theory on how facial expressions influence perceptions of leadership. Structures of leadership perception and facial expression are introduced separately at the beginning and links between them are highlighted later on. Informed by the existing literature on leader's emotional displays, it is argued that there is a tendency to ignore the value that sophisticated facial expression coding could bring to the area of leadership. In the review, the special contribution of the thesis is stressed, particularly, the integration of sophisticated facial expression coding techniques (FACS, Ekman et al., 2002) into the study of leadership perception. Finally, the theoretical model is proposed. Specifically, based on leadership categorisation theory (Lord, Foti, & DeVader, 1984), the existence of a leader-prototype filter is proposed, based on participants' implicit leadership theories in combination with situational factors.

As mentioned above, Chapter II also presents the preliminary stage (phase 1) of the empirical part of this thesis. The aim of the two studies presented in this chapter was a first investigation of facial expression's contribution to the perception of leadership. Consequently, studies 1 and 2 mainly aimed for a preliminary investigation of how ILTs referenced-based items apply to Cypriot samples and how they react to leaders' facial expressions. An additional aim was to test the practical application of the instrument and

obtain feedback to conduct the necessary corrections. The basis of the methodology is introduced and explained in this chapter. The two studies used a similar design to assess university undergraduate and post-graduate Cypriot students' prototypes of leadership. In addition, participants' leadership perceptions were assessed on the basis of pictures of different facial expressions. Perceived leadership from the facial expressions is discussed in relation to the participants' prototypes. The experiments included in these two studies investigate a variety of variables such as facial appearance, expression, context of communication, appropriateness, and authenticity of expression. Finally, the results are briefly discussed in the last section of the chapter.

Chapter III presents the main empirical work (phase 2) undertaken in this thesis. The aim of the three studies presented in this chapter was an in-depth investigation of facial expression's contribution to the perception of leadership. As mentioned above, in phase 1 the purpose was exploratory, setting up the background for phase 2. In phase 2 the instruments were adjusted to the feedback received in phase 1 and the population was significantly increased. Moreover, the sample homogeneity was increased since all the participants were employees of the same financial organisation. In the three studies, prototypes of leadership were assessed first, and then the respondents were shown pictures or videos of different facial expressions. Perceived leadership from the facial expressions was compared to the participants' prototypes. The experiments included in these studies investigated participants' leadership perceptions of the several manipulations of facial expressions. Finally, the findings are briefly discussed in the last section of the chapter.

In chapter IV, the findings are discussed in line with previous research and the limitations of the research are summarised. Moreover, practical implications are presented and contributions to the area of leadership and organisational practice are highlighted. As a final note, the conclusions of the thesis are introduced.



## *Chapter II: Phase 1 of the research*

### **2.1 Introduction**

Facial expressions appear to have a powerful influence on person perception (McArthur & Baron, 1983; Zebrowitz & Montepare, 2008). As highlighted earlier in this thesis, although expression of emotional display is considered important in leadership (Ashkanasy & Tse, 2000; Bono & Ilies, 2006; Bucy, 2000; Goffee & Jones, 2005; Ling, 2003; Stewart, Waller, & Schubert, 2009), our understanding concerning the impact of these emotions communicated by leaders through facial expression is still narrow.

The current research views leadership as a socially constructed phenomenon emerging from perceivers (Meindl, 1995). This presumes that the perception process is what determines who is perceived to be a leader. Therefore, understanding what is inside the perceiver's mind is significant in understanding leadership perception. The aim of the studies presented here is to add to our knowledge about the contribution of facial expression to the perception of leadership.

In the leadership area, prior research on expressions has mainly focused on political leaders' emotional displays (Bucy, 2000; Bucy & Bradley, 2004; Bucy & Newhagen, 1999; Masters & Sullivan, 1989; Sullivan & Masters, 1988) and leaders' general emotional displays (Lewis, 2000; Damen, Van Knippenberg, & Van Knippenberg, 2008). However, to my knowledge, research on facial expression lacks the use of sophisticated methods available in other psychological settings (Ekman, 1992; Ekman & Rosenberg, 1997; Hess, Blairy, & Kleck, 2000; Knutson, 1996). In the latter research area, emphasis has been placed on the accuracy of describing facial expression. Research has shown that subtle differences between facial expressions, in terms of facial muscle movement and intensity, can make a difference in terms of the perceptual impact (Surakka & Hietanen, 1998; Ekman, Friesen, & Hager,

2002). Consequently, the credibility of leadership research into emotional displays depends on the accuracy of the description of facial expressions (see Rosenberg, 2005).

The current research integrates psychological methods of investigating facial expressions and existing knowledge of leadership perception. My aim is to explain in more detail how facial expressions influence leadership perceptions. As mentioned in chapter I, studies 1 and 2 (phase 1) constitute the preliminary research, while studies 3, 4 and 5 the main research. Consequently, studies 1 and 2, presented in this chapter, are mainly a first exploration of the research questions, namely which facial expressions influence perceptions of leadership and how these facial expressions affect the perception of a leader's traits. An additional objective was to test the practical application of the instrument and obtain feedback for applying the necessary corrections.

In the following, I draw on two different types of research to derive the hypotheses, (1) leadership impression formation as part of the wider area of perception, and (2) research on facial expression. Subsequently, two studies are outlined with different research designs and different populations. Finally, I present the general discussion and conclusions.

## **2.2 Theoretical background**

As mentioned above, prior research indicates that leadership is, at least to a degree, constructed by perceivers. For example, Gray and Densten (2007) state that "leadership is in the eyes of the beholder" (p. 577), while Schyns, Felfe, and Blank (2007) conclude that it is "... (at least partly) a social construction of the perceiver" (p. 506). The current study follows this approach by investigating the structures of leadership perception. In the next sections, key points are reviewed on how leadership is perceived and how this perception is related to facial expression.

Specifically, *stereotypes* play an important role in perception (Vonk, 1994). A stereotype is a set of expectations about traits that are characteristic of certain social groups (Greenwald & Banaji, 1995; Konst & Van Breukelen, 2005). Prototypes, on the other hand, are the most representative instances of categories (Konst & Van Breukelen, 2005). Such expectations of traits can be used as evaluative “filters” which help in assigning causes to behaviours. For instance, the expectation of a leader being dynamic and competent is used for evaluating a person’s behaviour as leader-like. Stereotypes, therefore, implicitly and automatically define a large part of our perception of others (Greenwald & Banaji, 1995). With respect to leadership, these schemas, stereotypes and prototypes are often referred to as *implicit leadership theories (ILTs)*.

### 2.2.1 Implicit Leadership Theories

ILTs are people’s expectations of leaders’ qualities and behaviours, based on previous experiences (Kenney, Blascovich, & Shaver, 1994). Based on an information-processing model of leadership perception, Hall and Lord (1995) argue that people use their ILTs as a reference point for the evaluation of good leadership. The result of this comparison determines whether someone is categorised as a leader or not. Reinforcing the latter, Schyns, Felfe, and Blank (2007) found that ILTs affect actual leader perception. Gray and Densten (2007) suggested that leaders who behave in ways that are congruent with their followers’ ILTs would be more likely to win their support. What is more, a match between an individual’s expectations of a leader (a prototype) with the leader’s actual behaviours was found to lead to more favourable evaluations (Nye & Forsyth, 1991). To conclude, people have expectations of leaders based on previous experiences, which serve as evaluative criteria for perceiving someone as a leader.

In his seminal work on the attribution of leadership, Calder (1977) argues that believing that a leader's trait generates a behaviour will result in the attribution of this trait if the particular behaviour is observed. Transferring this idea to expectations of facial expressions, it would follow, for example, that if the trait "dominant" produces a behavioural expectation of a frown, when someone perceives a frown the inference would be "dominant."

A widely used method of studying ILTs is to assess personality descriptions through trait characteristics. These traits are considered as "summary labels" which help people to make sense of the behaviours they observe from leaders (see Epitropaki & Martin, 2004, p. 293). The most popular traits used when describing leaders are confident, dominant, credible, dynamic, motivated, decisive, positive, nice, understanding, and extraverted (Bono & Judge, 2004; Epitropaki & Martin, 2004; House, 1977; Hogan, Curphy, & Hogan, 1994; Humphrey, 2002; Judge, Bono, Ilies, & Gerhardt, 2000; Kenney, Blascovich, & Shaver, 1994; Lord, Foti, & DeVader, 1984; Lord, Brown, Harvey, & Hall, 2001; Rubin, Munz, & Bommer, 2005).

### 2.2.2 Facial expressions and trait impressions: The underlying theory

Darwin's seminal writings (1872/1965) stress the informative character facial expressions have about people's emotions and behavioural intents. He proposed an evolutionary perspective of the basic function of facial expressions expressing one's emotions (e.g., an anger facial expression indicates that a person is angry) to a more complex function, like predicting the behavioural intentions of others (is the angry person going to attack or am I safe?). Extending Darwin's theory, relevant studies support that, when observing facial expression, perceivers go beyond the emotional label behind the expression, to infer underlying intentions and personality traits (McArthur & Baron, 1983; Montepare & Dobish, 2003; Todorov, Said, Engell, & Oosterhof, 2008; Zebrowitz & Montepare, 2008). Especially

on personality traits, Secord (1958) proposed the concept of “temporal extension”. Temporal extension is when momentary behavioural effects of emotion expressions are associated with permanent trait impressions. In other words, facial expressions fuel interpretations of respective emotions and intentions which are then integrated into personality trait characteristics that match these interpretations.

Contemporary studies use principles of appraisal theories of emotion (see Roseman, Antoniou, & Jose, 1996; Scherer, 1999) to try to explain why people link emotional expressions with personality traits (Ames & Johar, 2009; Hareli and Hess, 2009). Perceivers are aware of the strong link between emotion and facial expressions (see Ekman, 1972), so they “reverse engineer” their appraisal theories (Hareli & Hess, 2009, p. 129). In other words, by knowing that a person’s appraisal causes an emotional response (e.g. a facial expression), perceivers run that theory backwards to infer emotions, and intentions in a context. Finally, they extend that information to infer personality characteristics of the transmitter.

A considerable amount of research relates facial expressions to trait impressions. An example is Keating, Mazur, and Segall’s (1977) research which indicates a relationship between lowered eyebrows and perceived dominance. Further examples are the links between facial expressions of anger and perceived high status, and facial expressions of sadness and perceived low status (Tiedens, 2001). Also, angry facial expressions are negatively correlated with trustworthiness (Richell et al., 2005). Besides the examples mentioned above, a wider range of studies connecting facial expression and trait inferences can be found in appendix A.

To sum up, ILTs, as well as facial expressions, are related to the perception of leaders’ traits (Aguinis, Simonsen, & Pierce, 1998; Krumhuber, Manstead, & Kappas, 2006,

Lundqvist, 2003). In the current research, both approaches are combined to add to knowledge about the perception of leadership.

### 2.2.3 Previous research on leaders' expressions

Most pertinent to the perception of leadership from facial expression are studies about political leaders' emotional displays (Bucy, 2000; Bucy & Bradley, 2004; Bucy & Newhagen, 1999; Cherulnik, Donley, Wiewel, & Miller, 2001; Masters & Sullivan, 1989; Stewart, Waller, & Schubert, 2009; Sullivan & Masters, 1988), and leaders' general emotional displays (Damen, Van Knippenberg, & Van Knippenberg, 2008; Gaddis, Connelly, & Mumford, 2004; Glomb, & Hulin, 1997; Lewis, 2000; Medvedeff, 2008).

Research into political leaders' displays mainly involved showing the participants images or videos of well-known US presidents (e.g., Ronald Reagan, Bill Clinton) exhibiting different emotional facial expressions and registering their evaluative reactions (e.g., Bucy & Bradley, 2004; Sullivan & Masters, 1988). Interestingly, it turned out that negative and low intensity emotional displays were preferred by followers (Bucy & Newhagen, 1999). Other research showed that participants' emotional responses were more positive with more happy-reassuring leader displays (Masters & Sullivan, 1989; Sullivan & Masters, 1988). Especially important for the current research is a study that used detailed facial expression coding analysis to study viewers' reactions. Stewart, Waller, and Schubert (2009) removed micro-momentary parts of facial expression known as microexpression<sup>2</sup> (see Jenkins & Johnson, 1977), using former President George W. Bush's facial expressions. The study showed that these very short units of communication can influence participants reactions. Specifically,

---

<sup>2</sup> Micro-expressions are defined as facial expressions of emotion exposed only for a short period of time. Micro-expression or "micros" are sometimes very difficult to detect consciously (Ekman, 2003).

Stewart et al. (2009) findings showed that observers felt more anger and threat when smiling frames (positive microexpressions) were removed from George W. Bush's speech.

Another line of research focused on the impact of leaders' emotional displays (Lewis, 2000; Damen et al., 2008), which mainly employed manipulations of leaders' emotional expressions. For example, Lewis (2000) examined the impact of leaders' emotional displays by having male and female actors express sadness, anger and neutrality. She found a significant negative effect of negative emotional displays on the evaluation of leadership effectiveness. In the same methodological vein, research resulted in significant insights regarding participants reactions to leader affectivity. Some of the studies found that leader negative displays were negatively evaluated by observers (Gaddis, Connelly, & Mumford, 2004; Glomb, & Hulin, 1997; Lewis, 2000; Medvedeff, 2008) and others that positive displays were positively evaluated by observers (Awamleh & Gardner, 1999; Medvedeff, 2008). Damen et al. (2008) explored more complicated structures, such as the relationship between followers' positive affect and leaders' emotional displays. They used actor-leaders who expressed enthusiasm or anger by exhibiting smiles or frowns and other, nonverbal, cues such as tone of voice and body language (e.g., body posture). They found that leader displays influence followers' behaviour more if there is a congruency between the valence of leaders' emotional displays and followers' positive affect. Newcombe and Ashkanasy (2002) used professional actors to act as supervisors giving feedback by manipulating their facial expressions positively or negatively. They found that positive and message congruent facial expressions resulted in a more positive evaluation of the respective leader's negotiating latitude. Finally, Van Kleef, Homan, Beersma, van Knippenberg, van Knippenberg, and Damen (2009) used a trained actor assigned as "e-leader" to coach the participants from another room through a screen. The actor used either anger or happiness displays. Van Kleef et al. (2009) focused on the variable of "epistemic motivation", namely, the motivation to

learn. The results showed that participants' epistemic motivation differentiated which type of affective displays helped to improve performance. Participants with high epistemic motivation performed better with their leader exhibiting anger displays. On the other hand, when epistemic motivation was low, the participants preferred happy displays.

Other studies have investigated facial expressions and other variables which are considered important for the perception of specific leadership styles or traits, such as charisma (Awamleh & Gardner, 1999; Shea & Howell, 1999), trustworthiness (Krumhuber, Manstead, Cosker, Marshall, & Rosin, 2007), or power and dominance (Dovidio, Heltman, Brown, Ellyson, & Keating, 1988; Keating, 2003; Keating, Mazur, & Segall, 1981; Keating, Mazur, & Segall, 1977; Mazur & Mueller, 1996). In these studies, smiling, non-smiling and eyebrow movements were used as facial expression manipulations to examine effects on trait perception. Sample results include that lowered eyebrows and a non-smiling mouth were perceived as signs of dominance (Keating et al., 1981; Keating et al., 1977). Additionally, a leader smiling while giving a speech was correlated with the impression of charisma (Awamleh & Gardner, 1999). Finally, Krumhuber et al. (2007) found that a neutral face decreased trustworthiness impressions whereas a smiling face increased trustworthiness.

The above research helps in understanding how facial expression contributes to leadership perceptions. Still, it lacks the depth of insight that detailed facial action coding could give. An example may illustrate this point: Bucy and Newhagen's (1999) study indicated that followers prefer negative and low intensity presidential displays. With respect to facial action coding, the descriptors "negative and low intensity" seem incomplete. A negative display might be an expression of sadness, an expression of fear, an expression of anger or even another expression of anger. Taking the latter as example, even though the facial expression of anger is universally recognised (Matsumoto & Hee Yoo, 2005) it has been found to have 65 different facial appearances (Ekman & Friesen, 1978). In other words,



there is a variety of facial muscle movement and intensity combinations which can produce the facial expression of anger. A simple example of such distinction is anger expressions with teeth showing or with pressing the lips together (Ekman et al., 2002). Nevertheless, a combination of facial actions might be recognised as the general emotion of anger, but that does not mean that the specific perceptions of each combination are identical. The emotion might be labelled with a word or phrase, such as “anger”, which describes the basic function of a facial action combination, but the perceptual impact could be different because of the subtle differences in the muscle movement and intensity (Surakka & Hietanen, 1998). Regarding intensity, sophisticated facial expression coding distinguishes up to five different levels of intensity (Ekman et al., 2002). In conclusion, the low-high and negative-positive bipolar dimensions have several different levels of intensity and respective muscle movement (Ekman, Friesen, & Hager, 2002).

Similar problems occur in the research on facial expressions and trait perceptions, such as charisma, trustworthiness, intelligence, status and dominance (e.g., Awamleh & Gardner, 1999; Keating, Mazur, & Segall, 1981; Keating, Mazur, & Segall, 1977; Krumhuber, Manstead, Cosker, Marshall, & Rosin, 2007; Murphy, 2007; Schmid & Hall, 2004). Take the example of an eyebrow raise. Facial expression coding (Ekman et al., 2002) maintains that there is much more to describing facial actions than the simple notion of an eyebrow raise: Eyebrow movements are controlled by three basic muscles, the combined activity of which can lead to quite different perceptual impacts. Hence, an “eyebrow raise” can contribute to the perception of surprise, fear, or sadness (Ekman et al., 2002, Surakka & Hietanen, 1998).

To summarise, relevant studies do not use detailed approaches to facial expression coding. However, subtle differences in facial expressions can have quite different perceptual impacts (Snodgrass, 1992). Consequently, defining facial expression accurately can contribute to our understanding of leadership perception.

#### 2.2.4 Accuracy in describing facial expression: The facial action coding system (FACS)

Ekman and Friesen (1976) integrated anatomy in an organized coding system to increase accuracy in facial action description. Specifically, they used the cause and effect rationale that facial movement originates from underlying muscle actions. They aimed to discover how muscle movement and intensity changes the appearance of the face so they could use these changes to infer which facial muscle has moved and with what intensity. Eventually, they combined facial anatomy and expression in constructing a sophisticated instrument for facial action coding (FACS, Ekman, & Friesen, 1976, 1978; Ekman, Friesen, & Hager, 2002).

The FACS is an anatomically based, comprehensive, objective technique for measuring all observable facial movement. It distinguishes 44 action units (AUs). These are the minimal units that are anatomically separate and visually distinguishable. Facial coding usually requires slowed-motion inspection of recorded behaviour (Ekman & Rosenberg, 1997, p. 118).

In other words, the FACS investigates what happens under the skin of the face in terms of visible changes. Specifically, FACS coding specifies which muscle has moved, what the movement was, and what intensity was used. The induction of such sophisticated technique in the area of leadership entails a special contribution of the study; that is bringing detail in leaders' facial expressions decoding. An important reason for the necessity of describing facial expressions accurately is that subtle differences between facial expressions can have different perceptual impacts (Snodgrass, 1992; Surakka & Hietanen, 1998). Consequently, the credibility of leadership research on emotional displays depends on the accuracy of the description of facial expressions (see Rosenberg, 2005).

Besides the methodological gap identified in the last paragraphs, there is also a theoretical gap. To my knowledge, there is currently no research which links leadership prototypes (ILTs) with trait impressions and leaders' facial expressions. The leadership studies reviewed above could not provide a solid background for the domain the current thesis aims for. However, a number of studies from the psychological literature used methodologies of connecting facial expression with trait impressions which were found to be applicable for the current research.

#### 2.2.5 Prior research investigating trait impressions from facial expressions

Snodgrass (1992) used facial expressions from Ekman and Friesen's (1978) FACS to discover the pleasure and arousal induced to the observer when seeing a facial action. Additionally, Snodgrass (1992) asked the observers to describe the facial actions in emotion terms. Her findings indicate different perceptions of emotional states for different facial expressions. Moreover, Arya, Jefferies, Enns, and DiPaola (2006) explored personality impressions of animated characters' facial actions and emotional facial expressions in brief videos. Their participants saw characters from a computer screen and had to give their ratings in a number of personality traits. They found that head tilting and gaze aversion influenced perceived dominance, and expressions of smiling and contempt influenced affiliation. Furthermore, eyebrow raising, blinking, head tilting and nodding significantly was found to affect the believability of the actor. Knutson (1996), in research with human actors, asked observers to rate the dominance and affiliation of actors' faces with static or apparent motion expressions. The results showed that angry and disgust expressions were perceived as high in dominance and low in affiliation, happy expressions as high in dominance and affiliation, and fearful and sad expressions as low in dominance. The facial expressions were coded for exact muscle movement and intensity with the facial action coding system (FACS; Ekman, & Friesen,

1978) and were evaluated in a series of trait-characteristics. Finally, Montepare and Dobish (2003) in a similar design, without facial expression coding, put untrained actors to pose emotions and asked the participants to evaluate them in emotions and trait impressions. Their findings showed that the emotion displayed in facial expressions shifted impressions in dominance and affiliation. Specifically, happy and surprised facial expressions increased perceived dominance and affiliation, angry facial expressions increased perceived dominance and decreased perceived affiliation, and sad and fear expressions decreased dominance.

Summarising, the literature reviewed on leaders' facial expressions (or nonverbal communication including facial expressions) was found to lack sophisticated methods of facial expression coding, with the exception of one study (Stewart et al., 2009). However, as argued earlier, subtle differences in facial expressions can result in different perceptions (Surakka & Hietanen, 1998). Consequently, accuracy in facial expression coding is a factor that can potentially have an impact on the credibility of the research. For that reason, the current thesis integrates methodologies from psychological studies (Knutson, 1996; Snodgrass, 1992) to address the research problem.

#### 2.2.6 Research model

As outlined above, people's mental preconceptions about leaders (ILTs) are transferred to behavioural expectations (Awamleh & Gardner, 1999; Hogg, 2001). The proposition in the current study, following prior research on information-processing (Hall & Lord, 1995), is that these expectations create a basic prototype leadership filter. This filter serves as a comparison standard for categorising people into leaders and non-leaders. In line with Calder (1977), it is anticipated that if expectations in the form of ILTs are met by a person's facial expressions, then the perception of that person as "leader-like" will increase. In other words, the study's model holds that when people interact with someone whose facial expressions suggest traits

which match their ILTs prototype filter, that person is categorised as “leader”. Thus, it is assumed:

Hypothesis 1: When trait inferences from an actor’s facial expressions match the participants’ ILTs, the actor will be perceived as more leader-like than when there is a mismatch.

Previous research found that lowered eyebrows increase perceptions of dominance, while raised eyebrows decrease it (Keating, Mazur, & Segall, 1977; Montepare & Dobish, 2003). Furthermore, Snodgrass (1992) showed that simple facial actions, including the two eyebrow movements discussed above, can have gestalt-like and multidimensional, rather than unidimensional, effects on impressions. What is more, dominance is linked with leadership in general (Kalma, Visser, & Peeters, 1993) but also with other leader-related traits such as competence (Anderson & Kilduff, 2009). In other words, raising and pulling together the eyebrows may result not only in reduced perceptions of dominance, but may also reduce perceptions of high prototypicality traits (dynamism, credibility, competence and intelligence), resulting in a decrease of the total leadership perception. Hence:

Hypothesis 2: Lowered and pulled-together eyebrows will increase perception of leadership while raised and pulled-together eyebrows will decrease it.

Physiognomy is another factor that needs to be considered when studying leadership perception from facial expressions. Willis and Todorov (2006) argue that very short exposures to physiognomy (down to 100 ms) are enough to create trait impressions. The area of the face plays a vital role in the judgement procedure. Specifically, the structure of the face is responsible for the construction of global but also specific trait impressions like

extraversion, dominance, consciousness, sexual availability, agreeableness, and honesty (Hassin & Trope, 2000). Several scholars have tried to connect character traits or judgements with face characteristics (Masip, Garrido, & Herrero, 2004; Neth & Martinez, 2009; Zebrowitz, Fellous, Mignault, & Andreoletti, 2003). Specifically, features like size, location, and shape of face characteristics are influence perception of personality traits (Todorov, Said, Engell, & Oosterhof, 2008; Zebrowitz, 1997).

The current thesis is not focusing on the concrete physiognomy characteristics and how these influence trait impressions. However, as a research on the area of facial expression it cannot overlook the contribution of the total of physiognomy to such procedures. Thus, the following assumption is made:

Hypothesis 3: Physiognomy will influence leadership perceptions.

As mentioned above, impressions are formed in the early stages of interaction with someone. Drawing from the literature on person perception, Zimbardo and Leippe (1991) suggest that initial impressions comprise a filter that further information is built upon. Therefore, the impressions from physiognomy may act as a “biasing filter” (Zimbardo & Leippe, 1991, p. 187) which influences further impressions from facial expressions. Consequently, the next hypothesis is stated as an extension of the previous one:

Hypothesis 4: The physiognomy of a person will influence how that person’s facial expressions will furthermore create leadership perceptions.

## **2.3 Methodological considerations**

### 2.3.1 Methodological specifics on facial expressions: Judgement studies in studying nonverbal behaviours

Since the current study aims to discover perceptions emanating from behaviours, it can be fundamentally characterised by definition, as a *judgement study*. Rosenthal (2008) simply defines judgement studies as: “...studies in which behaviours, persons, objects, or concepts are evaluated by one or more judges, raters, coders, or categorizers, referred to collectively as judges” (p. 199). Rosenthal (2008) also states that a basic form of judgement studies in the field of nonverbal communication is to consider nonverbal cues as independent variables. Specifically, they manipulate encoders’ nonverbal behaviours and observe the effects on decoders’ ratings.

Furthermore, a distinction of *judgement* and *sign based* approach for studying nonverbal behaviours can be found (see Cohn & Ekman, 2008). An example of distinguishing between the two approaches is how they would view a smile: a judgement-based approach would use the description “happy”, while a sign-based approach would describe the muscle change (e.g. corners of the lips movement back and obliquely upward) without emotional inferences (Cohn & Ekman, 2008, p. 12). Consequently, a judgement-based approach can be used to reveal the inferences people make when perceiving nonverbal behaviour, and a sign-based approach can be used to answer which particular facial actions are employed. With respect to the current research, the two approaches are going to be used complementarily. The sign-based approach will be used to investigate which particular facial actions, and with which intensities, are employed by leader/actors, and the judgement-based approach will be used to reveal the inferences people make when observing the respective facial actions.

## **2.4 Research design**

Questionnaire instruments were administered to a sample of students. The main reasons for choosing questionnaires for the particular research are that they allow examination of the study's variables in a relatively large sample whilst at the same time providing research economy (Robson, 2002). Furthermore, the questionnaire used here also allowed the collection of some qualitative data, as it included open-ended questions to complement the quantitative part. Considering the disadvantages of using questionnaires as a method, some key points were especially addressed. The participants were assured of the anonymity and confidentiality of the treatment of the data they provided, so a social desirability response bias (see Robson, 2002) could be avoided (see section 2.4.3 on ethics). Furthermore, using triangulation by including qualitative data obtained from the open-ended question helped to address some of the drawbacks of using questionnaires (e.g. losing the complexity of the social world, better defining the numbers the respondents used to rate personality traits, see Alvesson, 1996).

### 2.4.1 Assessing participants Implicit Leadership Theories (ILTs)

A questionnaire instrument was constructed to assess participants' implicit leadership theories (ILTs). An ILTs list was constructed and tested in the preliminary studies by combining existing ILTs instruments (Den Hartog, House, Hanges, Ruiz-Quintanilla, & Dorfman, 1999; Epitropaki & Martin, 2004; Judge, Bono, Ilies, & Gerhardt, 2000; Keller, 1999; Ling, Chia, & Fang, 2000; Lord, Brown, Harvey, & Hall, 2001; Offerman, Kennedy, & Wirtz, 1994) and traits that were considered to be important for the investigation of nonverbal aspects of leadership (eg., expressive, stressed; see Burgoon, Birk, & Pfau, 1990).



#### 2.4.2 Assessing facial expressions: Combining judgement-based and sign-based approaches

As mentioned earlier, both participants' inferences of facial expression (judgement-based approach) and the particular facial actions which were employed (sign-based approach) were investigated in the current studies.

##### *2.4.2.1 Sign-based approach: The facial action coding system (FACS)*

As discussed earlier in this thesis, the facial action coding system (FACS, Ekman, Friesen, & Hager, 2002) is a system that addresses matters of credibility as it integrates anatomy in facial expression research to increase accuracy of results. Specifically, FACS provides the knowledge of what happens under the skin of the face (in terms of visible changes) to observers, to try to understand which muscle has moved, what was the movement, and when was the movement. The coding procedure requires slow-motion videotaped observation or comparison of photos with facial expressions with, at least, a frame (e.g. a photo) with the neutral face. Compared to other systems (e.g. MAX, Izard, 1983; AFFEX, Izard, Dougherty, & Hembree, 1983), an important advantage of FACS is that it describes muscle movement without blending primary evaluation and emotion inferences. That reduces potential bias and allows consideration of a wider range of facial actions (Cohn, Zlochoher, Lien, & Kanade, 1999). Besides facial action, the intensity is coded in terms of how weak or strong the movement is (Cohn & Ekman, 2008). The FACS is perhaps the most widely used manual facial coding technique as it is considered to have high levels of validity (Cohn & Ekman, 2008) and reliability (Sayette, Cohn, Wertz, Perrott, & Parrot, 2004). My study used the latest version of FACS (Ekman, Friesen, & Hager, 2002) for the coding of the stimuli. The studies included in the current thesis either use already coded material from the FACS manual, or they use new stimuli FACS-coded by two independent coders.

#### *2.4.2.2 Judgement-based approach: Reusing the ILTs list*

To evaluate participants' inferences of facial expressions the ILTs list are used. The reason for using the exact same list to assess ILTs is to enable a comparison between ILTs and perception.

#### 2.4.3 Ethics

For the research undertaken in this phase, ethical approval was obtained, beforehand, by the Portsmouth Business School ethics committee after submitting the relevant documents (ethical review checklist for staff and doctoral students). The procedure that research ethics require was followed (see appendix B). Clear directions were given and the participants were assured that no deception or violation of any rights was involved in the study. Informed consent was obtained before any data were collected. Furthermore, the data were kept confidentially. Confidentiality and anonymity implied that the thesis follows the code of data protection and that the information revealing evidence about participants' identity will be deleted. Furthermore, the nature of the responses to the questions asked cannot reveal personal identities as they reveal attitudes and non character specific and personal information.

There was also the special issue of the actors' use of visual content (images and videos) because a different, more personal quality of data is used. The controlled facial expression images and videos were used only after getting written consent. Furthermore, the actors were assured that the pictures and videos would be controlled by the researcher and used only for the purposes of the study.

## Study 1

### 2.5 Method

#### 2.5.1 Participants

Participants were 98 Cypriot full time undergraduate business students. Of those students 24.5% were male and 75.5% were female. Their ages ranged from 18 to 20, with an average age of 18.49 years ( $S.D. = 0.86$ ). None of the students had any working experience.

#### 2.5.2 Design and instruments

The study was conducted in two in-class sessions. Participants were first asked to indicate their implicit leadership theories (ILTs). Subsequently, they were asked to evaluate photos depicting facial expressions, using the exact same scale that was used to assess ILTs in the first part of the questionnaire. There was also space for a brief qualitative explanation. The first study used already coded, basic facial actions from the FACS manual, such as eyebrow raises and frowns. The reference example images used as the facial expressions (see FACS manual, Ekman et al., 2002) were demonstrated by three men.

#### 2.5.3 Implicit Leadership Theories (ILTs)

Participants' Implicit Leadership Theories were assessed using a 49-item measure (see appendix C). The 49 items were rated on an 11-point scale, ranging from 0 = "*not at all characteristic*" to 10 = "*extremely characteristic*". In order to activate common leadership prototypes, the participants read the following statement before completing the ILTs list: "In the current questionnaire, the word business leader will refer to a person in a high organisational position who is successful in leading groups of people".

Even though the sample was relatively small ( $N = 98$ , for considerations of sample size in factor analyses see Fabrigar, Wegener, MacCallum, & Strahan, 1999), an exploratory

factor analysis was used to give an indication of the underlying dimensions. The analysis revealed factors such as “sensitivity”, “dynamism”, “dedication”, “intelligence”, “masculinity” and “tyranny”, similar to those previously discovered by Epitropaki and Martin (2004). Adding factors such as “social skills”, “likeability”, “credibility” and “dominance” better explained the remaining traits. Thus, the 49 trait characteristics formed 10 factors which composed the leadership prototype filter.

#### 2.5.4 Facial expression coding

The instrument used for evaluating facial action movement and intensity was the FACS (Facial Action Coding System; Ekman, Friesen, & Hager, 2002). As mentioned earlier, instruments like the FACS are considered to have high levels of validity (Cohn & Ekman, 2008; Rosenberg, 2005) and are used in studies that require facial expression decoding (Ekman & Rosenberg, 2005; Harker & Keltne, 2001).

Seven FACS coded pictures showing three men were evaluated in the second part of the questionnaire (Ekman, Friesen, & Hager, 2002, p. 381-433). Three pictures depicted the physiognomy of the three men (neutral face which had the FACS coding of “0”). The remaining four pictures showed facial expressions. All pictures showed eyebrow movement as the main facial expression. In two pictures, raised and pulled together eyebrows of different muscle movement and intensity were depicted. The other two showed lowered and pulled together eyebrows of different intensity (for FACS coding see appendix D).

#### 2.5.5 Experimental design and stimulus material

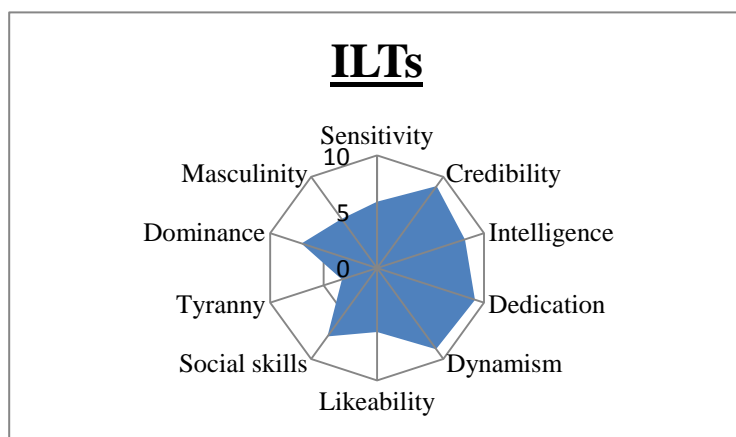
One man was to be evaluated at a time. The following statement was used to activate the business leader prototype: “Assume that the man you see in the photo is working in a well known Cypriot organisation”. Participants evaluated one of three variations: (1) two of the

eyebrow movement photos, one depicting a man lowering and pulling together his eyebrows (high dominance condition), and one depicting another man raising and pulling together his eyebrows (low dominance condition). Variation (2) showed the same man who appeared in variation (1) raising and pulling together his eyebrows (low dominance condition), and another man lowering and pulling together his eyebrows (high dominance condition). In (3) all three men were evaluated with respect to their physiognomy. Under the picture, the participants were asked to briefly answer to the question “Could that person be a business leader? Why?”. Participants were then asked to indicate “From a scale 0 – 10, with 10 being the maximum score, which overall leadership score would you give to that man based on the information you saw above?”. This question served to obtain a first impression score (F.I. score) of perceived leadership for the person depicted. Finally, the participants evaluated the respective picture regarding leadership perception using the same list employed for assessing ILTs.

## 2.6 Results

### 2.6.1 Quantitative analysis of participants’ ILTs

Figure 2.1: Participants ILTs study 1



Means of the ILTs factors are illustrated in the radar-graph depicted in Figure 2.1. It appears that that participants' ILTs rely on dynamism, credibility and dedication followed by intelligence, social skills and dominance. Sensitivity, likeability and masculinity were not considered to be characteristic leadership qualities. Finally, tyranny was the least regarded characteristic for a leader.

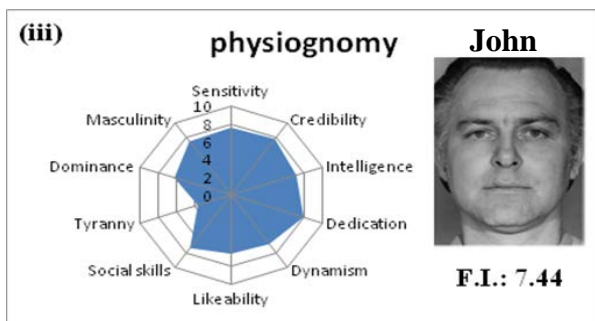
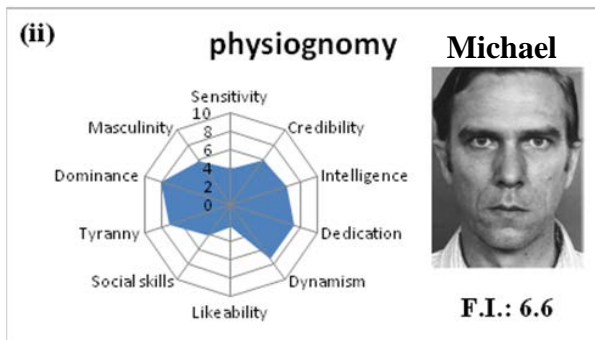
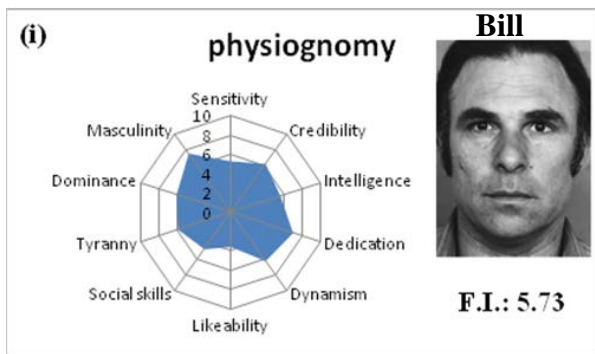
### 2.6.2 Qualitative analysis

Participants indicated briefly why the person depicted could be a business leader. The data were analysed following a two-step procedure similar to some of Schilling's (2006) suggestions for analysing qualitative data. First, the data were paraphrased, and then organised in category systems (basic leader prototypic and anti-prototypic traits). The category system indicated groups of traits (or key characteristics) of a business leader that were included in the quantitative ILTs list. The most frequent comments were "dynamic, determined, and confident", all characteristics of the general factor "dynamism". The paraphrased traits were counted (i.e., how many of the research subjects address a certain theme, see Schilling, 2006, p. 34) to identify any potential similarities. It appears that more than 50% of the qualitative answers for both parts of the questionnaire used at least one of the three characteristics, or combinations of the three, to justify their answers.

### 2.6.3 Evaluation of physiognomy: The neutral face

Figures 2.2i-iii represent the participants evaluations of the three actors' neutral faces (physiognomy).

Figures 2.2 (i-iii): Participants' evaluations of the neutral faces<sup>3</sup>



In order to facilitate the conversation flow, imaginary names were assigned to the actors (Bill, Michael, and John; see Figures 2.2, i-iii). The three emotionally neutral faces received different scores on leadership perception, with Bill getting the lowest and John the highest ratings. Some qualitative comments indicated that Bill would probably not be good as a business leader. Michael looked more dominant, ambitious and aggressive, and was therefore considered more leader-like than Bill. Finally, John seemed to have the combination of characteristics most conducive to leadership perceptions. His depiction avoids tyranny

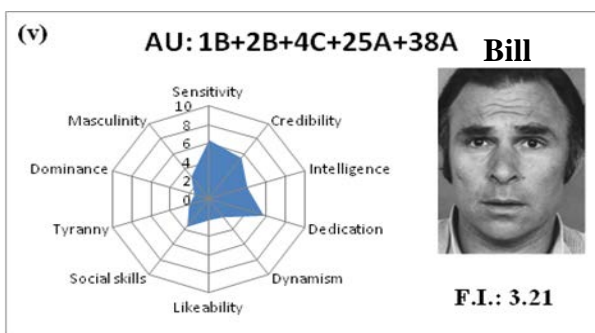
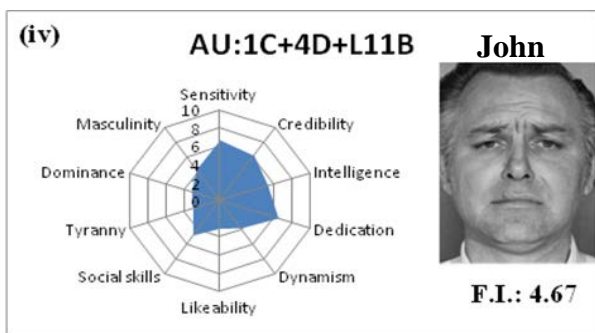
<sup>3</sup> Note: the photographs in studies 1 and 2 are taken from the F.A.C.S. manual (Ekman, Friesen, & Hager, 2002) and are reproduced with permission from the Paul Ekman Group.

characteristics. He was seen to be mature, experienced and positive. As expected, when the ratings for the leader characteristics matched more closely with the participants' ILTs (see Figure 2.1), the score on perceived leadership was higher.

2.6.4 Evaluation of facial expression: The impact of facial actions

Figure 2.3 (iv, v) shows the participants' evaluations of the images depicting facial expressions. The main facial action shown by both men is the raising and pulling together movement of the eyebrows (low dominance condition). This facial action was expressed in different degrees of intensities with John using higher intensity than Bill.

Figures 2.3 (iv, v): Participants' evaluations of the images showing facial expression



A comparison between John's and Bill's facial expressions (Figures 2.3) and their neutral faces (physiognomy; Figures 2.2) shows that the eyebrow raising and pulling together resulted in reducing the majority of leadership dimensions. Tables 2.1a,b show the results of



the t-tests between the participants perceptions of a neutral face and the eyebrow raising and pulling together (low dominance condition) for John and Bill.

Tables 2.1.a,b: Significant differences between participants' perceptions of physiognomy and facial expression

(2.1.a) Comparison of figures iii and iv (John)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		T	df	Sig. (2-tailed)
				F	Sig.			
FI	Figure iii	7.56	2.09	0.705	0.41	4.297	50	0.000
	Figure iv	4.67	2.23					
Sensitivity	Figure iii	6.64	1.88	1.024	0.32	-1.598	50	0.116
	Figure iv	7.52	1.47					
Credibility	Figure iii	6.09	1.72	1.904	0.17	-3.359	50	0.002
	Figure iv	7.74	1.27					
Intelligence	Figure iii	5.28	1.78	0.006	0.94	-3.418	50	0.001
	Figure iv	7.15	1.77					
Dedication	Figure iii	6.44	2.13	1.737	0.19	-2.393	49	0.021
	Figure iv	7.93	1.70					
Dynamism	Figure iii	3.80	2.37	0.072	0.79	-4.026	49	0.000
	Figure iv	6.74	2.38					
Likeability	Figure iii	3.11	2.25	0.036	0.85	-4.853	49	0.000
	Figure iv	6.53	2.38					
	Figure iii	4.78	2.07					

Social skills	Figure iv	7.28	1.41	2.012	0.16	-4.258	50	0.000
Tyranny	Figure iii	2.98	2.14					
	Figure iv	3.62	2.03	0	0.99	-0.999	50	0.323
Dominance	Figure iii	3.11	2.57					
	Figure iv	6.2	2.78	0.172	0.68	-3.816	49	0.000
Masculinity	Figure iii	4.18	2.45					
	Figure iv	7.4	1.45	5.331	0.03	-4.717	50	0.000

(2.1.b) Comparison of figures i and v (Bill)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		T	df	Sig. (2-tailed)
				F	Sig.			
FI	Figure i	5.73	1.71					
	Figure v	3.21	1.55	1.55	0.217	5.528	74	0.000
Sensitivity	Figure i	6.28	2.38					
	Figure v	5.29	2.14	0.563	0.455	1.465	73	0.147
Credibility	Figure i	5.42	2.04					
	Figure v	6.21	1.86	0.001	0.979	-1.369	74	0.175
Intelligence	Figure i	3.95	1.87					
	Figure v	5.5	1.64	0.259	0.612	-2.917	74	0.005
Dedication	Figure i	5.66	2.46					
	Figure v	6.9	2.40	0.002	0.963	-1.748	74	0.085
	Figure i	2.35	1.82					

Dynamism	Figure v	6.22	1.78	0.07	0.793	-7.395	74	0.000
Likeability	Figure i	2.22	1.87	16.82	0	-2.131	74	0.036
	Figure v	3.55	3.10					
Social skills	Figure i	3.62	1.86	5.281	0.024	-1.877	74	0.065
	Figure v	4.70	2.48					
Tyranny	Figure i	2.05	1.95	0.806	0.372	-6.563	74	0.000
	Figure v	5.81	2.12					
Dominance	Figure i	1.50	2.11	0.077	0.782	-7.457	74	0.000
	Figure v	6	2					
Masculinity	Figure i	2.96	2.81	0.354	0.554	-5.713	73	0.000
	Figure v	7.53	2.58					

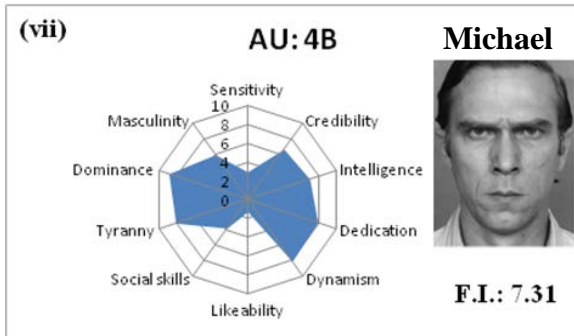
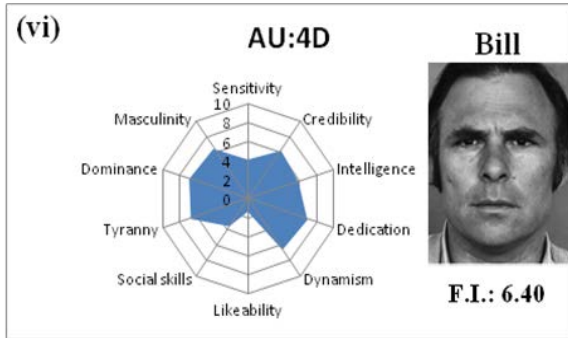
---

The first impression leadership score (F.I.) decreased for both men when their facial expression showed raising and pulling together the eyebrows: for John the value decreased from F.I. = 7.44 to F.I. = 4.67 and for Bill from F.I. = 5.73 to F.I. = 3.21. Additionally, these expressions decreased perceived leadership traits such as dominance, dynamism, likeability, masculinity, and intelligence considerably. Consistent with the physiognomy evaluation, John received a slightly more positive evaluation than Bill. A comment from the qualitative analysis was that both men, when raising and pulling together their eyebrows, looked stressed.

Figures 2.4 (vi, vii) demonstrate the participants' evaluations of the images depicting facial expressions. The main facial action illustrated by both men is the lowering and pulling

together movement of the eyebrows (high dominance condition) with Bill using higher intensity than Michael (see FACS, Ekman et al., 2002, intensity rating on top of figures).

Figures 2.4 (vi, vii): Participants' evaluations of the images showing facial expression



The lowered and pulled together brows slightly increased the first impression for perceived leadership for both men (comparing their neutral faces) and affected the ratings on leadership dimensions in a similar manner. Tables 2.2a,b show the results of the t-tests for differences between the participants perceptions of the physiognomy as compared to the eyebrow lowering and pulling together for both Bill and Michael.

Tables 2.2.a,b: Significant differences between participants' perceptions of physiognomy and facial expression

(2.2.a) Comparison of figures i and vi (Bill)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		t	df	Sig. (2-tailed)
				F	Sig.			
FI	Figure i	5.73	1.71	0.239	0.627	-1.306	48	0.198
	Figure vi	6.4	1.55					
Sensitivity	Figure i	4.18	1.38	4.975	0.03	-2.205	50	0.032
	Figure vi	5.29	2.14					
Credibility	Figure i	6.33	1.85	0.025	0.874	0.214	50	0.831
	Figure vi	6.21	1.86					
Intelligence	Figure i	5.95	1.68	0.148	0.702	0.883	50	0.381
	Figure vi	5.5	1.64					
Dedication	Figure i	7.01	2.02	1.151	0.288	0.173	50	0.863
	Figure vi	6.9	2.40					
Dynamism	Figure i	6.58	2.10	1.163	0.286	0.578	50	0.566
	Figure vi	6.22	1.78					
Likeability	Figure i	1.30	1.35	38.97	0	-3.666	50	0.001
	Figure vi	3.55	3.10					
Social skills	Figure i	3.50	1.46	14.11	0	-2.161	50	0.036
	Figure vi	4.70	2.48					
Tyranny	Figure i	6.69	1.76	2.011	0.162	1.534	50	0.131
	Figure vi							

	Figure vi	5.81	2.12					
Dominance	Figure i	6.89	2.79					
	Figure vi	6	2	3.948	0.052	1.121	50	0.267
Masculinity	Figure i	6.56	3.27					
	Figure vi	7.53	2.58	0.939	0.337	-1.017	50	0.314

(2.2.b) Comparison of figures ii and vii (Michael)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		t	df	Sig. (2- tailed)
				F	Sig.			
FI	Figure ii	6.6	1.18					
	Figure vii	7.32	1.67	2.198	0.142	-1.561	73	0.123
Sensitivity	Figure ii	2.92	2					
	Figure vii	3.93	1.46	1.537	0.219	-1.835	72	0.071
Credibility	Figure ii	6.57	1.7					
	Figure vii	6.01	1.17	2.065	0.155	1.203	72	0.233
Intelligence	Figure ii	6.96	1.47					
	Figure vii	6.41	1.13	1.605	0.209	1.344	72	0.183
Dedication	Figure ii	7.86	1.75					
	Figure vii	7.25	2.05	0.354	0.553	1.127	71	0.264
Dynamism	Figure ii	8.06	1.36					
	Figure vii	7.3	1.39	0.002	0.962	1.888	71	0.063
Likeability	Figure ii	1.27	1.63					
	Figure vii			0.907	0.344	-2.257	71	0.027

	Figure vii	2.4	1.94					
Social skills	Figure ii	3.73	1.65					
	Figure vii	4.14	2.09	0.908	0.344	-0.822	72	0.414
Tyranny	Figure ii	8.05	1.62					
	Figure vii	7.05	1.66	0.102	0.75	2.141	72	0.036
Dominance	Figure ii	8.83	1.57					
	Figure vii	8	1.71	0.945	0.334	1.753	71	0.084
Masculinity	Figure ii	5.85	3.01					
	Figure vii	6.07	2.4	2.609	0.111	-0.261	72	0.795

---

In contrast to the previous facial expression examined, lowering and pulling together the eyebrows resulted in a statistically non-significant increase of first impression leadership compared to physiognomy ratings: for Bill the ratings increased from F.I. = 5.73 to F.I. = 6.40 and for Michael from F.I. = 6.6 to F.I. = 7.31. Similarly, the changes in the leadership trait ratings were not all significant. The only variable that decreased significantly for both actors was perceived likeability. The changes in the rating of the actors – for Bill a decrease in perceived sensitivity and social skills and for Michael an increase in perceived tyranny – reveal a hostile leadership quality. It seems that lowering and pulling together the eyebrows made the actor look “tougher” and less “soft”. Additionally, even though the changes in prototypical traits such as credibility, dedication, dynamism and dominance were not statistically significant, they were more in line with the participants’ ILTs (figure 2.2) than the ratings of physiognomy (figures 2.3i,2.3ii). The latter may explain why the two men with

lowering and pulling together eyebrows received slightly higher leadership ratings than their physiognomy charts.

Table 2.3 shows the results of the t-tests for differences between the participants' perceptions of Bill lowering and pulling together the eyebrows and raising and pulling together the eyebrows.

Table 2.3: Significant differences between participants' perceptions of Bill lowering and pulling together the eyebrows and raising and pulling together the eyebrows

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		t	df	Sig. (2-tailed)
				F	Sig.			
FI	Figure vi	6.4	0.94	5.568	0.02	17.152	95	0.000
	Figure v	3.21	1.55					
Sensitivity	Figure vi	4.19	1.39	15.48	0	-4.852	95	0.000
	Figure v	6.28	2.39					
Credibility	Figure vi	6.34	1.85	0.111	0.74	2.208	95	0.03
	Figure v	5.42	2.06					
Intelligence	Figure vi	5.95	1.69	1.399	0.24	5.205	95	0.000
	Figure v	3.99	1.88					
Dedication	Figure vi	7.01	2.03	2.076	0.153	2.698	95	0.008
	Figure v	5.72	2.45					
Dynamism	Figure vi	6.59	2.11	1.481	0.227	10.373	95	0.000
	Figure v	2.38	1.83					
	Figure vi	1.31	1.36					



Likeability	Figure v	2.27	1.87	4.418	0.038	-2.717	95	0.008
	Figure vi	3.51	1.46					
Social skills	Figure vi	3.63	1.88	2.441	0.121	-0.337	95	0.737
	Figure v	6.69	1.76					
Tyranny	Figure vi	2.06	1.97	0.595	0.442	11.701	95	0.000
	Figure v	6.89	2.8					
Dominance	Figure vi	1.53	2.12	8.923	0.004	10.688	95	0.000
	Figure v	6.57	3.28					
Masculinity	Figure vi	2.97	2.81	0.641	0.425	5.749	95	0.000
	Figure v							

---

In contrast to the previous facial expression examined, lowering and pulling together the eyebrows was rated significantly higher in first impression leadership score (FI) compared to raising and pulling together the eyebrows: FI - eyebrow lowering = 6.40; FI - eyebrow raising = 3.21. Similarly, the changes in the leadership dimensions ratings were significant. The only dimension that was the same for both facial actions was perceived social skills. Bill was perceived as more credible, intelligent, dedicated, dynamic, tyrannical, dominant, and masculine, and less sensitive, likeable and socially skilled when he was lowering and pulling together his eyebrows than when he was raising and pulling them together.

#### 2.6.5 Discussion of study 1

Study 1 investigated to what extent facial expressions influence leadership perceptions. Initially, participants' ILTs were examined. The findings revealed that determination, confidence and dynamism (all sub-characteristics of "dynamism") are key traits in

participants' own ILTs (quantitatively and qualitatively). The results for the manipulations used in the study, showed a non-statistical tendency to support the first hypothesis (H1). That is, when the participants' ILTs matched better with the inferences made from the leaders' facial expressions, the actors tended to be perceived as more leader-like.

Furthermore, the results indicate that physiognomy (neutral face) plays an important role in the perception of leadership and interpretation of expressions (H3). Bill and Michael differed with respect to some leadership relevant qualities (dominant, ambitious and aggressive), giving Michael a higher rating in leadership impression (see figures 2.2i,ii). Interestingly the ratings he received when he frowned were still higher than Bill's, who used the same facial expression but with twice the intensity. A similar pattern appears for John who received the highest leadership perception ratings on the physiognomy evaluation. When showing a brow-raising facial expression (sign of stress; see section 3.4), he still scored higher than Bill on leadership even though the intensity of his expression was higher. It seems that the first impressions of the physiognomy pictures were used by the participants as a biasing filter for evaluations of facial expressions (H4).

With respect to the facial expressions used here, the findings partially support hypothesis 2 regarding eyebrow movements and leadership perception. The two brow raisings (low dominance condition) were perceived as signs of stress. They made the actors look insecure in comparison to their respective physiognomies, thus leading to a significant decrease in the ratings of prototypical leadership traits such as dynamism, dominance, likeability, masculinity, and intelligence, and a decrease in overall leadership perception. Furthermore, the analysis showed that lowered and pulled together brows (high dominance condition) did not increase perceived leadership ratings significantly. However, the frown seemed to give the depicted men a "vibe" of power that slightly increased their total leadership ratings. At the same time, that vibe carried a note of hostility thus decreasing

ratings of “soft” traits such as sensitivity and likeability. This likely prevented the image from reaching a better match with the participants ILTs. Finally a comparison of Bill’s displays of the two eyebrow movements showed that when he used the brow lowering and pulling together he was perceived much more leader-like than when he raised and pulled together his eyebrows. This is useful in the context of leadership because it suggests that the respondents preferred a leader displaying signs of aggressiveness rather than a leader displaying signs of sensitivity.

The basic prototype filter, which provides the background theory for this research, provides a basis for leadership perceptions. However, other factors, such authenticity, context and appropriateness, need to be considered. These factors will be addressed in study 2.

## **Study 2: Expanding the theory**

### **2.7 Other factors that impact leadership perception**

#### 2.7.1 Authenticity, context and appropriateness: Key factors that differentiate the perceived meaning of facial expressions

Research on the perception of facial expression has highlighted the significance of context (Carroll, & Russell, 1996; Cook, 1981) and authenticity (Krumhuber, Manstead, Cosker, Marshall, & Rosin, 2008; Krumhuber, Manstead, & Kappas, 2006). Furthermore, appropriateness received attention both from research within the field of nonverbal communication (Ekman & Oster, 1979) and within the field of leadership (Bucy, 2000). Consequently, these key factors are integrated into the second study.

Roberts (2005) defines authenticity as the level of correspondence between actual feelings and emotional expressions. Research has related authenticity of expression to, for example, positive personality traits (Frank, Ekman, & Friesen, 1993) and leadership influence (Newcombe & Ashkanasy, 2002). A line of research examined authenticity and perception of

the human smile. Particularly, studies have shown that people can recognise authentic smiles and that they react more positively to authentic (so-called “Duchenne” smiles) than to fake smiles (Frank, Ekman, & Friesen, 1993; Surakka & Hietanen, 1998). Especially in the business context, felt emotions such as the “Duchenne” smile seemed to evoke similar and positive feelings in customers (Thorsten, Groth, Paul, & Gremler, 2006). Authenticity can be, and is, inferred from facial expression in everyday life (Ekman, 2003), thus it influences the perception of traits such as credibility, trustworthiness, and confidence (Bucy & Bradley, 2004; Frank, Ekman, & Friesen, 1993; Roberts, 2005). As a result, leaders who display authentic emotions via facial expressions would be expected to be considered more favourable than those whose expressions are non-authentic.

Context is another important factor that should be considered when studying facial expression (Ratner, 1989; Wallbott, 1988), perception in general (Hinton, 1993), and leadership perception (Bucy & Bradley, 2004). In an experimental study, Carroll and Russell (1996) found that facial expressions were interpreted differently depending on the context of communication. They showed pictures of a woman with the universal expression of fear. In different contexts, the scholars activated different expectations of expressions which seemed to “blend” with the facial expression in the participants’ minds. In other words, the participants were adjusting the emotion perceived in a way that it would render this expression adequate in that particular context. That means that the same facial expression can have different meanings in different contexts. The influence of context in interpreting behaviours is also highlighted in the field of leadership perceptions. Mendvedeff and Lord (2007) when discussing leadership perception, argue that perceivers use a combination of contextual information and stereotypical knowledge (ILTs) to interpret observed behaviours. More importantly, when context information is not enough to give rational answers for a leader’s behaviours, ILTs are given more weight in the perceptual process to rationalise the

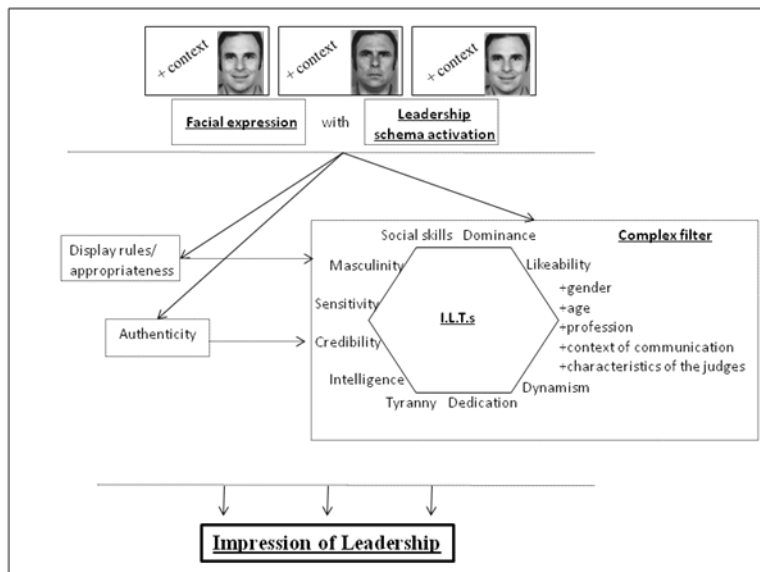
events (Mendvedeff & Lord, 2007). To summarise, context of communication is expected to influence how facial expressions are interpreted.

Relevant to this context is the concept of display rules (Ekman & Oster, 1979) or “normative expectations” (Sutton & Rafaeli, 1988, p. 462). These identify which expressions are appropriate in a certain context. Display rules are culturally specific social contrasts that people carry about what is appropriate to express in certain situations (Matsumoto, 1990; Reissland & Harris, 1991; Sutton & Rafaeli, 1988). So, for example, a very common display rule is for a stewardess to smile when welcoming a customer (Hochschild, 1983), or a funeral director to express sadness (Rafaeli & Sutton, 1987). Appropriateness with respect to display rules has been mentioned in the area of leadership as well (Bucy & Bradley, 2004). Studies concerning presidential leadership found that negative and low intensity displays were expected and thus evaluated as more appropriate than positive reactions (Bucy, 2000; Bucy & Newhagen, 1999). Congruencies and incongruencies in display rules are considered in interpreting the results of study 2.

### 2.7.2 The complex prototype filter

The prototype filter, discussed in study 1, becomes much more complicated when other factors are considered: Gender, culture, age, and profession of the perceiver and the perceived person, context of communication, appropriateness of expression, and authenticity all shape the perception process (Bucy & Bradley, 2004; Carroll & Russell, 1996; Den Hartog, House, Hanges, Ruiz-Quintanilla, & Dorfman, 1999; Ferris, Bhawuk, Fedor, & Judge, 1995; Konst & Van Breukelen, 2005). The choice of context is thus relevant for the perception of leadership.

Figure 2.5: Theory proposed for the perception of leadership



An example illustrates this point: A 50 year-old male military leader will be evaluated using a different complex leader prototype filter than a 35 year-old female business leader, in the same context. So, perceivers' expectations of the facial expressions are most likely to be very different in these two cases. In this example, the military leader might be expected to be more aggressive (e.g., frown) and serious (e.g., non-smiling) compared to the business leader. The expectation is reinforced by gender expectations (the male expectations are in line with the military leader role expectations). The filter becomes even more complicated when characteristics of the judges are involved. In the military example, different perceptual impacts could result for a perceiver who works in the army and a perceiver who does not.

Thus it is assumed:

Hypothesis 5: Participants' expectations will define ranges of appropriate, and thus, acceptable leader facial expressions that will affect general leadership perceptions.

Leadership studies have linked positive emotional expressions with perceivers' evaluations (Bono & Illies, 2006; Madera & Smith, 2009). Taking into account the context of the experiment (here: a leader-client situation), the expected display rule is a positive emotion (Pugh, 2001). Expanding the previous hypothesis, it is expected that participants will consider positive facial expressions to be more appropriate than negative facial expressions.

Hypothesis 6: Participants will rate positive expressions (expressions with indicators of happiness, e.g., smiling) higher in leadership perception than negative ones (expressions with indicators of anger, or sadness, e.g., eyebrow lowering and pulling together or eyebrow raising and pulling together).

## *Study 2*

### **2.8 Method**

#### 2.8.1 Participants

Participants were 60 Cypriot postgraduate part time M.B.A. students, 41.7% men and 58.3% women. Their age ranged from 20 to 50 years old, with an average of 33.53 (S.D.=8.18).

#### 2.8.2 Design and instruments

As in study 1, initially, participants' implicit leadership theories (ILTs) were assessed (see appendix E). Using the same list of characteristics, participants were subsequently asked to assess imaginary scenarios illustrated by facial expressions. Again, there was space for a qualitative explanation. Finally, the participants were asked to choose from a variety of pictures depicting different facial expressions the ones which they considered most appropriate for the same illustrated scenario.

### 2.8.3 Implicit Leadership Theories (ILTs)

The procedure used in study 1 was also applied in study 2 for measuring the participants' ILTs.

### 2.8.4 Experimental design and stimulus material

The study was conducted in two in-class sessions. A hypothetical scenario was employed describing a routine working situation. Unquestionably, actual communication involving leaders and customers cannot be restricted to stories such as those appearing in the following scenarios. However, the target was to keep the stories in line with actual organisational situations where the concept of leadership could be activated. The context in the scenario was activated as follows: "The man you will see in the story below works in a Cypriot bank. His name is Mr Ioannou. A story will follow which narrates a normal day at work. Imagine you are a new customer to that bank and you are meeting Mr Ioannou to arrange a loan. Photos depicting Mr Ioannou facial expressions will be appearing at particular times in the story".

There were three stages in the scenario:

Stage 1 (introduction): "You arrive at the bank, you get into the office and you and Mr Ioannou are introduced..."

Stage 2 (negotiations): "... you have a seat and start discussing the procedures of the loan. The loan is quite big so a lot of attention needs to be paid to the negotiations to avoid misunderstandings..."

Stage 3 (sealing the deal and goodbye): "... the negotiations are finally over, you sign the necessary documents, and you shake hands to say goodbye..."

Each stage was accompanied by one facial expression. There were a total of eight pictures depicting facial expressions. These pictures were used in different combinations for the scenarios.



### 2.8.5 Facial expression

The stimulus material consisted of pictures of a head taken from FACS manual and therefore the pictures were FACS coded (see appendix F).

The criterion used for selecting the actor from the reference example images (FACS manual, Ekman et al., 2002) was the frequency of appearance of his images in the manual. The goal was to use an actor of whom many pictures were available, to allow for a greater range of facial expression manipulation. The actor selected appears in 88.27% of the total reference example images, in contrast with the second most frequent actor who appears in only 10.34% of the images.

The facial expressions were selected after considering the factors introduced earlier (authenticity and appropriateness as adjustment to the context) in combination with facial expressions used in study 1 (eyebrow movement). Specifically, the following facial expressions were used for the scenarios: authentic and non-authentic smiles (see section 2.9.3, comparison of figures 2.7, B1 and B3 and B6); eyebrow lowering and pulling together and eyebrow raise and pulling together (see section 2.9.3, comparison of figures 2.7, B1 and B2); and appropriateness of expression for each stage of the scenario (see section 2.9.3, comparison of figures 2.7, B4 and B5 and B7; or B1, and B2 and B6). Furthermore, intensity of smiling was manipulated (see section 2.9.3, comparison of figures 2.7, B1 and B3 and B6) to check for perceptual variations from subtle differences in facial expression (Surakka & Hietanen, 1998).

Part B of the questionnaire comprised of seven different variations, with nine participants each completing variations B3, B5, B6, and B7, and eight participants each completing variations B1, B2, B4. After reading the scenario, the participants were asked to indicate their overall first impression leadership score for the man depicted and briefly justify their rating qualitatively. Subsequently, the script explained that the man in the photo is one

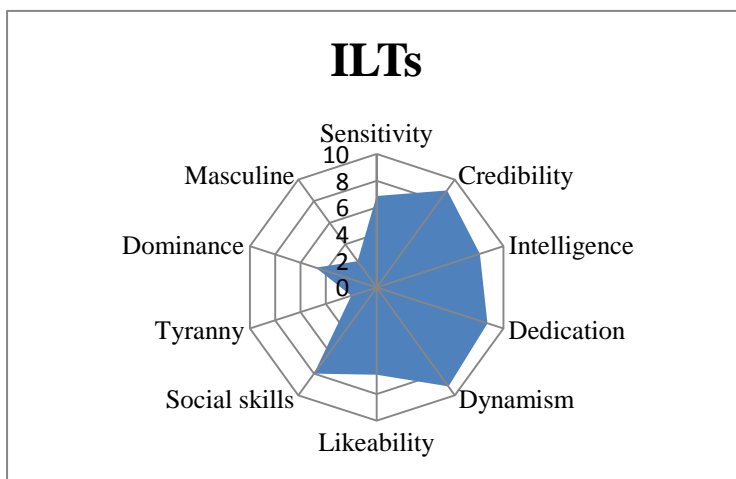
of the candidates for a promotion to regional manager and the assessment group (the role of the participants) had to evaluate the candidates regarding their leadership abilities (the ILTs list).

Lastly, in part C of the questionnaire the participants were asked to choose from a variety of pictures for the three stages of the scenario. They were asked to justify their choices qualitatively.

## 2.9 Results

### 2.9.1 Quantitative analysis of participants' ILTs

Figure 2.6: Participants ILTs study 2



Again, the means of the ILTs factors are illustrated on the radar-graph (see Figure 2.6). Expectations of leadership were shown to rely on dynamism, credibility and dedication followed by intelligence, social skills and dominance, respectively. Sensitivity and likeability were found to be less characteristic leadership qualities as compared to study 1. Masculinity and tyranny were rated as lowest by the participants. The chart will be used to compare the evaluation of the facial expressions to the ILTs.

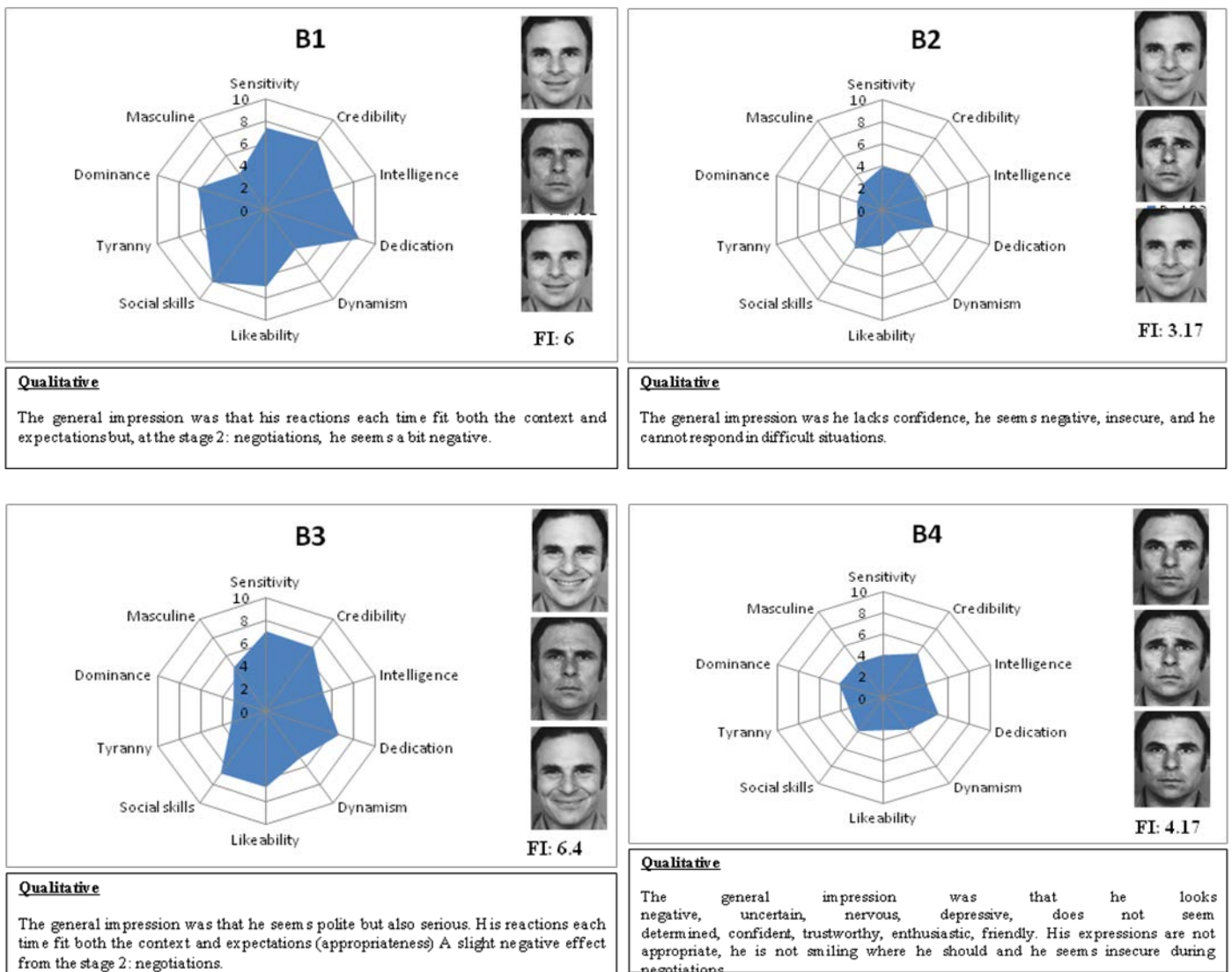
### 2.9.2 Qualitative analysis of participants' ILTs

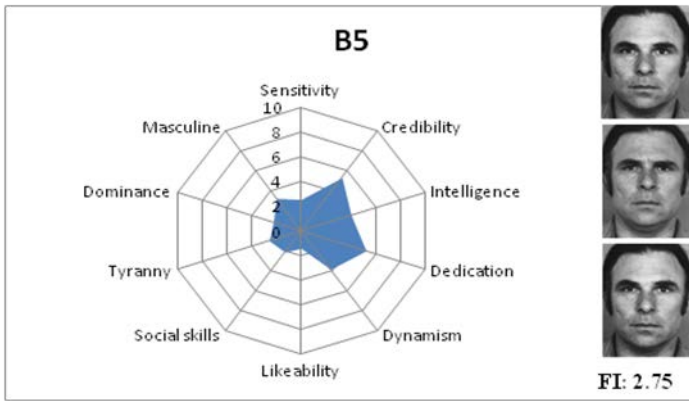
For the qualitative analysis, the same approach as in study 1 was followed. The key characteristics of a business leader named by the participants were determination, dynamism, and confidence, all sub-characteristics of the dynamism cluster.

### 2.9.3 Evaluation of the illustrated scenarios: The impact of facial expressions

Figures 2.7 (B1-B7) represent the participants' quantitative and qualitative evaluations of the three-stage illustrated scenarios after giving a total rating of their first impression of leadership for each scenario.

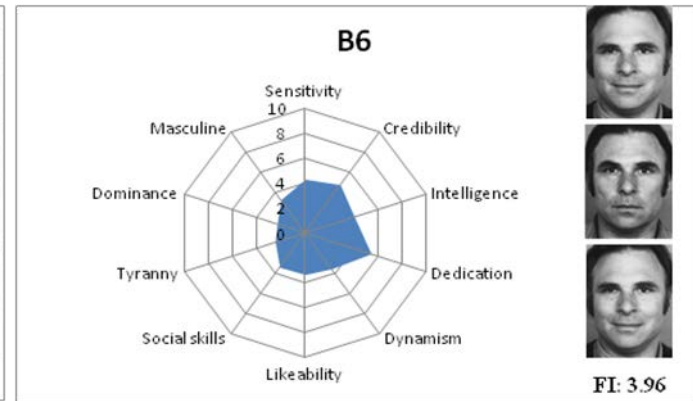
Figures 2.7 (B1-B7): Evaluations of facial expressions for the illustrated scenarios





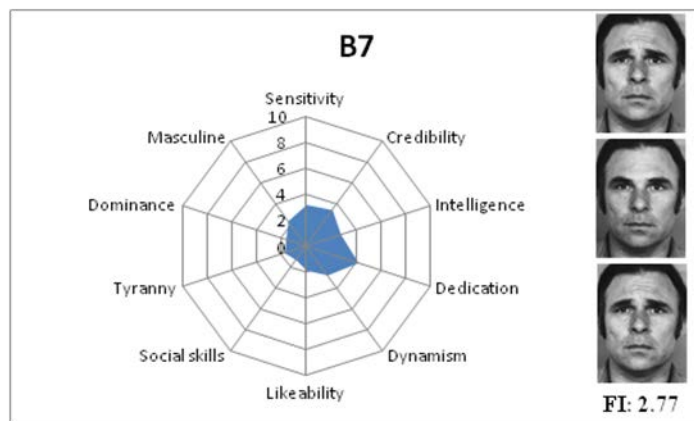
**Qualitative**

The general impression was that his expressions are not appropriate for a business leader. He is not showing any positive emotion where he should and he seems pondering and a bit rude during negotiations.



**Qualitative**

The general impression was that although he looks serious, he is lacking emotion. He does not seem determined, dynamic or confident.



**Qualitative**

The general impression was that he looks stressed, scared, sad, miserable, he lacks confidence, dynamism, sociability, likeability, and positive energy.

The qualitative analysis showed that there was a range of expectations of facial expression for each stage. The participants considered a positive facial expression, such as smiling, appropriate for the first (introduction) and the third stage (shake hands and say goodbye). A more serious facial expression was expected in the second stage (negotiations). Table 2.4 illustrates a summary of the results for scenarios B1-B7.

Table 2.4: Summary of results for B1-B7

	First Impression	Stage 1	Stage 2	Stage 3	Match	Leadership impression
B1	6	Non-authentic smile	Brow lowering and pulling together (frown)	Non-authentic smile	√	High compared to other combinations (but hostile)
B2	3.17	Non-authentic smile	Brow raising and pulling together	Non-authentic smile	X	Low
B3	6.4	Authentic smile	Brow lowering and pulling together (frown)	Authentic smile	√	The highest compared to other combinations
B4	4.17	Neutral face	Brow raising and pulling together	Neutral face	X	Low
B5	2.75	Neutral face	Brow lowering and pulling together (frown)	Neutral face	X	Very low
B6	3.96	Non-authentic smile	Neutral face	Non-authentic smile	X	Low
B7	2,77	Brow raising and pulling together	Neutral face	Brow raising and pulling together	X	The lowest compared to other combinations

*Note.* Stage 1 = positive expectation; Stage 2 = serious expectation; Stage 3 = positive expectation; Match = Facial expressions appropriateness. Match with participants' expectations

The B1 combination of facial expression seemed to be within the participants' range of expectations (compared to other combinations) scoring "6" out of "10" on first impression (F.I.) of perceived leadership. Even though the non-authentic smiles for stages 1 and 3 were considered appropriate, the eyebrow lowering picture was perceived by the participants as

slightly hostile. That probably explains why characteristics such as dominance and tyranny were much more prevalent than would be expected from participants' ILTs (see figure 2.6 and figure 2.7-B1), resulting in a decrease of the overall leadership perception. In contrast, the expressions used in B2 (first impression score: 3.17) and B6 (first impression score: 3.96) for stage 2 were out of the participants' range of expectations, thus resulting in low ratings (Figures 2.7-B1, B2). Specifically, the brows raising and pulling together used in stage 2 for B2 resulted in the general impression of the man being less confident, more negative, insecure, and incapable of responding to difficult situations.

With respect to intensity, it seems that the participants expected more intense expressions from B6 combination as all characteristics were rated low. The qualitative analysis revealed that although the man in the picture looked serious, he lacked emotion which decreased perceptions of determination, dynamism, and confidence, traits included in the "dynamism" cluster which was rated highly in the participants' ILTs lists (see figure 2.6).

It appears that the combination of facial expressions in scenario B3 (first impression score: 6.4) was a better match with the participants' expectations for a business leader's behaviour than the other combinations (see Figures 2.7 B1-B7, and table 2.4). The high intensity authentic smiles in stages 1 and 3 seemed to affect the characteristics' inter-dynamics (see Figures 2.7 B1 in comparison to B3). The intensity of the smiles in scenario B3 diminished some of the negative effects of the frowning picture, "softening", in that way, the whole image as indicated by the low score on perceived tyranny and dominance.

The remaining scenario variations (B4-B7) were all examples of violations of what the participants considered leader-appropriate facial expressions, thus resulting in low ratings of leadership perceptions. In B4 (first impression score: 4.17) the participants' qualitative comments stressed the problem of appropriateness by identifying the lack of positive expression in stages 1 and 3. Moreover, the facial expression used in stage 2 made the man

look less determined, confident, trustworthy, enthusiastic and friendly and made him seem uncertain, nervous, insecure, negative and depressive. In B5 (first impression score: 2.75), again, a neutral face was displayed in stages 1 and 3, as opposed to the expected positive emotion. At the same time the overall impression seems to be “controlled” by the only expression available, the brow lowering and pulling together (frowning). The qualitative analysis revealed a lack of appropriateness due to the missing positive expression in stages 1 and 3. The negativity created by the frowning created the impression of confusion and rudeness. Finally, in B7 (first impression score: 2.77) the brows raising and pulling together used for stage 1 and stage 3 (again contradiction of positive emotion expectation) lead to a dramatic decrease in all aspects of perceived leadership. The pictures in the three stages did not convince the participants of the man’s leadership abilities. The qualitative analysis revealed a general impression of a man who is stressed, scared, sad, and miserable, lacking confidence, dynamism, sociability, likeability, and positive energy.

#### 2.9.4 Participants’ own preferences for the scenario’s facial expressions

In the third part of the questionnaire the participants were asked to choose from a variety of pictures for the three stages of the scenario. They were asked to justify their choices qualitatively.

Figures 2.8i-iii represent the participants’ selections from a variety of pictures with different facial expressions. The pictures contain a neutral face, a frown (lowered and pulled together brows of high intensity), an expression of raised and pulled together brows of medium intensity and expressions of different quality smiles (one non-authentic smile, and variations of authentic smiles).

Figure 2.8i: Picture selected for the introduction phase (stage 1)

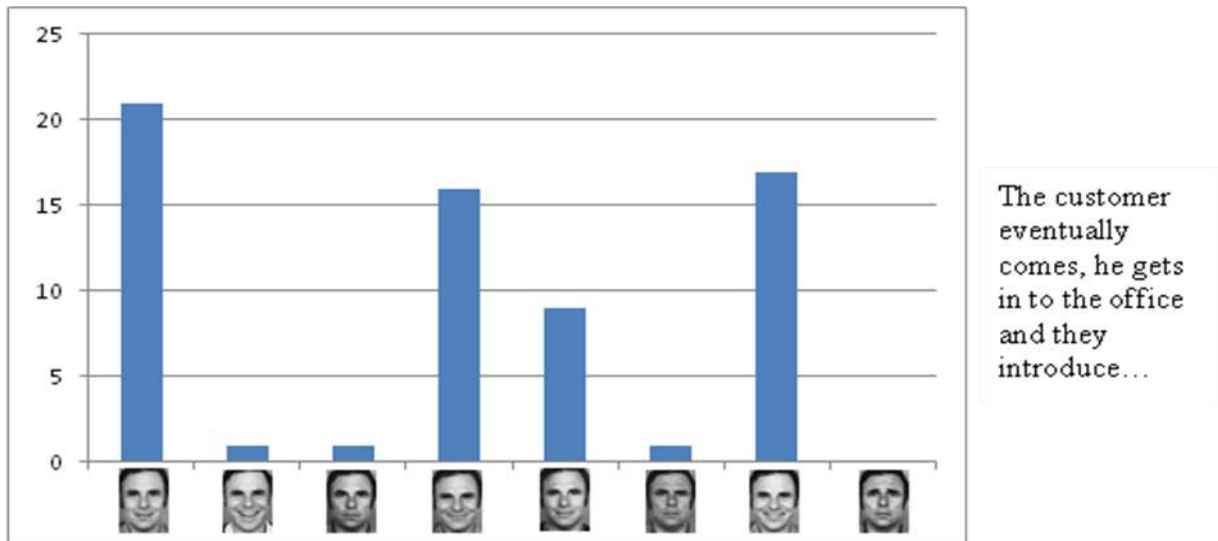


Figure 2.8ii: Picture selected for the negotiations phase (stage 2)

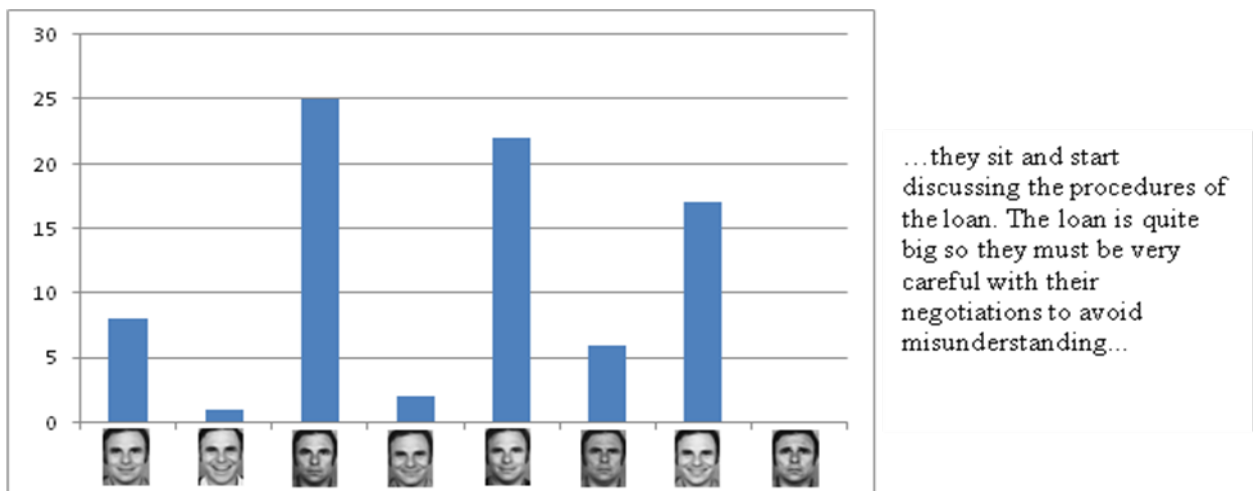




Figure 2.8iii: Picture selected for the sealing the deal, goodbye phase (stage 3)

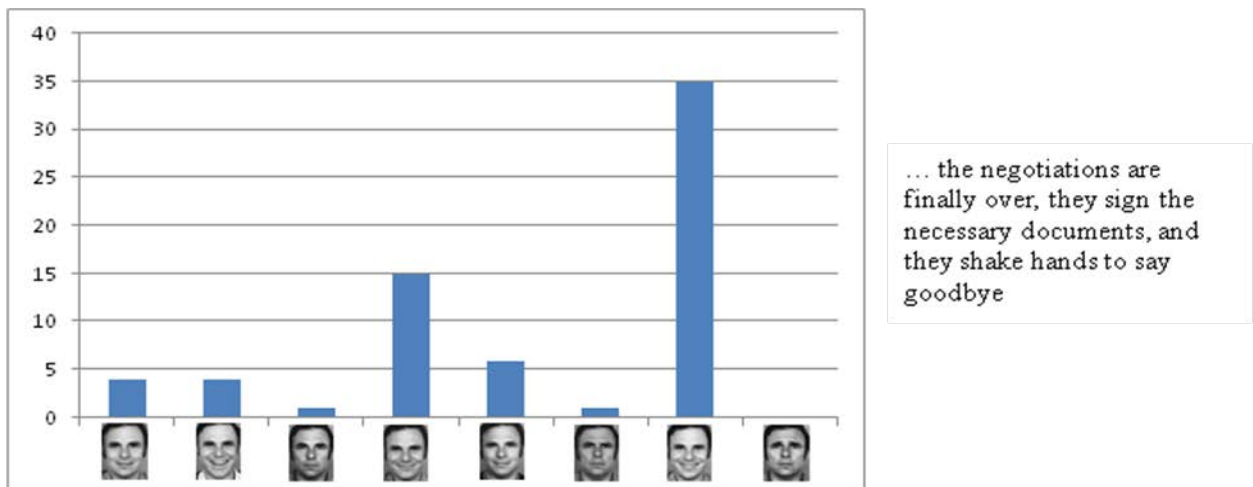


Figure 2.8i reveals the participants' preferences for the facial expressions appropriate for the introduction stage. Surprisingly, the non-authentic smile was the preferred expression, followed by two authentic smiles. The qualitative analysis exposed the reasons for these preferences. In the context of an introduction, the participants found the expression of positive emotion and a friendly approach appropriate. However, overdoing it should be avoided in order to maintain a serious-professional image.

Figure 2.8ii shows the participants' preferences for facial expressions appropriate for the negotiation stage of scenarios. The neutral face was the most preferred of the expressions, followed by two of the authentic smiles. The qualitative analysis provided the reasons for these preferences. In the context of negotiations, the participants considered that showing seriousness, attention, and confidence is appropriate. They expected a face that would reassure and indicate that the leader was participating actively, positively, but also with the required seriousness.

Regarding participants' preferences for the facial expressions appropriate for the shaking hands and saying goodbye stage (figure 2.8iii), their expectations were very clear. A high-intensity authentic smile was the preferred expression, followed by another authentic

smile. These two smiles dominated the preferences for this stage. The reasons of these preferences were revealed in the qualitative analysis. The participants found it appropriate in the context of the last stage to show authentic happiness for the acquaintance and also the collaboration, and leave a positive, warm, and friendly last impression.

#### 2.9.5 Discussion of study 2

In study 2, impressions were compared to complex ILTs that included authenticity and context. The procedures represented in the scripts activated expectations of behaviours and facial expressions. The results again tended to confirm the first hypothesis (H1), when these expectations of facial expression matched the expression displayed more closely, the actors were perceived as more leader-like (see figures 2.7, B1-B7).

Leadership impressions in the illustrated scenarios, which were constructed from the facial expressions, created a general leader-positive or leader-negative impression. The latter was used by the participants as a “biasing filter” for evaluating the actors. The comparison of the impressions from facial expressions in scenarios B5, B1, and B3 (see figures 2.7, B1-B7) supports this idea. In these three scenarios, participants interpreted the same frowning expression more favourably in terms of leadership perception in the “negotiations” part as the facial expressions for stages 1 and 3 became more positive (for B5: neutral faces, for B1: non-authentic smiles and for B3: authentic smiles). It seems that the three facial expressions constructed an impression which then “spilled” over to the other expressions. The assumption of the general impression “spill-over” is reinforced by some of the qualitative comments for cases like B6 and B4 where neutral faces in stage 1 and 3 were surrounding a facial expression in the negotiations stage. Participants perceived rudeness in the neutral faces in B6 while in B4 they could see insecurity and lack of confidence during the introduction and

goodbye stages. Furthermore, in B7 participants, again, perceived uncertainty and insecurity in the neutral face.

Regarding the participants' choices for the facial expressions appropriate for a leader in different stages, hypotheses 5 and 6 were supported: positive expressions were indeed preferred (H6). In addition, an underlying appropriateness heuristic defined ranges of acceptable facial expressions, explaining why a positive tone was preferred by the participants (H5). For the first stage of the scenario, participants wanted a positive welcome but nothing exaggerated, with the non-authentic smile ranking first in their preferences. The display of positive emotion even if it is not felt was enough to meet the participants' display rules for a leader in that situation. In the second stage, they expected the leader to be serious but again with a slightly positive and friendly attitude, showing that everything is under control. Finally, with respect to the third and final stage, genuine displays of happiness were considered highly appropriate to show satisfaction for the acquaintance and collaboration, but also leave a warm and friendly last impression.

## **2.10 General discussion of studies 1 and 2**

The current chapter introduced phase 1 (studies 1 and 2) of the research. The studies presented here aimed to contribute to our knowledge about the influence of facial expressions on the perception of leadership. Generally, the results of phase 1 revealed that facial expressions influence the perception of leadership. Additionally, in accordance with Nye and Forsyth's (1991) model of the behaviour-expectation match, the findings of the two studies, showed a tendency for the actors to be perceived as more leader-like when their facial expressions implied traits which matched the participants' ILTs. This is important because it suggests that participants' prototypes of leadership influence their actual leadership perceptions.

Study 1 used single photos leader/actors' faces exploring physiognomy and facial expression statically. The results of the study revealed that physiognomy influenced leadership perceptions. Specifically, the participants gave different leadership dimension ratings for the different physiognomy photos (H3). This was not a surprise since a considerable number of studies support that physiognomy is crucial in perceptual procedures (Hassin & Trope, 2000; Masip, Garrido, & Herrero, 2004; Neth & Martinez, 2009; Todorov, Said, Engell, & Oosterhof, 2008; Willis, & Todorov, 2006; Zebrowitz, 1997; Zebrowitz, Fellous, Mignault, & Andreoletti, 2003). Furthermore, when the leader/actors were rated on their facial expressions, participants' leadership perceptions were in line with the physiognomy evaluations. Particularly, the early impressions created from physiognomy seemed to comprise a source of bias for later perceptions of facial expressions (H4). Generally, these results demonstrate that the leader's physiognomy plays a defining role in leadership perceptions. What is more, the findings of study 1 partially supported hypothesis 2 testing the effect of two eyebrow movements in leadership perception. Raised and pulled together eyebrows caused a significant decrease in the majority of leader dimensions and leader-likeness, making the actor look weak. Lowered and pulled together eyebrows resulted in a non-significant increase in leader-likeness making the actor appear "tougher" and less "soft". Comparing the two eyebrow movements for the same actor revealed that the participants preferred the leader using a frown (sign of aggressiveness) rather than using an eyebrow raise (sign of sensitivity). These preferences of the respondents are important for leaders as they can help them gain awareness of how people perceive facial expressions in organisational settings and use that knowledge to communicate more accurately.

Study 2 used three-stage illustrated scenarios using different combinations of facial expressions. Participants' opinions revealed an overall preference for positive facial expressions over negative facial expressions (H6). The latter results are in agreement with

other leadership studies correlating positive emotional displays with perceivers' assessments (Bono & Ilies, 2006; Madera & Smith, 2009). Further analysing these participants' preferences on positive facial expressions revealed ranges of acceptable facial expressions in the form of an appropriateness heuristic (H5). Specifically, participants preferred (1) smiling displays (regardless of whether it was authentic or not) when the leader was introduced to the customer, (2) serious but positive expressions during negotiations, and (3) authentic smiles when saying goodbye. It seems that participants used all available information to decide which facial expression was appropriate in each stage of the scenario. Generally, the results of this section are very different from those of previous research, which showed that people preferred negative and low intensity presidential leadership displays (Bucy, 2000; Bucy & Newhagen, 1999). These differences reveal that negative expressions may be considered appropriate in a certain context while positive facial expressions might be considered appropriate in another context. This is essential for organisational communication because it implies that leaders need to focus on understanding the impact of their facial expressions within the specific communicational context rather than trying to find a "gold" repertory of facial expression to use in all cases.

To summarise, the preliminary research showed that facial expressions have a powerful influence on the perception of leadership. The aim of the two studies presented here was to pilot the design but also to add to our knowledge about the contribution of facial expression to the perception of leadership. Participants' prototypes of leadership were assessed. In addition, participants were shown pictures of different facial expressions. Perceived leadership from the facial expressions was compared to the participants' prototypes. The results indicate that the participants used all available information, including facial appearance, expression, context of communication, appropriateness, and authenticity of expression to form complex prototypes. When the facial expressions in the studies matched

the participants' prototypes, perception of leadership tended to be higher. These primary findings seem to agree with the argument brought forward in the literature review, namely that understanding what is inside the perceiver's mind is significant for understanding leadership perception. A significant limitation of these first studies was the sample size. This was a threat for the factorability of the ILTs model since exploratory factor analysis was only indicative. In addition, the small sample of study 2 did not allowed for statistical testing between the variations. However, on the basis of these two studies, the main research (phase 2) was constructed and a statistically stronger design was applied. The next chapter presents phase 2 of the research.

## *Chapter III: Phase 2 of the research*

### **3.1 Introduction**

The preliminary research showed that facial expressions have a powerful influence on the perception of leadership. The results were in agreement with other studies supporting the theory that leadership lies in the perceivers' minds (Gray & Densten, 2007; Kenney, Blascovich, & Shaver, 1994; Schyns, Felfe, & Blank, 2007). Specifically, the respondents used all accessible information, such as facial appearance, expression, context of communication, appropriateness, and authenticity of expression, to form complex prototypes. When the facial expressions in the studies matched the participants' prototypes, perception of leadership tended to be higher.

The two studies included in the preliminary research (phase 1) comprised the basis for the main research (phase 2). The current chapter introduces phase 2 (studies 3, 4, and 5) of the research. The three studies presented here are based on the research model introduced in the literature review (see chapter II), namely the prototype leadership filter. To briefly summarise, on the basis of Hall and Lord's (1995) information-processing model, Implicit Leadership Theories (ILTs) act as expectations which construct an evaluative filter for categorising people into leaders and non-leaders. In accordance with Calder (1977), if facial expressions create trait impressions that meet these expectations (prototype leadership filter), then that person is categorised as a leader. The studies presented in the current chapter aim to contribute further to our knowledge about the influence of facial expressions on the perception of leadership.

As mentioned in the previous chapter, the majority of prior research on leaders' emotional displays did not employ detailed facial action coding techniques (e.g. Bucy & Bradley, 2004; Lewis, 2000; Damen, Van Knippenberg, & Van Knippenberg, 2008). The preliminary research of this thesis showed that altering simple facial actions (e.g. eyebrow

movements) can result in different leadership perceptions. Additionally, other research has shown that subtle differences between facial expressions can result in different perceptions (Surakka & Hietanen, 1998). Consequently, accurately describing facial expressions can contribute to increased research credibility.

For the reasons described in the previous paragraph, the current research uses detailed facial action coding techniques to address such credibility issues. The aim is to integrate sophisticated nonverbal decoding methods (Ekman, Friesen, & Hager, 2002) into the area of leadership perception, to investigate the impact of facial expressions on leadership perception in more depth. In this research, I aim to explore which specific facial expressions influence perceptions of leadership and how these facial expressions affect the perception of a leader's traits.

The central difference of the main research from the preliminary research is the use of an improved design, larger sample size and more manipulations. The previous chapter presented phase 1 (studies 1 and 2) which was the preparatory part of the research. In Study 1, perceptions of leadership were investigated with simple facial actions in minimum context activation. In Study 2, a similar method was used with context activation integrating facial expressions in scenarios. Even though the design was helpful in investigating facial expressions influences in leadership perceptions, a basic limitation of the preliminary research was the factor analysis of the ILTs. Specifically, because of the sample being smaller than 200 people (for sample size considerations see Fabrigar, Wegener, MacCallum, & Strahan, 1999), the two preliminary studies allowed for only an indicative exploratory factor analysis. Another issue was that important concepts for the perception of leadership via facial expression, such as the ILTs-facial expressions match assumption (see prototype leadership filter above) and gender differences (Den Hartog & Koopman, 2005; Epitropaki & Martin, 2004; Hall, 2006; van Beek & Dubas, 2008), were not tested statistically.



Furthermore, in study 2, the small sample sizes prevented statistical testing of all related aspects of variation comparisons. These limitations were directly addressed in phase 2 (studies 3, 4, and 5), the main part of the research. Specifically, the feedback from the preliminary research was used to refine and use the instruments in a total of 807 Cypriot bank employees.

In the following, I outline three studies with different research designs in the same population. Participants' implicit leadership theories are assessed at the beginning. Next, the three designs with the facial expression manipulations are presented separately. After that, data from these studies is used to examine (A) gender differences, and (B) ILT's match with perceptions from facial expressions. Finally, the general discussion follows.

## **3.2 Main research**

Some information and comments describing the general approach of the three main studies are presented at the beginning, followed by a separate description and discussion of each study.

### 3.2.1 Setting the context: Organisation information

The main research took place in a large scale Cypriot financial organisation. Founded in 1901, it is the second biggest Cypriot banking group with branches all over Cyprus and other countries (e.g. Greece, UK, Ukraine). Its headquarters are in Nicosia, Cyprus and the total number of employees working in Cyprus is 2,598. After negotiations, the organisation generously allowed the researcher to administer structured questionnaires to an employee sample (N=807).

### 3.2.2 Studies 3, 4, and 5: An improved design

After the preliminary research (studies 1 and 2), a similar but improved design was applied. The significant increase of the sample size aided evaluating aspects of the ILTs instrument, and assessing the facial expression manipulations, with more statistical confidence than the preliminary studies would allow. The basic structure of the questionnaire was similar to studies 1 and 2: participants' ILTs were assessed in part A of the questionnaire, and facial expression manipulations were evaluated in part B.

For all the studies included in the main research, the ILTs instrument as described in the preliminary studies was modified and employed in part A, to evaluate the participants' ILTs, and in part B as a measure to evaluate the respective leader-actor's facial expressions.

### 3.2.3 Assessing participants Implicit Leadership Theories (ILTs)

The questionnaire tool used in phase 1 was refined to assess participants' implicit leadership theories (ILTs). The feedback from the preliminary studies helped to improve the ILTs instrument by reducing the number of the items. These changes reduced the cognitive load of the questionnaire, since 49-items rated in 11-point scales were considered a risk for the questionnaire's validity (too demanding for the participants). Therefore, after the improvements, a final version of the ILTs list was comprised, and used in the three final studies that made up the main part of the research. The final version of the questionnaire contained 39 items rated in 9-point scales (see appendix G for ILTs instrument modification).

### 3.2.4 Assessing facial expressions

As in phase 1, participants' inferences of facial expression were evaluated by reusing the ILTs list (judgement-based approach). Additionally, the facial muscle movement and

intensity in the manipulations was assessed through the use of the FACS instrument (sign-based approach).

### 3.2.5 Indicators of leader-likeness

In the current thesis, two measurements were considered as indicators of variations' leader-likeness: (a) the first impression score (FI: the overall leadership score indicated for the actor in each variation before they evaluate in the leader traits), and (b) participants "yes" or "no" responses whether or not they would consider the actor as a leader.

### 3.2.6 Ethics

Prior to conducting this phase of the research, approval was obtained from the Portsmouth Business School Ethics Committee. Participants were given clear directions, and assured that no deception or violation of any rights was involved in the study. Informed consent was obtained before any data were collected. Moreover, the data were kept confidentially. Confidentiality and anonymity implied that the thesis follows the code of data protection, and that information revealing evidence about participants' identity would be deleted. Furthermore, the nature of the answers to the questions asked cannot reveal personal identities as they reveal attitudes and not character specific or personal information.

There was also the issue of the use of visual content (images and videos) because a different, more personal quality of data was used. The controlled facial expression images and videos were used only after obtaining written consent. Additionally, the actors were assured that the pictures and videos would be controlled by the researcher and used only for the purposes of the study.

### *Studies 3, 4, and 5: Implicit Leadership Theories (ILTs)*

#### **3.3 Method**

Participants' implicit leadership theories (ILTs) for the three following studies (N=807), were assessed in part "A" of the questionnaire, using the ILTs list. However, after getting the feedback from both preliminary studies, the list was modified (39 items). The final changes came after considering the results of the previous studies 1 and 2. These changes concerned excluding, adding or changing items by using the feedback from the early studies (see appendix G).

The 39 items were scored on 9-point scales. In order to activate common leadership prototypes, before completing the ILTs list, the participants read the following statement "In the current questionnaire, the word leader, will refer to a person in a high organisational position who is successful in leading groups of people". Also, the question "which of the personality traits are characteristic of a successful leader?" was asked before the participants had to complete a list with characteristics such as "dynamic", "confident", "pushy..." with boxes ranging from 1-9 with 1 = "not at all characteristic" and 9 = "extremely characteristic".

##### 3.3.1 Participants and sampling: Studies 3, 4 and 5

The total number of participants in all three studies was a convenience sample of 807 Cypriot bank employees. Of those, 39.7% were male and 60.3% were female. Their age groups were: 20-25 (5.6%), 26-30 (15.4%), 31-35 (22.4%), 36-40 (24.5%), 41-45 (14.5%), 46-50 (8.7%), 51-55 (5.5%), and 56-60 (3.4%).

### **3.4 Preliminary analysis: Factor analysis results**

#### 3.4.1 Implicit leadership theories (ILTs): Data reduction

As mentioned earlier, to obtain participants' ILTs in phase 2 (studies 3, 4 and 5), a 39-item measure was employed, as a refinement product, following feedback from the preliminary research. Using the statistical package SPSS, the data for the 39 leader-related traits were subjected to a Principal Components Analysis (PCA) with varimax rotation. The total sample size, considering the number of items, was satisfactory (N=807; sample-item ratio > 20:1) (Jolliffe, 1989; Fabrigar, Wegener, MacCallum, & Strahan, 1999).

Three items were dropped in the PCA results because of either low communalities or because they were loading on more than one factor. Item "credible" had a low communality (0.308) which was problematic for the statistical significance of the model. Similarly, the other two traits "competent" and "charismatic"<sup>4</sup> also had low communalities (0.361; 0.336), and additionally they loaded in more than one factor. The best structure to emerge from the PCA was an 8-factor solution. A summary of the statistical procedure that took place for defining the factor solution is provided.

#### 3.4.2 Making sense of the participants' ratings: Statistical support for an 8-factor solution

The Kaiser-Meyer-Olkin (KMO) statistic is a test to evaluate the factorability of the selected groups of items. The Kaiser-Meyer-Olkin statistic of the 8-factor model as extracted from the PCA is KMO=0.860 (values above .80 are considered meritorious, Norusis, 1993), an overall good index meaning that the items are statistically close to measuring the factors proposed.

The table below shows the results of the PCA using varimax with Kaiser Normalization rotation methods.

---

<sup>4</sup> On a special note, charisma is receiving a lot of attention in leadership studies (e.g. Conger, 1999). Consequently, dropping the item "charismatic" from the list is justified in the last chapter in the limitations section.

Table 3.1: Factor loadings for Principal Components Analysis of the 36 items in an 8-factor solution using varimax with Kaiser Normalization rotation methods.

#	Statements/Items	Factors								h <sup>2</sup>
		I	II	III	IV	V	VI	VII	VIII	
1	Conceited	<b>0.88</b>								0.80
2	Selfish	<b>0.84</b>								0.74
3	Manipulative	<b>0.79</b>								0.68
4	Loud	<b>0.79</b>								0.65
5	Uncertain	<b>0.65</b>								0.58
6	Pushy	<b>0.59</b>								0.58
7	Domineering	<b>0.59</b>			0.35					0.56
8	Stressed	<b>0.57</b>								0.50
9	Dominant	<b>0.50</b>		0.32						0.57
10	Compassionate		<b>0.83</b>							0.70
11	Sensitive		<b>0.77</b>							0.68
12	Helpful		<b>0.71</b>							0.59
13	Forgiving		<b>0.70</b>							0.57
14	Sincere		<b>0.70</b>							0.56
15	Understanding		<b>0.69</b>							0.57
16	Warm		<b>0.63</b>		0.32					0.57
17	Confident			<b>0.77</b>						0.66
18	Determined			<b>0.74</b>						0.60
19	Dynamic			<b>0.64</b>						0.56
20	Energetic			<b>0.55</b>	0.35					0.58
21	Intellectual				<b>0.72</b>					0.66
22	Wise				<b>0.66</b>					0.58
23	Intense				<b>0.64</b>					0.55
24	Strong				<b>0.59</b>					0.50
25	Clever					<b>0.82</b>				0.79

26	Intelligent					<b>0.77</b>		0.66	
27	Knowledgeable					<b>0.66</b>		0.59	
28	Educated		0.31			<b>0.50</b>		0.43	
29	Male					<b>0.86</b>		0.79	
30	Masculinity					<b>0.86</b>		0.79	
31	Attractive					<b>0.53</b>	0.37	0.51	
32	Motivated					<b>0.72</b>		0.61	
33	Dedicated		0.35			<b>0.70</b>		0.65	
34	Hardworking		0.33			<b>0.59</b>		0.58	
35	Likeable						<b>0.76</b>	0.63	
36	Smiling						<b>0.68</b>	0.57	
	Eigenvalues	4.668	3.8998	2.8112	2.6594	2.5761	2.0337	1.945	1.6217
	Percentage of variance	12.97	10.833	7.8088	7.3872	7.1557	5.6491	5.4029	4.5048
	Cumulative percentage of variance	12.97	23.798	31.607	38.994	46.15	51.799	57.202	61.707

*Note.* Factor loadings > .50 are in boldface.  $h^2$  = communalities

The current factors are up to standard since they collectively explain more than 60% of the total variance. From the table above, it appears that the data are organised in eight distinct factors, with the communalities of the items not dropping below 0.43. After the principal components analysis with varimax rotation applied, another test was employed to check the internal consistencies (reliability) of the items within each factor. Cronbach's  $\alpha$  (alpha) was used as the statistical test to measure reliability of the items included in each factor (see Cronbach, 1951).

Table 3.2 below shows Cronbach's  $\alpha$  (alpha) coefficients along with the means and standard deviations of the eight factors.

Table 3.2: Means, Standard Deviations, and Cronbach's Alpha coefficients of the eight Factors

<b>Factors</b>	<b>Mean</b>	<b>SD</b>	<b>alpha</b>
Factor I: Tyranny	2.55	1.21	0.86
Factor II: Sensitivity	6.89	1.11	0.85
Factor III: Dynamism	8.24	0.71	0.77
Factor IV: Potency	6.27	1.44	0.73
Factor V: Intelligence	8.18	0.82	0.76
Factor VI: Masculinity	3.57	1.98	0.75
Factor VII: Dedication	8.03	0.96	0.71
Factor VIII: Likeability	7.34	1.28	0.62

Examining Cronbach's Alpha first, the reliabilities were overall satisfactory. Considering 0.7 as the threshold (Santos, 1999), "tyranny" and "sensitivity" were relatively high in reliability (>0.8) and "dynamism", "potency", "intelligence", "masculinity" and "dedication" were acceptable (>0.7). "Likeability" was 0.62 but a reason for that is that the factor included only two statements which prevent reliability from reaching high scores (see Cronbach, 1990).

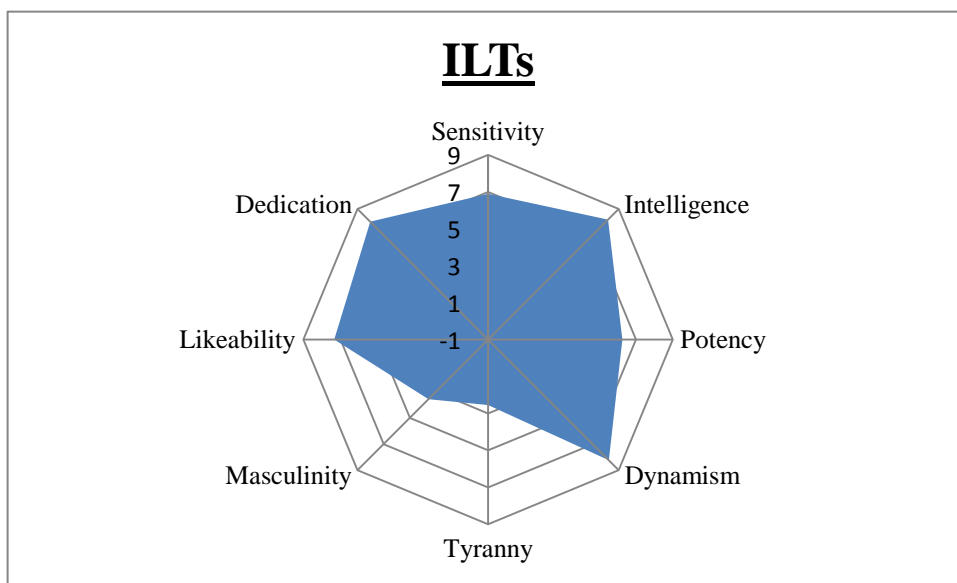
It is essential to mention that a 2-factor solution was also tested (see appendix H). That analysis showed that the eight factors examined earlier in this section were collapsing into two broader factors. Specifically, the items which loaded on the factors of masculinity and tyranny as described in Table 3.2 were separated from the items included in the factors of dynamism, intelligence, sensitivity, dedication, potency and likeability. The only item that showed a loading on both of the factor was the item "intense". The latter surprising because "intense" is a trait which can be considered as both positive and negative. This wider



grouping of factors in a bipolar is in line with previous studies that separated their factors into prototypic and anti-prototypic (e.g., Offerman, Kennedy, & Wirtz, 1994).

As in the preliminary studies, the means of the ILTs factors are illustrated in radar-graphs to facilitate comparisons. Figure 3.1 represents the means of the eight factors that comprised participants' ILTs.

Figure 3.1: Radar-graph, representations of the eight factors comprising participants' ILTs



From the means of the ILTs factors illustrated in the radar-graph (Figure 3.1) it appears that participants' ILTs rely on dynamism, intelligence and dedication followed by likeability, sensitivity and potency. Masculinity and tyranny were not considered to be characteristic leadership qualities.

### **Study 3: Integrating Asch's (1946) impression formation tests**

#### **3.5 Order effects and trait centrality**

As mentioned in chapter II, ILTs as well as facial expressions are related to the perception of leaders' traits (Aguinis, Simonsen, & Pierce, 1998; Krumhuber, Manstead, & Kappas, 2006; Lundqvist, 2003). Traits are considered to be a crucial concept in the current thesis as they

link the two areas: leadership and facial expression. Asch (1946) used ground-breaking techniques with personality traits in his attempts to study impression formation. Briefly summarising the design, Asch (1946) gave lists of trait-words to participants and asked them to describe their impressions of a person's character possessing these traits. One of his manipulations with these trait-lists was changing a specific word from the trait-list and observing the effect on participants' impressions. Specifically, he gave the list "intelligent, skilful, industrious, warm, determined, practical, cautious" to one group of participants and the list "intelligent, skilful, industrious, cold, determined, practical, cautious" to another group of participants. The impact on impressions was pronounced, as the "warm" person was seen as more sincere, altruistic, humane, popular, sociable generous, happy, wise, humorous, and good-natured than the "cold" one. Trying the same with the lists "intelligent, skilful, industrious, polite, determined, practical, cautious" and "intelligent, skilful, industrious, blunt, determined, practical, cautious" did not yield significant results. Asch (1946) also used trait-lists to investigate order effects. In other words, he changed the order of the trait-words and examined the impact on impressions. Particularly, he gave to one group of respondents the list "intelligent, industrious, impulsive, critical, sullen, envious" and to another group the list "envious, sullen, critical, impulsive, industrious, intelligent". For the former list, the participants perceived a happy, able person with certain shortcomings (good qualities dominated) while for the latter list they perceived a person having problems and difficulties that affect his social skills (bad qualities dominated).

Asch's (1946) work was important, as he discovered phenomena such as centrality and peripherality of traits. He explained the effect of the traits "warm" and "cold" on participants impressions, with the concept of a "central" trait. Specifically, the traits "warm" and "cold" (central traits) seem to spread their positive or negative quality respectively to the final impression, thus having a central perceptual role. In contrast, when the the same list of

traits was tested with the peripheral traits “polite-blunt”, no such differentiation occurred. Finally, the last two lists show the influence of order effects when: (a) good traits are presented first and (b) bad traits are presented first; again, each gives a different impression. This is called the primacy effect:

“It appears therefore that the subjects are building up an impression by integrating the new traits with the old, by finding a relationship between them. Each trait is understood in terms of the others, with some traits, having the strongest influence in the overall impression” (Hinton, 1993, p. 85).

Based on Asch’s (1946) findings, in combination with the facial expression-trait inference relationship highlighted in the previous chapter (see section 2.2.2), I expect that order effects will also appear in sequences of facial expression.

Hypothesis 7: Changing the order of the sequence of specific facial expressions will yield different perceptions of a leader.

In the same vein, similarly to Asch’s (1946) centrality of traits (warm-cold effect), I expect that from a sequence of facial expressions, changing one facial expression to another indicating a different emotional state, will alter the perceptions of an observed leader. In other words, in the same way central traits spread their positive or negative quality respectively to the final impression, I expect a similar effect for sequences of facial expressions. Hence:

Hypothesis 8: From a sequence of facial expressions, changing one facial expression to another indicating a different emotional state will alter perceptions of the observed leader.

To conclude, study 3 uses manipulations of static facial expressions sequences transferring some of Asch's (1946) trait impression formation tests to the research of leadership perception from facial expression. Specifically, I intend to borrow and test some of the manipulations Asch (1946) used in his studies with facial expressions instead of trait-words.

## **Study 3**

### **3.6 Method**

#### 3.6.1 Participants

Participants were 204 Cypriot bank employees (42.2% male and 57.8% female). Their age groups were: 20-25 (11.8%), 26-30 (20.1%), 31-35 (18.6%), 36-40 (18.1%), 41-45 (12.3%), 46-50 (6.4%), 51-55 (7.9%), and 56-60 (4.9%).

#### 3.6.2 Design and instruments

The study was conducted in two in-class sessions in the organisational facilities. A questionnaire instrument was employed in the present study (see appendix I). The questionnaire consisted of two parts ("A" and "B"): Participants were first asked to indicate, in part "A", their implicit leadership theories (ILTs). Subsequently, they were asked, in part "B", to evaluate sequences of photos depicting facial expressions, using the exact same scale that was used to assess ILTs in the first part of the questionnaire. There was also space for a brief qualitative explanation. As in the preliminary studies, this study uses already coded, basic facial actions from the Facial Action Coding System (FACS) manual, such as eyebrow raises, frowns, and smiles. The reference images used as examples of facial expressions (see FACS manual, Ekman et al., 2002) were all demonstrated by one man.

### 3.6.3 Implicit Leadership Theories (ILTs)

Participants' Implicit Leadership Theories were assessed using the 39-items discussed at the beginning of this chapter (see section 3.2.3).

### 3.6.4 Facial expression coding

The instrument used to evaluate facial action movement and intensity was the FACS (see appendix J). In part "B" of the questionnaire, sequences of pictures of facial expressions were evaluated. These were already coded for their original purpose as part of the FACS manual (Ekman, Friesen, & Hager, 2002, p. 381-433), with six pictures being used to create a sequence of emotional expressions each time. Three out of four variations had the same pictures but in a different order. The man's neutral face was used twice in the sequence. The remaining four photos showed facial expressions. One photo depicted raised and pulled together eyebrows. Another photo depicted lowered and pulled together eyebrows, and two photos depicted two smiles of different facial muscle movement and intensity. The final variation replaced the eye-brow raise and frown with an upper lid raised<sup>5</sup> expression.

### 3.6.5 Experimental design and stimulus material

As mentioned earlier, the questionnaire comprised two parts. Part "A" was the same for every questionnaire. Part "B" had four different variations, changing on the basis of Asch's (1946) trait experiments. Variation 1 (part B1) consisted of the standard six-photo sequence. That sequence was reversed in variation 2 (part B2) and changed in variation 3 (part B3). Variation 4 (part B4) kept the same sequence as variation 3 (part B3), but replaced a facial expression appearing in the middle with another facial expression indicating a different emotion. Particularly, the eyebrow raising and pulling together picture (sign of weakness, see study 1)

---

<sup>5</sup> An upper lid raiser (FACS code=AU: 5) is a facial action which widens the eye aperture. When combined with eyebrow lowering and pulling together (frown) it is used as a key behaviour, in facial expression research, for measuring emotions of anger and rage (Ekman et al., 2002).

was replaced with a picture of lowered and pulled together eyebrows using an upper lid raiser (signs of anger and rage, see Ekman et al., 2002).

The stimulus material in part “B” consisted of six static images of a man, showing the head only. A statement was used to activate the business leader prototype: “The man you will see below, Mr Ioannou, is a Branch manager in a Cypriot bank. The pictures you are going to see are extracted still frames from Mr Ioannou’s recorded interaction in a normal day at work. The frames are appearing in the same sequence as they appeared in the interactions.” Under the pictures there was space to briefly answer the question: “Could that person be a business leader? Why?” After that, the participants were asked to put their first impression rating on perceived leadership for the person seen, using a 1-9 scale. Finally, the pictures’ sequence was evaluated on leader dimensions by using the same ILTs quantitative list used in part “A”. A professional scriptwriter and philologist evaluated the natural spoken language. Additionally, a regional bank manager adjusted the brief scenario and terminology for reality.

### 3.6.6 Procedure

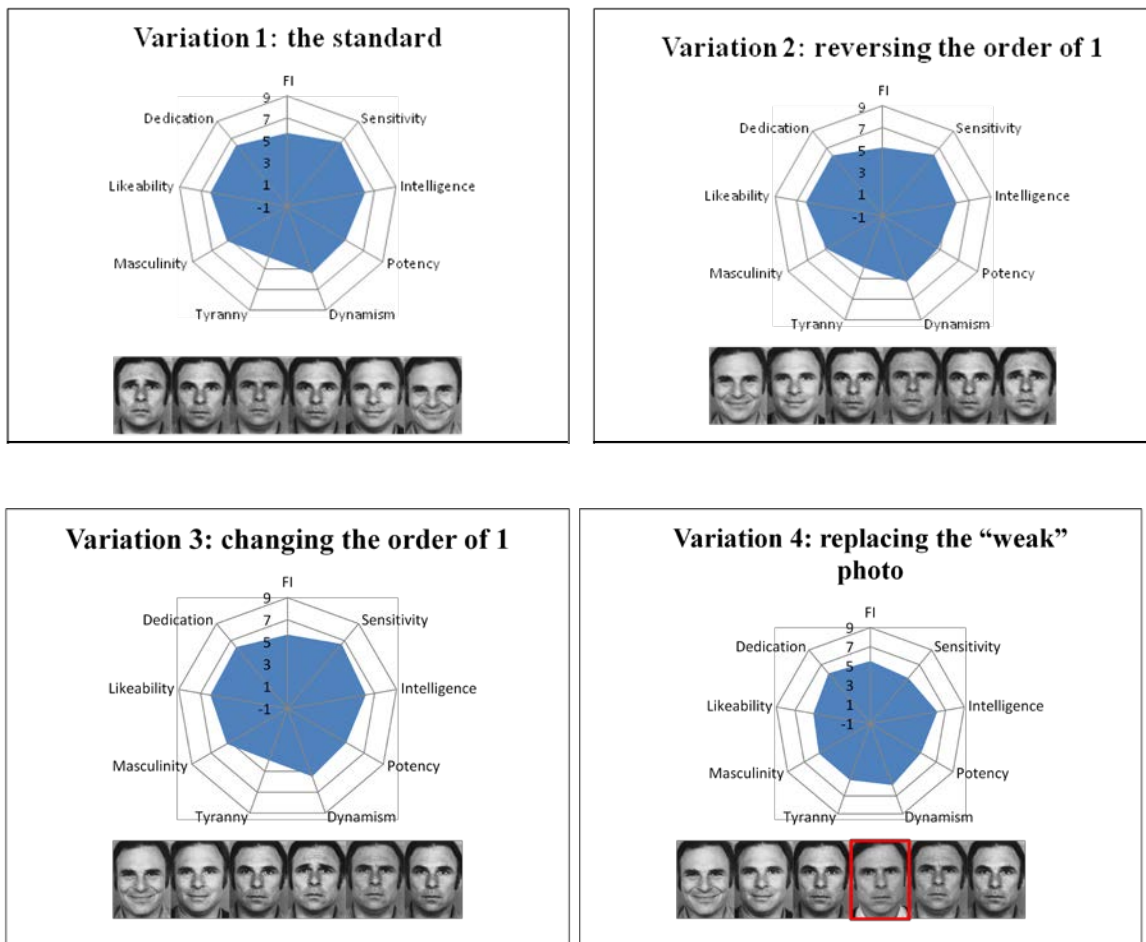
The study was conducted in two visits to the organisation’s professional training centre. The participants completed one questionnaire combination: Variation 1 (A,B1; N=44), variation 2 (A,B2; N=38), variation 3 (A,B3; N=44), variation 4 (A,B4; N=33). The sequence was: first complete the quantitative list in part A, then answer if the man in the pictures sequence could be a business leader, then assign a first impression rating, and finally evaluate him on leader-related traits using the quantitative list from part A. Forty five people stated that they did not have time to complete the full questionnaire, but they agreed to complete just part A (N=45).

### 3.7 Results

#### 3.7.1 Evaluation of the sequences with static facial expressions

Figures 3.2 (variations 1-4) represent the participants' quantitative evaluations of the leadership dimensions for each variation.

Figures 3.2 (variations 1-4): Quantitative evaluations of leadership dimensions for each variation<sup>6</sup>



As can be seen in the radar-graphs, the first three variations (examining order effects) virtually do not differ from each other. In contrast, the last variation (examining the effect of changing a single emotional facial expression) appears different from all the others. To

<sup>6</sup> Note: the photographs in this article are taken from the FACS manual (Ekman, Friesen, & Hager, 2002) and are reproduced with permission from the Paul Ekman Group.

facilitate more specific presentation of the results, statistical differences between variations were examined.

Examining order effects first, table 3.3 below shows the results of a one-way ANOVA test between the participants evaluations in leadership dimensions and the first impression score (FI) for variations 1,2 and 3.

Table 3.3: Significant differences between participants' perceptions in order effects (comparisons of variations 1,2 and 3)

<b>Dimension</b>	<b>Source</b>	<b>Degrees of freedom</b>	<b>Sum of Squares</b>	<b>Mean Squares</b>	<b>F</b>	<b>P</b>
FI	Between Groups	2	8.216	4.108	1.459	.237
	Within Groups	112	315.384	2.816		
	Total	114	323.600			
Sensitivity	Between Groups	2	2.724	1.362	.607	.547
	Within Groups	112	251.322	2.244		
	Total	114	254.046			
Intelligence	Between Groups	2	2.496	1.248	.498	.609
	Within Groups	112	280.453	2.504		
	Total	114	282.949			
Potency	Between Groups	2	4.135	2.068	.819	.443
	Within Groups	112	282.702	2.524		
	Total	114	286.837			
Dynamism	Between Groups	2	.857	.428	.092	.912
	Within Groups	112	519.437	4.638		
	Total	114	520.293			
Tyranny	Between Groups	2	.091	.045	.020	.980
	Within Groups	112	253.002	2.259		
	Total	114	253.092			
Masculinity	Between Groups	2	4.746	2.373	.720	.489
	Within Groups	112	369.115	3.296		
	Total	114	373.861			
Likeability	Between Groups	2	2.807	1.404	.397	.674
	Within Groups	112	396.441	3.540		
	Total	114	399.248			
Dedication	Between Groups	2	.034	.017	.007	.993
	Within Groups	112	266.182	2.377		
	Total	114	266.216			



It is apparent from this table that no significant differences in leadership perceptions were found between the first three variations (variation 1: the standard, variation 2: reversing the order of 1, and variation 3: changing the order of 1).

To examine the effect of changing a single emotional facial expression, statistical differences were again explored, to compare variation 4 (replacing the “weak” photo) with the remaining three variations. Table 3.4 below, shows the results of a one-way ANOVA test between the participants’ evaluations in leadership dimensions and the first impression score (FI) for the comparisons of variation 4 with the rest of the variations.

Table 3.4: Significant differences between participants’ perceptions after changing the “weak” photo (comparisons of variations 1,2,3 and 4)

Dimension	Source	Degrees of freedom	Sum of Squares	Mean Squares	F	P
FI	Between Groups	3	8.406	2.802	.977	.405
	Within Groups	155	444.361	2.867		
	Total	158	452.767			
Sensitivity	Between Groups	3	46.653	15.551	5.935	.001
	Within Groups	155	406.136	2.620		
	Total	158	452.790			
Intelligence	Between Groups	3	2.763	.921	.370	.775
	Within Groups	155	386.264	2.492		
	Total	158	389.027			
Potency	Between Groups	3	6.681	2.227	.944	.421
	Within Groups	155	365.513	2.358		
	Total	158	372.194			
Dynamism	Between Groups	3	6.798	2.266	.521	.668
	Within Groups	155	673.952	4.348		
	Total	158	680.750			
Tyranny	Between Groups	3	51.131	17.044	7.490	.000
	Within Groups	155	352.709	2.276		
	Total	158	403.839			
Masculinity	Between Groups	3	5.925	1.975	.641	.590
	Within Groups	155	477.842	3.083		
	Total	158	483.767			
Likeability	Between Groups	3	30.698	10.233	2.597	.054

	Within Groups	155	610.736	3.940		
	Total	158	641.434			
Dedication	Between Groups	3	5.163	1.721	.670	.572
	Within Groups	155	398.293	2.570		
	Total	158	403.456			

As table 3.4 shows, there are significant differences in perceived dimensions of sensitivity and tyranny. Post hoc analyses using the Scheffé post hoc criterion for significance indicated that there were statistically significant differences between variation 4 (replacing the “weak” photo) and the rest of the variations. Particularly, the photo sequence of variation 4 resulted in the participants evaluating the actor as more tyrannic (variations 1-4:  $\bar{x}_1 - \bar{x}_4 = 1.25$ ,  $p = .002$ ; variations 2-4:  $\bar{x}_2 - \bar{x}_4 = 1.25$ ,  $p = .004$ ; and variations 3-4:  $\bar{x}_3 - \bar{x}_4 = 1.31$ ,  $p = .003$ ), and less sensitive (variations 1-4:  $\bar{x}_1 - \bar{x}_4 = 1.05$ ,  $p = .029$ ; variations 2-4:  $\bar{x}_2 - \bar{x}_4 = 1.11$ ,  $p = .025$ ; and variations 3-4:  $\bar{x}_3 - \bar{x}_4 = 1.41$ ,  $p = .003$ ) than variations 1, 2 and 3. An important comparison to consider is the one of variation 3 with 4 where the order of facial expressions is exactly the same, and the two variations differ only in one facial expression. Still, the results are congruent with the rest of the variations (1 and 2).

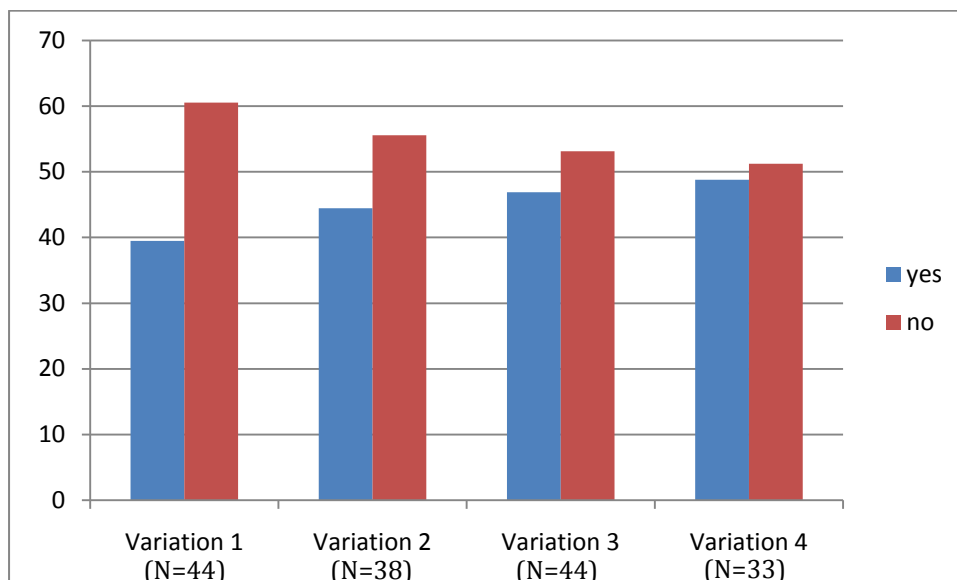
To summarise, changing a photo depicting an eyebrow raise and pulling together (signs of weakness) to another photo depicting an eyebrow lowering and pulling together with upper eye lid raiser (signs of anger), influenced participants’ perceptions regarding specific leadership dimensions. Particularly, removing the “weak” photo made the actor look more tyrannical, and less sensitive.

Even though differences occurred in some of the leader dimensions (tyranny, and sensitivity), the one-way ANOVA did not reveal statistically significant differences in the first impression scores (FI: the overall leadership score indicated for the actor in each variation before they evaluate in the leader traits) across the four different variations. FI in this study is considered as one of the indicators whether or not an actor is perceived as more

leader-like than another. These results show that the two types of leaders, namely the “tyrannical” versus the “sensitive” receive about the same first impression ratings.

Besides the first impression scores (FI), another indicator of whether or not an actor is perceived as more leader-like than another is the participants’ “yes” and “no” responses in the question of whether they would imagine the depicted actor as a leader. Figure 3.3 represents the participants’ percentages of “yes” and “no” responses regarding their acceptance of the actor as a potential leader.

Figure 3.3: Acceptance of the actor as a potential leader: “yes” and “no” percentages



The “yes” and “no” percentages illustrated in Figure 3.3 reveal that the participants’ reactions for all four variations were closely split into those who accepted the actor as a potential leader and those who did not. To be more precise, chi squares analysis revealed that there were no significant differences between the four variations ( $\chi^2_{(3,159)} = .255, p=.968$ ). This shows that the sequences of facial expressions did not cause a clear positive or negative leader-likeness consensus for any of the four variations.

Since the participants for all four variations did not form a consensus, inter-variation statistical differences were examined (see appendix K). The analysis shows that “yes”-participants “saw” a different image for the actors, compared to “no”-participants. Specifically, the t-tests revealed that there were significant differences between these two groups in almost every leader dimension (with the exception of tyranny for variation 1 and 2 and sensitivity for variation 2).

Besides the quantitative analysis, the qualitative analysis helped to examine the participants’ perceptions of leadership at a deeper level. As mentioned earlier, in the questionnaire, the participants had to answer if the actor could be their leader and why, and then describe what they imagine his character to be.

### 3.7.2 Qualitative analysis

The qualitative data were analysed following a two-step procedure, similar to Schilling’s (2006) suggestions for analysing qualitative data. First, the data were paraphrased, and then organised in category systems (basic leader prototypic and anti-prototypic traits). The paraphrased traits were counted (i.e., how many of the research subjects addressed a certain theme, see Schilling, 2006, p. 34). From the first interaction with the qualitative data, obvious differences again appeared in the two groups: those who said “yes, he could be a leader” and “no, he could not be a leader”. The descriptions from the two groups showed fundamental differences. In order to facilitate the presentation of the results, the traits were then counted and grouped into two columns. Table 3.5 shows the most used trait descriptions (sorted by frequency) from participants’ qualitative responses grouped in “yes, he could be a leader” and “no, he could not be a leader”.

Table 3.5: Most used trait descriptions (sorted by frequency) from participants' qualitative responses grouped in "yes, he could be a leader" and "no, he could not be a leader"

<b>Variation</b>	<b>Yes, he could be a leader</b>	<b>No, he could not be a leader</b>
Variation 1 (the standard)	Compassionate: 9	Uncertain: 8
	Adjustive: 8	Sensitive: 6
	Dynamic: 6	Stressed: 6
	Confident: 5	Not expressive: 5
	Smiling: 5	Mood swings: 5
Variation 2 (reversing the order of 1)		Weak: 5
	Smiling:8	Stressed:16
	Adjustive:7	Uncertain:8
	Stressed:6	Not dynamic: 6
	Dynamic:5	
Variation 3 (changing the order of 1)	Honest:5	
	Dynamic: 7	Not confident: 11
	Understanding: 7	Expressive (leaks out emotion): 7
	Smiling: 6	Mood swings: 5
	Confident: 5	
Variation 4 (replacing the "weak" photo)	Expressive: 9	Mood swings: 6
	Serious: 8	Unstable: 5
	Dynamic: 5	Domineering: 5
	Smiling: 5	Not authentic: 5
	Understanding: 5	Stressed: 5
		Uncertain: 5
		Not confident: 5

*Note.* Only item frequencies  $\geq 5$  are included in the tables.

This table helps to better interpret the quantitative results. Regarding variation 1, the participants who responded “yes” tended to describe a person who is compassionate, adjustive, dynamic, confident and smiling. The participants who responded “no” tended to describe a person who lacks confidence, is uncertain, sensitive, stressed and weak. For variation 2, the participants who responded “yes” tended to describe a person who is smiling, adjustive, dynamic and honest but also stressed. The participants who responded “no” tended to describe a person who is much stressed, uncertain and lacks dynamism. For variation 3, the participants who responded “yes” tended to describe a person who is understanding, dynamic, smiling, and confident. The participants who responded “no” tended to describe a person who lacks confidence, leaks out emotion and it is cyclothymic. Finally, regarding variation 4, the participants who responded “yes” tended to describe a person who is expressive, serious, dynamic, smiling and understanding. The participants who responded “no” tended to describe a person who is cyclothymic, unstable, domineering, fake, stressed, uncertain, and lacks confidence. From what is described above it appears that the descriptions for variation 4 are very different from the descriptions of variation 1, 2, and 3. Additionally, the descriptions for variations 1, 2, and 3 (order effects manipulation) have similarities, but also have some underlying differences; something that did not show in the quantitative analysis.

### 3.7.3 Discussion of study 3

Study 3 used manipulations of static facial expression sequences, transferring some of Asch’s (1946) trait impression formation tests to leadership perception from facial expression. In hypothesis 7, it was assumed that changing the sequence-order of specific facial expressions would result in differentiated perceptions of a leader. The results of the study’s quantitative segment did not support the above hypothesis. Changing the order in the sequences of the

static facial expressions did not yield statistically significant differences in the leadership dimensions and first impression score (FI). What is more, participants' "yes"- "no" responses to whether or not they considered the actor as a potential leader were also similar. However, the qualitative analysis provided some evidence for (at least) subtle perceptual differences in the three variations which tested the order effects. In a few words, even though quantitative data did not support order effects in leadership perception from sequences of facial expressions (H7), qualitative data did not completely reject such an assumption.

In hypothesis 8, it was assumed that changing one facial expression to another indicating a different emotional state will alter perceptions of the observed leader. Both quantitative and qualitative data supported the hypothesis (H8). The qualitative analysis and the statistical tests between variation 4 and variations 1, 2, and 3 suggested that variation 4 was perceived differently from the rest of the variations. Specifically, replacing the "weak" photo in the sequences resulted in the participants viewing a more "hostile" (increased perceived tyranny) and less "soft" (decreased perceived sensitivity) person. In other words, replacing a picture with raised and pulled together eyebrows (sign of weakness, see study 1) with a picture of lowering the eyebrows with eyelids opening (sign of anger, see Ekman et al., 2002) caused different perceptions in participants, congruent with the emotional state behind the respective facial expression. These results are important because they indicate that changing a single frame in a sequence of facial expressions might be enough to significantly alter observers' perceptions of leadership. Even though the manipulations discussed here resulted in different leader perceptions, they were similar in terms of the indicators of leader-likeness used in the current studies. To put it briefly, the participants did not favour the "hostile" leader more than the "soft" one (or the other way around) but they did perceive them differently in terms of specific ILTs dimensions.

### **3.8 Study 4: Dynamic facial expressions and leadership perceptions**

In study 4, videos of a leader/actor's facial expression were investigated in an organisational context. The aim here was to re-test hypotheses 6 and 8, in a different context, with dynamic facial expressions (videos) instead of static facial expressions (photos). The two hypotheses are re-stated below:

Hypothesis 6: Participants will evaluate positive expressions (expressions with indicators of happiness, e.g. smiling) higher in leadership perception than negative ones (expressions with indicators of anger, or sadness, e.g. eyebrow lowering and pulling together or eyebrow raising and pulling together).

Hypothesis 8: From a sequence of facial expressions, changing one facial expression to another indicating a different emotional state will alter perceptions of the observed leader.

## **Study 4**

### **3.9 Method**

#### 3.9.1 Participants

Participants were 231 Cypriot bank employees (55.1% male and 44.9% female). Their age groups were: 20-25 (1.3%), 26-30 (10%), 31-35 (17.7%), 36-40 (24.2%), 41-45 (15.6%), 46-50 (16.9%), 51-55 (7.8%), and 56-60 (6.5%).

#### 3.9.2 Design and instruments

The study was conducted in four in-class sessions in the organisational facilities. A questionnaire instrument was employed in the present study (see appendix L), and the same pattern as the earlier study was followed. The questionnaire consisted of two parts ("A" and



“B”): In Part “A”, participants were asked to indicate their implicit leadership theories (ILTs), before viewing a video of an actor/leader’s facial expressions. They were then asked to give their evaluation of the actor’s leadership impression (Part B), using the same scale that was used to assess ILTs in the first part of the questionnaire. There was also space for a brief qualitative explanation. These assessed (A) participants’ ILTs (leadership prototypes), and (B) participants perceptions of leadership from facial expression. This study, uses FACS coded, facial expressions, such as eyebrow raises, frowns, and smiles.

### 3.9.3 Implicit Leadership Theories (ILTs)

Participants’ implicit leadership theories were assessed using the 39-item instrument discussed earlier (see section 3.2.3).

### 3.9.4 Facial expression coding

Again, the instrument used to evaluate facial expressions was the FACS (Ekman, Friesen, & Hager, 2002). The videos with facial expressions of the researcher were evaluated in part “B” of the questionnaire. These were coded by two FACS certified coders for facial muscle movement and intensity. An inter-rater reliability analysis using the FACS index<sup>7</sup> was performed to determine consistency between raters.

---

<sup>7</sup> The FACS interrater index or the “agreement index” is a reliability test for FACS coding. This can be found in the FACS investigator guide (Ekman et al., 2002, p. 37). Formula: (exact number of agreement for the two coders) X2/all the scorings from both coders.

### 3.9.5 Experimental design and stimulus material

#### *3.9.5.1 Video construction*

As mentioned earlier, in part “B” respondents were asked to evaluate the facial expressions viewed in the video. The two main methodological considerations regarding the video’s construction were the facial actions used and the acting abilities of the actor. The researcher has a significant acting background and education and is also a FACS certified coder. For these reasons the researcher was the actor in the videos.

The scenarios depicted a long distance video-call between the head of an HRM research group (actor) and a member of that group. The video was a recording of a role-play video conversation, as described in the questionnaires (see appendix L). The Stanislavski acting technique was applied for achieving deep acting (see Gordon, 1987; Stanislavski, 1965). The main idea in deep acting is to experience rather than simulate an emotion, so that the face complies with the most natural way possible in the context. The scenario represented a computer to computer video conversation, so a laptop camera was installed. The video-clips were created in an actual bank manager’s office. A computer voice recorder was used to simulate a conversation between the actor (the head of an HRM research group) and a member of the research group video-calling to ask for help with a problem. There were two reasons for recording the supposed member’s voice: first, so the timing of the reactions would not be random, as the actor would respond to the other man’s questions and statements. The second reason was that the actor could deep-act by putting himself in a relatively realistic position.

The video consisted of two segments which were merged by using windows movie maker. The first segment (the basic) was the same for all three variations of the video-clips and contained the first three facial expressions in the conversation. It began with the actor showing a neutral face. Then the actor smiled as he greeted the person he was talking with.

After that, he frowned as he was listening to the problem the HRM team was experiencing. In the second segment, the actor (head of HRM group) gave a solution to the problem. That segment was different for each variation. Variation 1 (part B1 of questionnaire) used a display with indicators of happiness, variation 2 (part B2) used a display with indicators of nervousness, and variation 3 (part B3) used a display with indicators of anger (for FACS coding see appendix M).

A difficulty that was encountered with the video editing was in continuity of filming. When the actor performed the manipulation conditions, after interrupting the speech, the visible posture could not be the same. In other words, the complexity of the posture in terms of three dimensional angles made it impossible to achieve 100% for perfect editing. For that reason, the strategy of continuously recording all the video material was employed. The task was not impossible because the video segments were short. After extensive rehearsals all the manipulations were video recorded in one take, less than 60 seconds of acting, which helped maintain communicational “momentum” and continuity as far as possible for all conditions.

The scenarios were constructed after working with a focus group in one of the organisation’s weekly HRM group meetings. The general aim was for the scenarios to represent reality as much as possible. These scenarios aim to further investigate facial expression manipulations relevant within the positive-negative bipolar as set in hypothesis 6. Therefore, the facial expressions employed were not random. The basic part of the scenario (see above) consisted of facial expressions which were considered fitting with the organisational display rules as indicated from the focus group. For the manipulation part (see above) positive displays were expressed by using a medium intensity non-authentic smile (smiling). Negative displays were expressed by using eye closure, nostril flare, lips tightening, dimpler, and slight head tilt (angry) or eyebrow raise and pull together with cheek raise and eyelids tightening (nervous). Another reason for the use of the specific facial

expressions is that they contain facial actions indicating relatively recognisable emotional states (Ekman et al., 2002; Van Kleef, Homan, Beersma, van Knippenberg, van Knippenberg, & Damen, 2009).

The videos were presented to the participants silently to keep the complexity of the project to manageable levels. For example, had voice been included, then voice analysis would have been necessary for a number of factors such as loudness, articulation, fluency, pitch height, pitch modulation, pitch range tempo, loudness (Buller & Aune, 1988). These would have been very difficult to control for all three videos. Even though the participants watched silent films, as mentioned before, the takes included real dialogue conversations constructed from a Cypriot financial organisation's HRM group of 16 people (see appendix N for the dialogue).

A small paragraph was used to activate the business leader prototype: "The man you are going to see in this section is Head of a research team of the HRM department in one of the banks in Cyprus and his name is Mr Ioannou. Mr Ioannou is currently abroad on business. His research team is trying to resolve a problem that has arisen in his absence. They decide to call Mr Ioannou in a video-call to help with the problem. You are now going to see still photo extracts from the specific video-call, without sound, seeing only Mr Ioannou. The video-call starts with Mr Ioannou saying 'hi' to the HRM team. He then listens to the problem and he gives a solution." The stimulus material consisted of a 14 second coloured video-clip of a male actor showing the head and shoulders only. After the video observation, there was space to briefly answer to the question: "Could that person be a business leader? Why?" Participants were also asked to put their first impression rating in a 1-9 scale on perceived leadership for the person seen, and to describe how they perceived the actor's character. Finally, the videos were evaluated on leader dimensions by using the same ILT quantitative

list used in part “A”. A professional scriptwriter and philologist evaluated the natural spoken language and a regional bank manager the reality of the brief scenario and terminology.

### 3.9.6 Procedure

The study was conducted by research assistants during four visits to the organisation’s professional training centre. All participants completed one questionnaire combination: Variation 1 (A,B1; N=63), Variation 2 (A,B2; N=58), Variation 3 (A,B3; N=66). The exact sequence was: first complete the qualitative ILT open ended question, then the quantitative list in part A. For part B, they watched a single viewing of the 14 second video, on individual computers, in full screen mode. After that, they answered if the man they saw could be a leader, and they gave a first impression rating. They then evaluated him on leader related traits using the quantitative list from part A.

A separate group of 44 people were in a classroom where they had no means of observing the video. However, they agreed to complete just part A, which was a significant contribution to the statistical weight of the ILTs investigation.

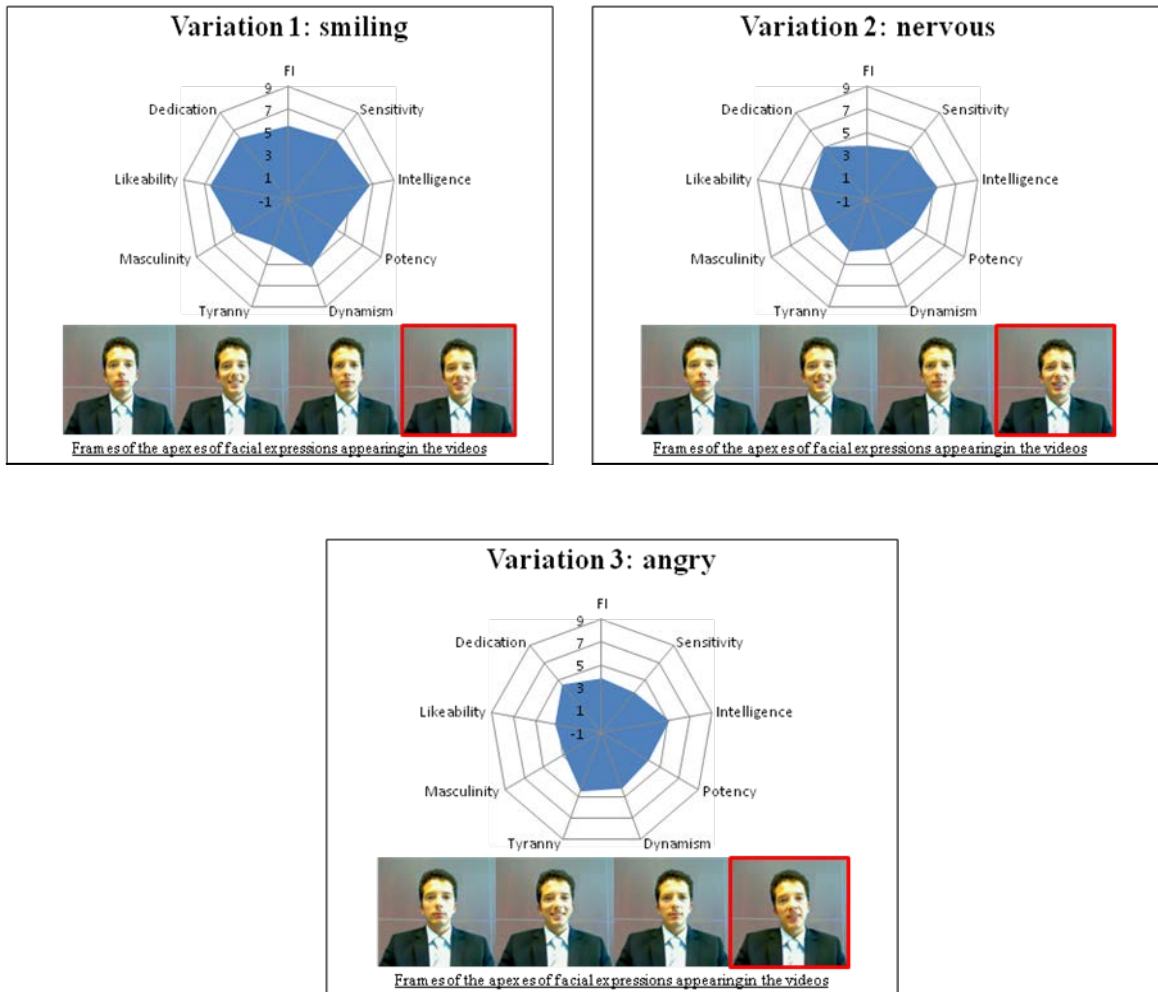
### **3.10 Results**

As mentioned in the previous chapter, for the last two studies the facial expression material was not already coded. For that reason, the facial expressions were coded for facial muscle movement and intensity by two FACS certified coders. The agreement index for exact facial muscle movement and intensity was found to be 0.86, a very satisfactory score (appendix O). The facial expression manipulation segment of the video contained sequences of facial actions involved in specific emotional states. The sequences were labelled as follows: (a) variation 1: smiling; (b) variation 2: nervous; (c) variation 3: angry.

### 3.10. 1 Evaluation of the videos (dynamic facial expressions)

Figures 3.4 (variations 1-3) represent the participants' quantitative evaluations of the videos in the leader dimensions<sup>8</sup>.

Figures 3.4 (variations 1-3): Evaluations of facial expressions for the videos



As can be seen from the three radar-graphs, the smiling variation was evaluated more favourably than the other two (nervous and angry). Table 3.6 below shows the results of a one-way ANOVA test between participants' evaluations in leadership dimensions, and the first impression score (FI) for all sequences: 1 (smiling), 2 (nervous) and 3 (angry).

<sup>8</sup> Instead of the entire video-clips, the graphs illustrate the apexes of the four main facial expressions events' appearing in the videos. The first three facial expression events (the basic part) are identical for all three variations, while the last changes for each variation.

Table 3.6: Significant differences between participants' perceptions of the three variations (comparisons of variations 1,2,3)

<b>Dimension</b>	<b>Source</b>	<b>Degrees of freedom</b>	<b>Sum of Squares</b>	<b>Mean Squares</b>	<b>F</b>	<b>P</b>
FI	Between Groups	2	142.182	71.091	21.855	.000
	Within Groups	184	598.534	3.253		
	Total	186	740.717			
Sensitivity	Between Groups	2	186.548	93.274	32.624	.000
	Within Groups	184	526.063	2.859		
	Total	186	712.610			
Intelligence	Between Groups	2	100.125	50.063	17.281	.000
	Within Groups	184	533.031	2.897		
	Total	186	633.156			
Potency	Between Groups	2	6.206	3.103	1.255	.287
	Within Groups	184	454.944	2.473		
	Total	186	461.150			
Dynamism	Between Groups	2	94.866	47.433	9.993	.000
	Within Groups	184	873.387	4.747		
	Total	186	968.253			
Tyranny	Between Groups	2	49.339	24.670	10.014	.000
	Within Groups	184	453.299	2.464		
	Total	186	502.638			
Masculinity	Between Groups	2	109.317	54.658	15.000	.000
	Within Groups	184	670.477	3.644		
	Total	186	779.794			
Likeability	Between Groups	2	343.243	171.621	43.871	.000
	Within Groups	184	719.797	3.912		
	Total	186	1063.040			
Dedication	Between Groups	2	94.132	47.066	12.090	.000
	Within Groups	184	716.299	3.893		
	Total	186	810.432			

As table 3.6 shows, there are significant differences in all perceived dimensions but potency. Post hoc analyses using the Scheffé post hoc criterion for significance indicated that variation 1 (smiling) was perceived more favourably than variations 2 (nervous) and 3 (angry) in the majority of the leader dimensions. To be more specific, the leader/actor in the smiling video extracted a higher FI score (variations 1-2:  $\bar{x}_1 - \bar{x}_2 = 1.84$ ,  $p = .001$ ; variations

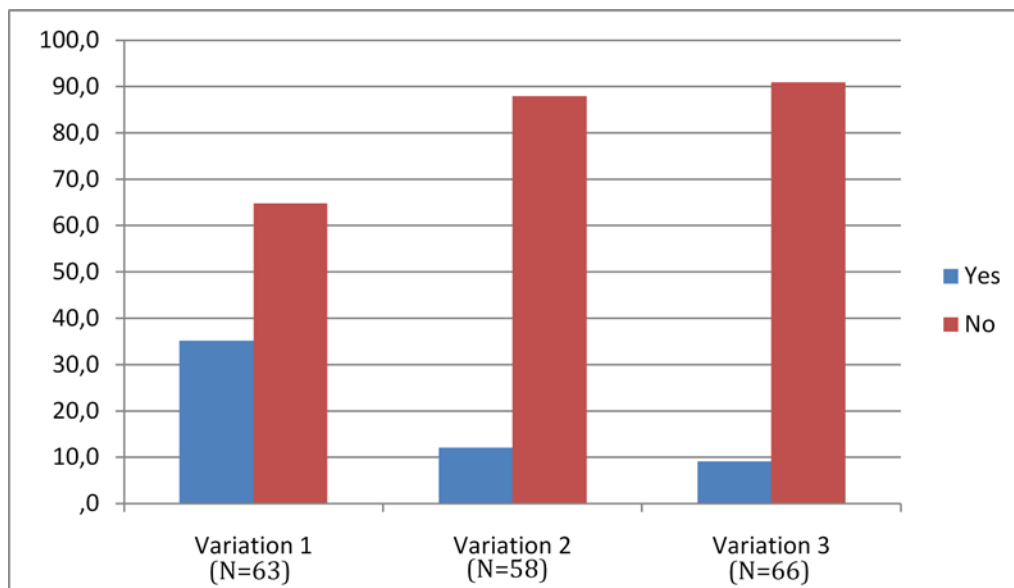
1-3:  $\bar{x}_1 - \bar{x}_3 = 1.85$ ,  $p=.001$ ) and was perceived as more sensitive (variations 1-2:  $\bar{x}_1 - \bar{x}_2 = 1.35$ ,  $p= .001$ ; variations 1-3:  $\bar{x}_1 - \bar{x}_3 = 2.40$ ,  $p=.001$ ), intelligent (variations 1-2:  $\bar{x}_1 - \bar{x}_2 = 1.42$ ,  $p= .001$ ; variations 1-3:  $\bar{x}_1 - \bar{x}_3 = 1.64$ ,  $p=.000$ ), dynamic (variations 1-2:  $\bar{x}_1 - \bar{x}_2 = 1.74$ ,  $p= .000$ ; variations 1-3:  $\bar{x}_1 - \bar{x}_3 = 1.12085$ ,  $p=.015$ ), masculine (variations 1-2:  $\bar{x}_1 - \bar{x}_2 = 1.32$ ,  $p= .001$ ; variations 1-3:  $\bar{x}_1 - \bar{x}_3 = 1.79$ ,  $p=.000$ ), dedicated (variations 1-2:  $\bar{x}_1 - \bar{x}_2 = 1.1$ ,  $p= .009$ ; variations 1-3:  $\bar{x}_1 - \bar{x}_3 = 1.69$ ,  $p=.000$ ), and likeable (variations 1-2:  $\bar{x}_1 - \bar{x}_2 = 2.20$ ,  $p= .001$ ; variations 1-3:  $\bar{x}_1 - \bar{x}_3 = 3.20$ ,  $p=.000$ ), than the two other variations. He was also perceived as less tyrannical (variations 1-3:  $\bar{x}_1 - \bar{x}_3 = 1.2$ ,  $p=.001$ ) than variation 3 (angry). Few differences were revealed between variations 2 (nervous) and 3 (angry). Specifically, they differed in perceived sensitivity (variations 2-3:  $\bar{x}_2 - \bar{x}_3 = 1.05$ ,  $p= .003$ ), and likeability (variations 2-3:  $\bar{x}_2 - \bar{x}_3 = .99$ ,  $p= .021$ ). The actor in the nervous condition was perceived more sensitive and likeable than in the angry condition.

As mentioned in earlier sections, the first impression scores (FI: the overall leadership score attributed to the actor in each variation before evaluation of leadership traits) is considered as one of the indicators of perceiving one actor as more leader-like than another. The FI score was significantly higher for variation 1 (smiling). The FI scores did not differ between nervous and angry.

Next, the “yes” and “no” responses, whether or not the depicted actor could be a leader, are examined (leader-likeness indicator). Figure 3.5 represents the participants’ “yes” and “no” responses in percentages regarding their acceptance of the actor as a potential leader.



Figure 3.5: Acceptance of the actor as a potential leader: “yes” and “no” percentages



The “yes” and “no” percentages illustrated in Figure 3.5 reveal a relatively negative consensus for variation 2 (nervous) and variation 3 (angry). Chi squares analysis revealed significant differences between variations 1 and 2 ( $\chi^2_{(1,121)} = 17.648, p < .001$ ), and 1 with 3 ( $\chi^2_{(1,129)} = 23.434, p < .001$ ). The analysis did not show any significant differences between variations 2 and 3 ( $\chi^2_{(1,124)} = 0.061, p = .805$ ). Clearly, the nervous and angry manipulations produced an impression that prevented the participants from perceiving the actor as a potential leader. In contrast, the “yes” and “no” percentages regarding variation 1 (smiling), reveal a better ratio. In other words, participants’ reactions in variation 1 were split between those who accepted the actor as a potential leader and those who did not, rather than, as in variations 2 and 3, clearly indicating a preference. Comparing the three variations, it seems that the “smiling” was perceived as more leader-like than the other two.

Since the “yes” and “no” participants for variation 1 (smiling) did not form a positive or negative consensus respectively, inter-variation statistical differences were examined (see appendix P). The analysis revealed significant differences in all leader dimensions. In other words, participants who accepted the actor in the smiling variation as a potential leader gave a higher FI score and saw a more dynamic, competent, intelligent, potent, likeable, sensitive,

masculine and less tyrannical person than participants who did not accept the actor as a leader.

### 3.10.2 Qualitative analysis of participants’ reactions to the facial expressions

Following the same pattern as study 3, a qualitative analysis was employed to further examine the participants’ perceptions of leadership. Table 3.7 below, shows the most used trait descriptions (sorted by frequency) from participants’ qualitative responses grouped in “yes, he could be a leader” and “no, he could not be a leader”.

Table 3.7: Most used trait descriptions (sorted by frequency) from participants’ qualitative responses grouped in “yes, he could be a leader” and “no, he could not be a leader”

<b>Variation</b>	<b>Yes, he could be a leader</b>	<b>No, he could not be a leader</b>
	Good listener: 11	Stressed: 14
	Pleasant: 10	Not confident: 13
	Smiling: 9	Uncertain: 9
	Confident: 8	Not authentic: 8
	Determined: 8	Not trustworthy: 8
Variation 1	Helpful: 7	Not dynamic: 7
(smiling)	Understanding: 7	Knowledgeable: 7
	Not stressed: 6	Scared: 6
	Intelligent: 5	Smiling: 6
	Knowledgeable: 5	Not Serious: 5
	Calm: 5	Not inspiring: 5
	Gives solutions: 5	
Variation 2	0	Stressed: 21

---

(nervous)

Not confident: 19

Uncertain: 19

Not dynamic: 16

Not determined: 11

Too young: 10

Not inspiring: 6

Inexperienced: 6

Does not have leader  
abilities: 5

Scared: 5

Selfish: 5

Sensitive: 5

Not trustworthy: 5

0

Selfish: 14

Not confident: 11

Not dynamic: 14

Not determined: 12

Uncertain: 12

Arrogant: 9

Indifferent, does not care:  
9

Aggressive : 8

Variation 3

Domineering: 7

(angry)

Ironic: 7

Pushy: 7

Not energetic: 6

Not authentic: 6

Stressed: 6

Inexperienced: 5

---

---

Not trustworthy: 5

Does not have leader  
abilities: 5

Not convincing: 5

---

*Note.* Only item frequencies  $\geq 5$  are included in the tables.

The table above helps to interpret the quantitative results. In variation 1 (smiling), participants who responded “yes” tended to describe a person who is a good listener, pleasant, smiling, confident, determined, helpful, understanding, stressed, intelligent, knowledgeable, calm and who gives solutions. Participants who responded “no” tended to describe a person who is stressed, not confident, uncertain, not authentic, untrustworthy, not dynamic, not knowledgeable, scared, smiling, not serious, and not inspiring. For variation 2 (nervous), the participants’ negative responses tended to describe a person who is stressed, not confident, uncertain, not dynamic, not determined, too young, not inspiring, inexperienced, who does not have leader abilities, and is scared, selfish, sensitive, and untrustworthy. Finally, regarding variation 3 (angry), the participants tended to describe a person who is selfish, not confident, not dynamic, not determined, uncertain, arrogant, who does not care, is aggressive, domineering, ironic, pushy, not energetic, not authentic, stressed, inexperienced, untrustworthy, does not have leader abilities and is not convincing.

Both qualitative and quantitative data suggested that the smiling-variation gave the strongest impression of a potential leader. For some of the participants he was considered to be a dynamic, intelligent, sensitive and likeable person. In contrast, the other half of the participants saw a person who got the position because he had the necessary knowledge but was not dynamic, he was a bit scared, and not authentic. In the nervous variation, nervousness characterised the actor, making him seem less dynamic, more scared, and oversensitive. Finally, in the angry variation, the respondents saw a person with increased tyrannical characteristics and decreased dynamism characteristics.

### 3.10.3 Discussion of study 4

Study 4 used videos of a leader/actor's facial expressions in an organisational context. Hypothesis 6 and 8 were tested. In hypothesis 8, it was assumed that changing a facial expression from a sequence to another facial expression indicating a different emotional state would give different perceptions of the observed leader. Quantitative and qualitative analyses supported the hypothesis (H8). The statistical tests showed different perceptions in leader dimensions, commensurate with the emotional state of the final facial expression (manipulation). Specifically, the smiling variation was viewed significantly more favourably in most aspects than the other two variations with the exception of potency for both variations and tyranny for variation 3 (angry). Moreover, the actor in the angry variation was perceived as significantly less sensitive and likeable than in the nervous variation. From a qualitative aspect, the actor in the smiling condition was perceived by some of the participants as dynamic, intelligent, sensitive and likeable and by others as not dynamic, scared and non-authentic. Finally, the qualitative analysis revealed a nervousness leader-negative vibe for variation 2 (less dynamic, scared and oversensitive) and an anger leader-negative vibe for variation 3 (more tyrannical but less dynamic). To summarise, it appears that participants used the actor's facial expressions as information to construct their perceptions about the leader's character.

In hypothesis 6, it was assumed that participants would evaluate positive expressions (expressions with indicators of happiness, e.g. smiling) higher in leadership perception than negative ones (expressions with indicators of anger, or sadness, e.g. eyebrow lowering and pulling together or eyebrow raising and pulling together). The first impression scores (FI) and the "yes" or "no" responses to whether or not the participants considered the actor as a potential leader supported hypothesis (H6). Compared to the other two variations (nervous

and angry, the smiling variation received significantly higher FI scores), and closely split the yes-no participants' responses. In contrast, negative responses dominated participants' preferences in the other two variations. Additionally, variation 1 (smiling) was perceived more favourably than variations 2 (nervous) and 3 (angry) in the majority of the leader dimensions. These results are important because, as in study 2, they reveal a preference of the participants for positive leader displays over negative ones.

### **3.11 Study 5: Comparing leadership perceptions to static facial expressions with dynamic facial expressions**

A considerable number of studies, outside the area of leadership, have compared perceptual differences between static and dynamic facial expressions. Many of these studies present findings indicating that dynamic (or moving) facial expressions are more accurately identified than static (non-moving) facial expressions (Ambadar, Schooler, & Cohn, 2005; Back, Jordan, & Thomas, 2009; Harwood, Hall, & Shinkfield, 1999; Kamachi, Bruce, Mukaida, Gyoba, Yoshikawa, & Akamatsu, 2001; Wehrle, Kaiser, Schmidt, & Scherer, 2000). Furthermore, Bould and colleagues found that dynamic facial expressions were significantly better recognised than static facial expressions, especially for subtle facial expressions (Bould & Morris, 2008; Bould, Morris, & Wink, 2008). Krumhuber and associates' studies regarding the temporal aspects of facial expressions, suggest that timing parameters, such as onset, offset, and apex duration of expression, influence observers evaluations of the expressions (Krumhuber & Kappas, 2005; Krumhuber, Manstead, Cosker, Marshall, & Rosin, 2009; Krumhuber, Manstead, & Kappas, 2006).

Related studies have also revealed differences of static and dynamic facial expressions in perceived intensity. Biele and Grabowska (2006) found that observers of angry and happy faces gave higher intensity ratings to dynamically presented faces than to similar faces

presented statically. Finally, in the leadership study described in chapter II, Stewart, Waller, and Schubert (2009) removed static micro-momentary parts (video frames) of facial expression from former president George W. Bush's speech and compared the differences with the original speech. In other words, they interfered with the dynamic facial expression making it somehow "less dynamic" than it was originally. Their results showed that when these very short units of communication were deducted, they caused the observers to perceive more anger and threat than in the original speech.

The research findings mentioned above show that there are important differences in observers' perception between dynamic and static facial expressions. Scholars suggest that the additional information included in dynamic (temporal development of several static images forming a moving expression) as opposed to static facial expressions (a single static image) helps perceivers to form a more complete impression of what they are observing (Ambadar, Schooler, & Cohn, 2005; Atkinson, Dittrich, Gemmell, & Young, 2004; Back, Jordan, & Thomas, 2009; Bould & Morris, 2008; Bould, Morris, & Wink, 2008). In other words, it is not only important for the perceiver to see, for example, the apex of a facial expression but it is also significant to see the micromomentary "frames" that compose and decompose the whole expression.

As highlighted earlier in this thesis, the leadership studies that can be considered relevant to the current thesis do not use detailed approaches on coding facial expression. As a result, the methods used in my research are based on methods used in facial expression studies from the area of psychology and nonverbal communication. Despite what is argued in the last paragraphs, several scholars suggest that facial expression perception and recognition studies that use static facial expression over dynamic facial expression, also underestimate the dynamic features of motion in facial expression (Ambadar, Schooler, & Cohn, 2005; Back, Jordan, & Thomas, 2009; Biele & Grabowska, 2006; Kilts, Egan, Gideon, Ely, &

Hoffman, 2003). However, research provides reasonable bases for conducting studies to further examine differences in perceptions of static and dynamic facial expressions (e.g. Ambadar, Schooler, & Cohn, 2005; Krumhuber, Manstead, Cosker, Marshall, & Rosin, 2009). The following study introduces, to my knowledge, for the first time, a comparison of observers' perceptions of dynamic and static facial expressions in the context of leadership.

Based on the literature on static and dynamic facial expressions, I expect:

Hypothesis 9: The results will show significant differences between participants' perceptions of the leader's dynamic facial expressions and his respective static facial expressions.

As highlighted earlier in this thesis, subtle differences between facial expressions can have different perceptual impacts (Snodgrass, 1992; Surakka & Hietanen, 1998). Thus, subtle differences in leaders' emotional displays may result in differentiated perceptions. Therefore:

Hypothesis 10: Subtle differences between facial expressions will result in differentiated leadership perceptions.

## **Study 5**

### **3.12 Method**

#### **3.12.1 Participants**

Participants were 372 Cypriot bank employees (70.2% male and 29.8% female). The age groups percentages were: 20-25 (4.8%), 26-30 (16.1%), 31-35 (27.4%), 36-40 (28%), 41-45 (15.1%), 46-50 (4.8%), 51-55 (3%), and 56-60 (0.8%).



### 3.12.2 Design and instruments

The study was conducted in five in-class sessions in the organisational facilities. The questionnaire instrument employed in the present study followed the same structure used in the previous studies (see appendix Q). The questionnaire consisted of two parts (“A” and “B”): Participants were asked, in Part “A”, to indicate their implicit leadership theories (ILTs). Subsequently, they were asked, in part “B”, to evaluate sequences of photos depicting facial expressions, using the same scale as that was used to assess ILTs in the first part of the questionnaire. There was also space for a brief qualitative explanation. These assessed (A) participants’ ILTs (leadership prototypes), and (B) participants perceptions of leadership from facial expression. This study used FACS coded facial expressions extracted from the respective videos of study 4. Additionally, some extra manipulations of facial expressions were tested.

### 3.12.3 Implicit Leadership Theories (ILTs)

Participants’ implicit leadership theories were assessed using the 39-item instrument discussed earlier (see section 3.2.3).

### 3.12.4 Facial expression coding

The instrument used to evaluate facial action movement and intensity was the FACS (see appendix M). The photos of facial expressions were evaluated in part “B” of the questionnaire. They were coded by two FACS certified coders for facial muscle movement and intensity. An interrater reliability analysis using the FACS interrater index was performed to determine consistency between raters.

### 3.12.5 Experimental design and stimulus material

As mentioned earlier, the questionnaire was presented in two parts. Part “A” was the same for every participant. Part “B” had seven different variations of the actor’s facial expressions in photographs.

The stimulus material in part “B” consisted of a sequence of four static images of a man, black-and-white, showing his head and shoulders only. One of the aims behind the experimental design of the current study was to compare leadership perceptions from dynamic facial expression (videos) with leadership perceptions from static facial expression (photos). Consequently, for three variations of the questionnaire, the extracted photos represented the apexes of the emotional expressions used in the video-clips for the previous study. Therefore, variations 4, 5, and 6 comprised a static representation of the dynamic facial expressions used in study 4 (video-variations 1, 2, and 3). Pictures 1, 2 and 3 were identical in each sequence: 1. neutral face, 2. smiling expression, 3. pondering (basic segment). The fourth, and final, picture was different for each sequence and followed the same pattern as the videos. Variation 4 finished with an expression of happiness, variation 5 with nervousness, and variation 6 with anger (see appendix Q).

In addition to the three variations which represented the still-photos version of the video experiment, there were also some other photo-manipulations using the same scenario. Variations 9 and 10 used the same basic segment as variations 4, 5 and 6, but the final photo was changed. Variation 9 used an expression with indicators of anger, similar to variation 6, but with an additional facial action of widening the eye aperture (FACS code, AU: 5). Variation 10 used a smiling display, similar to variation 4, with a differentiated muscle movement (see appendix M for detailed facial action description). The manipulations contained in variations 9 (angry with upper lid raiser [AU: 5]) and 10 (smiling with eyebrow raise), compared to variations 6 (angry) and 4 (smiling), respectively address the tenth

hypothesis (H10). Particularly, the two variations were employed to test if subtle differences between facial expressions would result in differentiated leadership perceptions. The two remaining variations, containing facial expression manipulations, were variations 7 and 8. In variation 7 the participants were asked to evaluate the static facial expressions of the basic segment alone, and in variation 8 to evaluate a photo of the leader/actor's neutral face.

A small paragraph was used to activate the business leader prototype: "The man you are going to see in this part is the head of a research team in the HRM department in one of the banks in Cyprus and his name is Mr Ioannou. Mr Ioannou is currently abroad on business matters. A problem has arisen that his team are trying to resolve. They decide to call Mr Ioannou in a video-call to help with the problem. You are now going to see still photo extracts from the specific video-call, seeing only Mr Ioannou. The video-call starts with Mr Ioannou saying 'hi' to the HRM team. He then listens to the problem and gives a solution." The stimulus material consisted of 4-photos sequences depicting a male actor, showing the head and shoulders only, which represented the video-clips of study 4. After the photo sequences, there was space to briefly answer the question: "Could that person be a business leader? Why?" Using a scale of 1 to 9, participants were then asked to put their first impression rating on perceived leadership for the person seen, and describe how they imagine his character. Finally, the photo sequences were evaluated on leader dimensions using the same ILT quantitative list used in part "A". A professional scriptwriter and philologist evaluated the natural spoken language and a regional bank manager confirmed that the reality of the brief scenario and terminology was captured.

An additional questionnaire-variation (variation 11) was added to triangulate the participants' perceptions of the apexes of the facial expressions as depicted in the photos. Variation 11 included the facial expression apex photographs used in all previous variations to be individually evaluated qualitatively. The context activated was the same as the previous

studies “The man you are going to see in this part is the head of a research team of the HRM department in one of the banks in Cyprus and his name is Mr Ioannou.” After that, a photo with the actor’s neutral face was depicted with a statement “Facial expression is a strong indicator of a person’s underlying emotions. Below, you are going to see extracted frames from a computer-to-computer video conference showing Mr Ioannou’s facial expressions. You will then be asked to describe the emotions you think Mr Ioannou was experiencing at the time”. After that, the participants were asked to describe, in a short paragraph, what emotion they thought the actor was experiencing for each of the photographs used in variations 1-10 (see appendix Q).

#### 3.12.6 Procedure

The study was conducted in five visits to the organisation professional training centre. The participants completed one questionnaire combination: Variation 4 (A,B4; N=58), Variation 5 (A,B5; N=48), Variation 6 (A,B6; N=50), Variation 7 (A,B7; N=54), Variation 8 (A,B8; N=51), Variation 9 (A,B9; N=59), Variation 10 (A,B10; N=52), variation 11 (N=49). Each participant first completed the quantitative list in part A, then answered if the man at the photo-sequence could be a business leader, followed by a first impression rating. Finally, the participants were asked to evaluate the actor on leader dimensions using the quantitative list from part A.

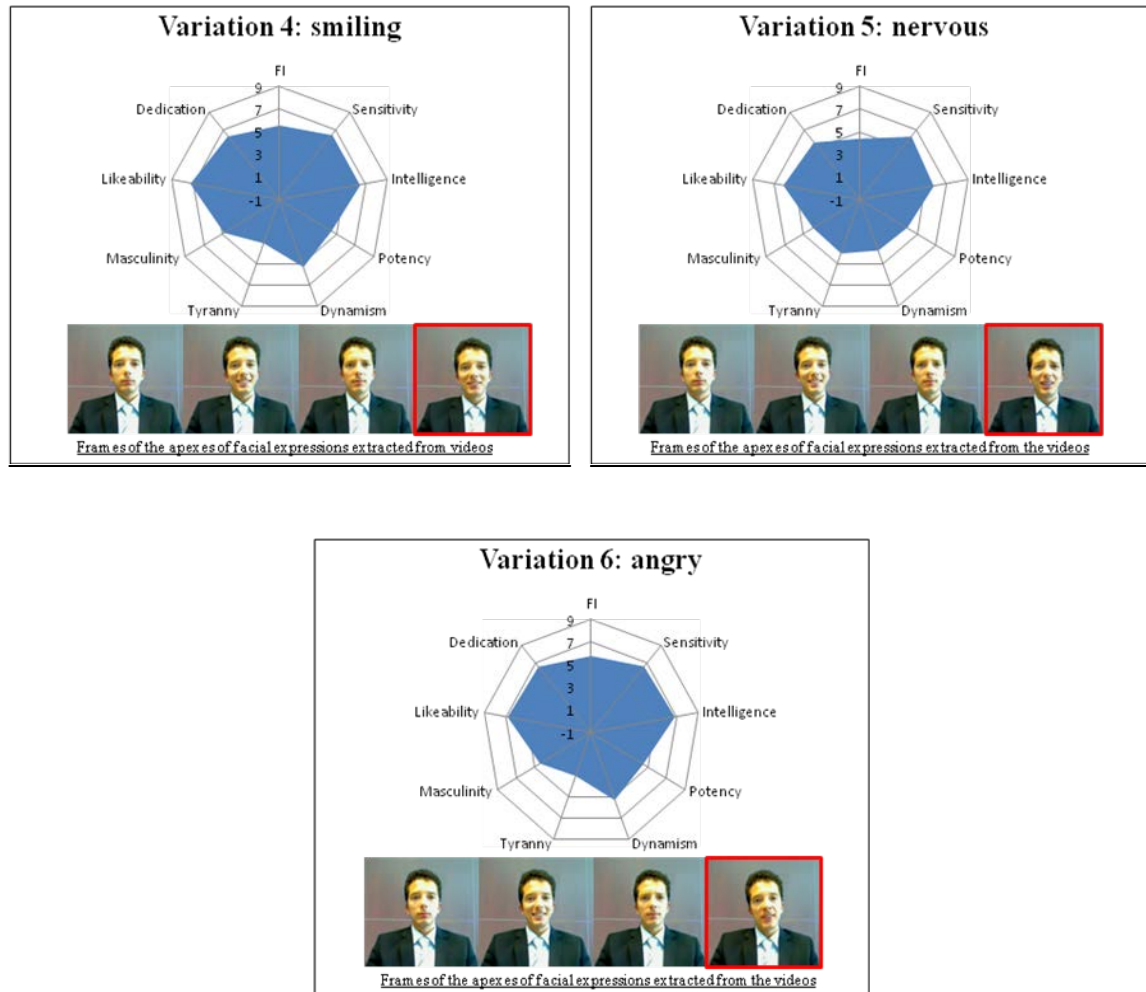
#### **3.13 Results**

As previously mentioned, the static facial expressions represented apexes of expression for the four main facial expression events contained in the scenarios.

### 3.13.1 Evaluation of static facial expressions extracted from the respective videos

Figures 3.6 (variations 4-6) represent the participants' quantitative evaluations in leadership dimensions and first impression score (FI) for each variation.

Figures 3.6 (variations 4-6): Evaluations of facial expressions for the photos



The radar-graphs above reveal an unexpected similarity of variation 4 (smiling) with variation 6 (angry). Particularly, variation 6 (angry) received surprisingly high ratings. Statistical comparisons between the variations' dimensions and FI score were employed to investigate the differences between the variations more precisely. Table 3.8 below, shows the results of a one-way ANOVA test between the participants evaluations in leadership

dimensions and the first impression score (FI) for all the combinations of variations 4 (smiling), 5 (nervous) and 6 (angry).

Table 3.8: Significant differences between participants' perceptions of the three variations (comparisons of variations 4,5,6)

<b>Dimension</b>	<b>Source</b>	<b>Degrees of freedom</b>	<b>Sum of Squares</b>	<b>Mean Squares</b>	<b>F</b>	<b>P</b>
FI	Between Groups	2	56.748	28.374	10.061	.000
	Within Groups	153	431.500	2.820		
	Total	155	488.248			
Sensitivity	Between Groups	2	3.595	1.797	.831	.438
	Within Groups	153	330.894	2.163		
	Total	155	334.489			
Intelligence	Between Groups	2	30.031	15.016	6.358	.002
	Within Groups	153	361.348	2.362		
	Total	155	391.380			
Potency	Between Groups	2	11.103	5.552	1.890	.155
	Within Groups	153	449.439	2.938		
	Total	155	460.542			
Dynamism	Between Groups	2	79.519	39.760	9.544	.000
	Within Groups	153	637.370	4.166		
	Total	155	716.889			
Tyranny	Between Groups	2	32.416	16.208	8.146	.000
	Within Groups	153	304.436	1.990		
	Total	155	336.852			
Masculinity	Between Groups	2	18.168	9.084	2.113	.124
	Within Groups	153	657.813	4.299		
	Total	155	675.981			
Likeability	Between Groups	2	33.283	16.641	6.967	.001
	Within Groups	153	365.441	2.389		
	Total	155	398.724			
Dedication	Between Groups	2	27.292	13.646	4.531	.012
	Within Groups	153	460.813	3.012		
	Total	155	488.105			

As Table 3.6 shows, between the three variations there are significant differences in most leader dimensions, namely intelligence, dynamism, tyranny, likeability, dedication, and

first impression score. Post hoc analyses using the Scheffé post hoc criterion for significance indicated that participants generally perceived the “smiling” and “angry” variations more favourably than the “nervous” one. Specifically, the leader/actor in the “smiling” photo sequence extracted a higher first impression score (variations 4-5:  $\bar{x}_4 - \bar{x}_5 = 1.22$ ,  $p = .001$ ) and was perceived as more dynamic (variations 4-5:  $\bar{x}_4 - \bar{x}_5 = 1.54$ ,  $p = .001$ ), likeable (variations 4-5:  $\bar{x}_4 - \bar{x}_5 = 1.11$ ,  $p = .001$ ) and less tyrannical (variations 4-5:  $\bar{x}_4 - \bar{x}_5 = .99$ ,  $p = .002$ ) than the one in the “nervous” photo sequence. Surprisingly, there were no significant differences between variation 4 (smiling) and variation 6 (angry) in any of the leadership dimensions nor in first impression scores (FI). Comparing variation 6 (angry) with variation 5 (nervous), the first was perceived more favourably in all dimensions except sensitivity, potency and masculinity which were statistically similar. Therefore, the leader/actor in the “angry” photo sequence extracted a higher first impression score (variations 5-6:  $\bar{x}_6 - \bar{x}_5 = 1.39$ ,  $p = .001$ ) and was perceived as more intelligent (variations 5-6:  $\bar{x}_6 - \bar{x}_5 = 1.10$ ,  $p = .002$ ), dynamic (variations 5-6:  $\bar{x}_6 - \bar{x}_5 = 1.55$ ,  $p = .001$ ), dedicated (variations 5-6:  $\bar{x}_6 - \bar{x}_5 = 1.02$ ,  $p = .017$ ), and less tyrannical (variations 5-6:  $\bar{x}_6 - \bar{x}_5 = .99$ ,  $p = .003$ ), than the leader/actor in the “nervous” photo sequence.

From the discussion above it seems that the static version of angry (variation 6) provoked very different perceptions from what would be expected after the results of the dynamic version of angry (variation 3, study 4). Specifically, the static-angry variation was perceived much more favourably than expected.

At that point, the data from the perceived underlying emotions helped in interpreting the results. As described earlier, participants answered open ended questions regarding the underlying emotions of each individual photo showing static facial expression used in study 5. These were analysed by organising the paraphrased data into category systems (Schilling, 2006), which mostly constituted or implied trait descriptions and key characteristics. To

facilitate the presentation of the results, the traits were then counted and illustrated in figures.

Figures 3.7 (a-c) represent participants' descriptions of underlying emotions for the static facial expression representing apexes of the video scenarios.

Figures 3.7 (a-c): Descriptions of underlying emotions for the static facial expression representing apexes of the video scenarios

(3.7.a) **“smiling” frame**





### (3.7.b) nervous frame



disappointment	16
wondering	13
sadness	8
stressed	6
disagreement	6
frustration	6
anxiety	5
fear	4
unhappy	4
scared	4

### (3.7.c) angry frame



bored	6
ironic	5
tired	5
frustration	4
angry	3
wondering	3
confused	2
discomfort	2
disappointment	2
disagreement	2
listens carefully	2
pondering	2
relief	2
thinking	2

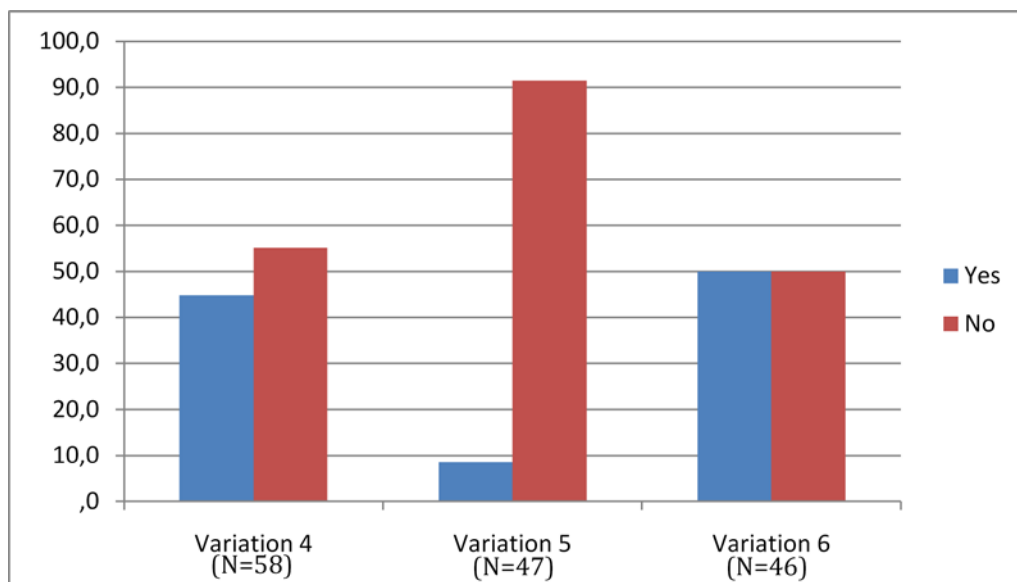
The figures above reveal that, when presented individually in still photos (static facial expression), “smiling” and “nervous” frames each led to a relative consensus of participants’ descriptions. The general impression for the “smiling” frame was positive, including

descriptions such as happiness, satisfaction, calmness, joy, and pleasant mood. A consensus appeared also for the “nervous” frame, which gave a negative impression, with descriptions such as disappointment, wondering, sadness, stress, disagreement and frustration.

In contrast, the “angry” condition in the photo appeared to be sending mixed signals. Compared to the “smiling” and “nervous” frames, frequencies of reported traits were at lower levels, and descriptions included a wide range of trait characteristics such as bored, ironic, tired, angry, careful listener, pondering, relieved, and thinking. An important note here is that it cannot be claimed that these results of underlying emotions for the frames can have 1:1 equivalence with their induction into the scenarios. However, what can be claimed is that they provide (at least) hints of the reactions they may cause in the participants.

Examining indicators of leader-likeness, the participants’ “yes” and “no” responses whether they would imagine the depicted person/actor could be a leader or not, are presented in Figure 3.8.

Figure 3.8: Acceptance of the actor as a potential leader: “yes” and “no” percentages



The “yes” and “no” percentages illustrated in Figure 3.8 reveal a relatively negative consensus only for variation 5 (nervous). The two other variations (4 and 6) split the sample between those who accepted the actor as a potential leader and those who did not. To be more

precise, chi squares analysis revealed significant differences between variations 4 and 5 ( $\chi^2_{(1,105)} = 15.046, p < .001$ ), and 5 with 6 ( $\chi^2_{(1,93)} = 19.038, p < .001$ ). The analysis did not show any significant differences between variations 4 and 6 ( $\chi^2_{(1,104)} = 0.299, p = 0.584$ ). These results are not very different from what would be expected after the results from the video for variation 4 (smiling) and variation 5 (nervous), but are again very different for variation 6 (angry). Clearly, the “nervous” manipulation produced an image which prevented the participants from considering the actor as a potential leader. In contrast, the “yes” and “no” percentages illustrated in Figure 3.8 reveal that for variation 4 (smiling), and variation 6 (angry), the participants’ reactions did not show either a clear negative or positive consensus. The latter implies that, whether or not the depicted actor could be considered as a leader, the participants did not consider the static “smiling” and “angry” variations to be sending obvious messages. However, these results also indicated that these two variations were considered more leader-like than variation 5 (nervous).

Examining inter-variation statistical differences for the respective figures (see appendix R) shows that “yes” participants perceived the actor differently from “no”-participants. The t-tests revealed that there were significant differences between the “yes”-participants and the “no”-participants in all leader dimensions except tyranny for variation 4 (smiling), and tyranny and masculinity for variation 6 (angry). In other words, the participants who accepted the actor as a potential leader in both static-smiling and static-angry variations gave a higher FI score and saw a more dynamic, competent, intelligent, potent, likeable, and sensitive, person than the participants who did not accept the actor as a leader. Moreover, the “yes”-participants in the “angry” variation also saw the leader as more masculine than the “no”-participants.

Qualitative analysis was also employed to examine participants’ perceptions of leadership at a deeper level.

### 3.13.2 Qualitative analysis of participants' reactions to the facial expressions

Table 3.9 below, shows the most used trait descriptions (sorted by frequency) from participants' qualitative responses grouped in "yes, he could be a leader" and "no, he could not be a leader".

Table 3.9: Most used trait descriptions (sorted by frequency) from participants' qualitative responses grouped in "yes, he could be a leader" and "no, he could not be a leader"

<b>Variation</b>	<b>Yes, he could be a leader</b>	<b>No, he could not be a leader</b>
	Smiling: 16	Smiling: 9
	Good listener: 9	Uncertain: 8
	Serious: 9	Too young: 7
	Confident: 9	Inexperienced: 7
Variation 4	Understanding: 7	Not serious: 7
(smiling)	Dynamic: 6	Not confident: 6
	Approachable: 6	Pleasant: 6
	Helpful: 5	Stressed: 6
	Intelligent: 5	Not determined: 5
		Not dynamic: 5
	0	Uncertain: 23
		Stressed: 23
Variation 5		Not determined: 17
(nervous)		Not confident: 15
		Not dynamic: 11
		Inexperienced: 7
		Understanding: 5

---

		Too young: 5
	Smiling: 12	Uncertain: 9
	Good listener: 11	Not confident: 8
	Confident: 7	Not determined: 8
	Pleasant: 6	Not dynamic: 8
Variation 6	Serious: 6	Too young: 5
(angry)	Determined: 6	
	Gives solutions: 6	
	Understanding: 6	
	Helpful: 5	
	Honest: 5	

---

*Note.* Only item frequencies  $\geq 5$  are included in the tables.

The above table helps interpret the results presented so far. Regarding variation 4 (smiling), participants who responded “yes” tended to describe a person who is smiling, a good listener, serious, confident, understanding, dynamic, approachable, helpful and intelligent. The participants who responded “no” tended to describe a person who is smiling, uncertain, too young, inexperienced, not serious, not confident, pleasant, stressed, not determined, not dynamic. For variation 5 (nervous), participants negative responses tended to describe a person who is uncertain, stressed, not determined, not confident, inexperienced, understanding, and too young. Finally, regarding variation 6 (angry), the participants’ negative responses tended to describe a person who is uncertain, not confident, not determined, not dynamic, and too young. In contrast, their positive responses tended to describe a person who is smiling, good listener, confident, pleasant, serious, determined, gives solutions, understanding, helpful, and honest.

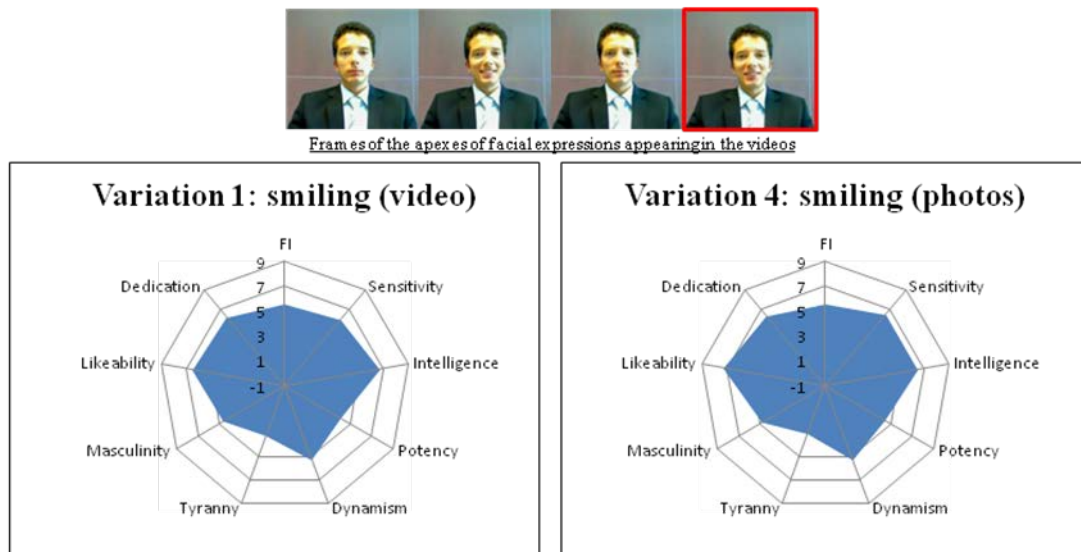
It is apparent from the qualitative data analysis, that the “nervous” variation was the worst combination for a potential leader. Specifically, the actor in variation 5 (nervous) was perceived as a too young, stressed, uncertain person, who possessed sensitivity characteristics, but lacked dynamism. The two remaining variations split participants’ reactions almost equally, and appeared to form a better leader image than the “nervous” variation. Particularly, the actor in variation 4 (smiling), for some participants, was a dynamic, intelligent, sensitive and likeable person and, for others, was a person who is too young and inexperienced, positive but not dynamic, and stressed. Finally, the actor in variation 6 (angry), for some participants was seen as too young, uncertain, and not dynamic and for others he was seen as a man who is dynamic, likeable, and sensitive.

### 3.13.3 Comparing leadership perceptions from dynamic facial expressions with static facial expressions

The analysis of this section aims to test hypothesis 9. The hypothesis is restated below:

Hypothesis 9: The results will show significant differences between participants’ perceptions of the leader’s dynamic facial expressions and his respective static facial expressions.

Figure 3.9: Participants' perceptions of leadership from dynamic stimuli (video: variation 1) with static stimuli (photo extracts of facial expressions' apexes from the video: variation 3)



As shown in Figure 3.9 there is a similarity between the two variations regarding the overall pattern formatted from the leader dimensions and first impression score (FI). Statistical comparisons were employed to analyse the differences between the variations. Table 3.10 below, shows the results of t-tests between the participants evaluations in leadership dimensions and the first impression score (FI) for variations 1 (smiling-video), and 4 (smiling-photos).

Table 3.10: Significant differences between participants' responses from dynamic stimuli (video: variation 1) with static stimuli (photo extracts of facial expressions' apexes from the video: variation 3)

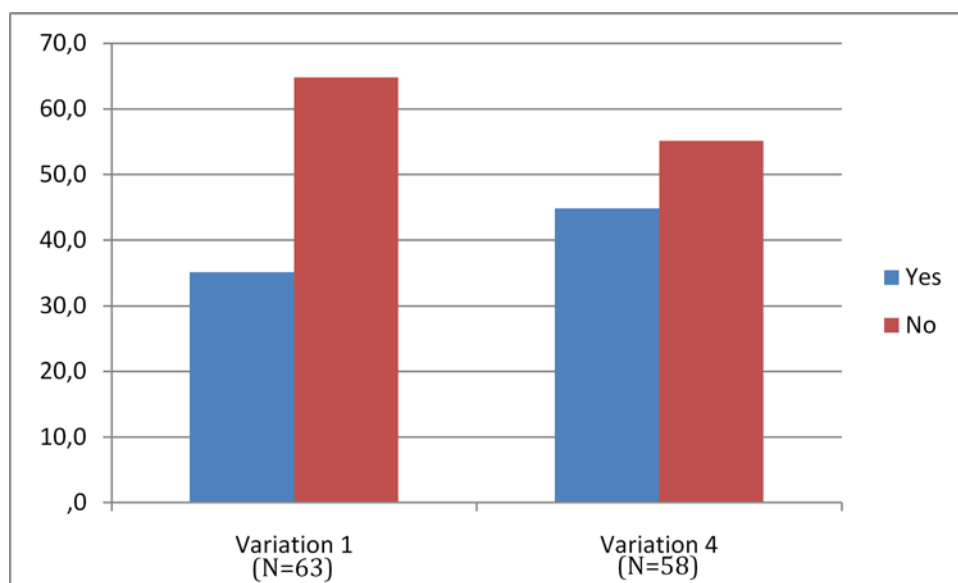
Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances			Df	Sig. (2-tailed)
				F	Sig.	t		
FI	Variation 1	5.61	1.98	2.111	0.15	0.121	119	0.904
	Variation 4	5.57	1.77					

Sensitivity	Variation 1	5.98	1.56					
	Variation 4	6.46	1.61	0.087	0.77	1.664	119	0.099
Intelligence	Variation 1	6.73	1.69					
	Variation 4	6.42	1.65	0.003	0.96	1.008	119	0.315
Potency	Variation 1	4.16	1.74					
	Variation 4	4.46	1.82	0.113	0.74	0.922	119	0.358
Dynamism	Variation 1	5.32	2.32					
	Variation 4	5.32	2.21	0.272	0.6	0.005	119	0.996
Tyranny	Variation 1	3.24	1.35					
	Variation 4	3.08	1.41	0.415	0.52	0.637	119	0.525
Masculinity	Variation 1	4.62	2.07					
	Variation 4	4.81	2.14	0.055	0.81	0.477	119	0.634
Likeability	Variation 1	6.44	2.08					
	Variation 4	7.19	1.52	4.833	0.03	2.252	119	0.026
Dedication	Variation 1	6.21	1.97					
	Variation 4	6.30	1.73	0.841	0.36	0.274	119	0.784

As can be seen from the table above, the two variations are similar, the only difference being that the smiling-photo variation (static) receives significantly higher ratings in perceived likeability than the smiling-video (dynamic). In Figure 3.10 participants' "yes" and "no" responses whether or not they would imagine the depicted person/actor could be a leader are presented.



Figure 3.10: Acceptance of the actor as a potential leader: “yes” and “no” percentages



The “yes” and “no” percentages illustrated in Figure 3.10 reveal a similarity in participants’ reactions whether or not they would imagine the depicted person/actor could be a leader. In both variations the sample was split almost in half. Chi squares analysis showed that there were no significant differences between variations 1 and 4 ( $\chi^2_{(1,121)} = 0.090$ ,  $p=0.764$ ).

Furthermore, the results from the qualitative data are employed to cross-check the quantitative results.

#### 3.13.4 Qualitative analysis of participants’ reactions to the facial expressions

Table 3.11 below, shows the most used trait descriptions (sorted by frequency) from participants’ qualitative responses grouped in “yes, he could be a leader” and “no, he could not be a leader.

Table 3.11: Most used trait descriptions (sorted by frequency) from participants’ qualitative responses grouped in “yes, he could be a leader” and “no, he could not be a leader”

<b>Variation</b>	<b>Yes, he could be a leader</b>	<b>No, he could not be a leader</b>
	Good listener: 11	Stressed: 14
	Pleasant: 10	Not confident: 13
	Smiling: 9	Uncertain: 9
	Confident: 8	Not authentic: 8
	Determined: 8	Not trustworthy: 8
Variation 1	Helpful: 7	Not dynamic: 7
(smiling video)	Understanding: 7	Knowledgeable: 7
	Not stressed: 6	Scared: 6
	Intelligent: 5	Smiling: 6
	Knowledgeable: 5	Not Serious: 5
	Calm: 5	Not inspiring: 5
	Gives solutions: 5	
	Smiling: 16	Smiling: 9
	Good listener: 9	Uncertain: 8
	Serious: 9	Too young: 7
	Confident: 9	Inexperienced: 7
Variation 4	Understanding: 7	Not serious: 7
(smiling photos)	Dynamic: 6	Not confident: 6
	Approachable: 6	Pleasant: 6
	Helpful: 5	Stressed: 6
	Intelligent: 5	Not determined: 5
		Not dynamic: 5

*Note.* Only item frequencies  $\geq 5$  are included in the tables.

It can be seen from the data in Table 3.11 that “yes”-participants, for the two variations had many traits in common (smiling, good listener, confident, understanding, helpful, and intelligent), and other traits from the same leader dimension (variation 1: determined, variation 4: dynamic). In addition, they named traits which were completely different (e.g. variation 1: not stressed, knowledgeable, calm, variation 4: approachable). The “no”-participants’ also had traits in common (smiling, uncertain, not confident, not dynamic), and others which were completely different (e.g. variation 1: scared, not serious, not inspiring, variation 4: too young, inexperienced). To summarise, the qualitative analysis suggests that there were fundamental, common perceptions between participants who saw the smiling-video (dynamic) and participants who saw the smiling-photos variation (static), but there were also differences. Therefore, the qualitative results offer reasons to believe that leadership perceptions for the two variations were similar but were not exactly the same.

The same strategy followed in the comparison of variation 1 (smiling-video) and 4 (smiling-photos), was also applied for variation 2 (nervous-video) and variation 5 (nervous-photos). Figure 3.11 below illustrates participants’ perceptions of leadership from both dynamic stimuli (video: variation 2) and from static stimuli (photo extracts of facial expressions’ apexes from the video: variation 5).

Figure 3.11: Participants’ perceptions of leadership from dynamic stimuli (video: variation 2) with static stimuli (photo extracts of facial expressions’ apexes from the video: variation 5)



Frames of the apexes of facial expressions extracted from the videos

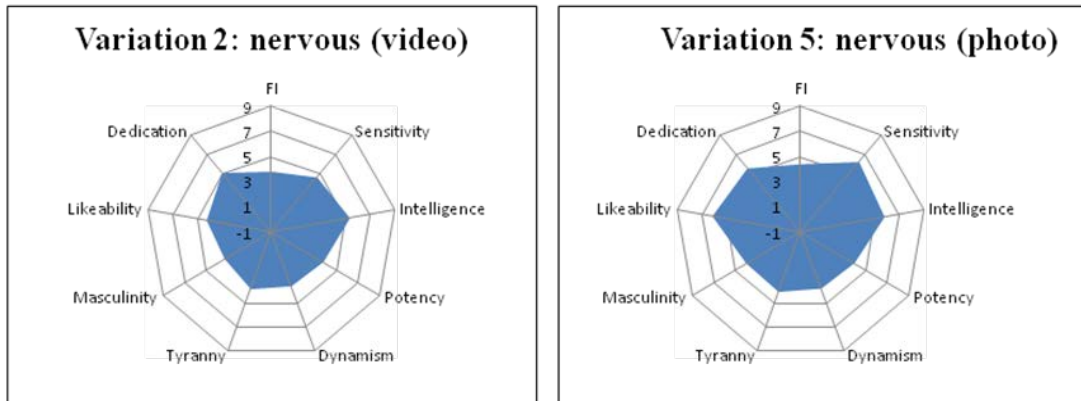


Figure 3.11 shows that the overall pattern of the two variations follows a similar structure, but with more favourable ratings for some dimensions of the photo-condition. Statistical comparisons between the variations' dimensions enabled more precise observations of the differences between the variations. Table 3.12 below, shows the results of t-tests between the participants evaluations in leadership dimensions and the first impression score (FI) for variations 2 (nervous-video), and 5 (nervous-photos).

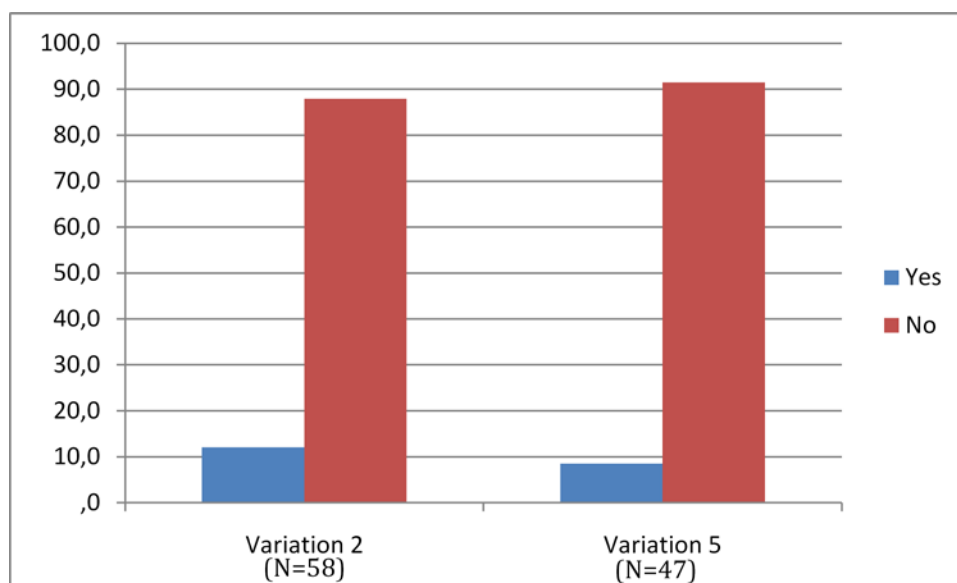
Table 3.12: Significant differences between participants' responses from dynamic stimuli (video: variation 2) with static stimuli (photo extracts of facial expressions' apexes from the video: variation 5)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances			df	Sig. (2-tailed)
				F	Sig.	t		
FI	Variation 2	3.77	1.6	5.3	0.023	-1.98	104	0.05
	Variation 5	4.35	1.34					
Sensitivity	Variation 2	4.63	1.71	1.076	0.302	5.073	104	0.000
	Variation 5	4.63	1.71					

	Variation 5	6.21	1.45					
Intelligence	Variation 2	5.31	1.50					
	Variation 5	5.75	1.53	0.072	0.788	1.503	104	0.136
Potency	Variation 2	3.75	1.35					
	Variation 5	3.93	1.60	1.527	0.219	0.637	104	0.526
Dynamism	Variation 2	3.58	1.98					
	Variation 5	3.78	1.75	0.694	0.407	0.544	104	0.587
Tyranny	Variation 2	3.83	1.45					
	Variation 5	4.07	1.43	0.012	0.914	0.845	104	0.4
Masculinity	Variation 2	3.31	1.64					
	Variation 5	3.97	1.93	1.031	0.312	1.922	104	0.057
Likeability	Variation 2	4.24	2.08					
	Variation 5	6.08	1.69	2.658	0.106	4.914	104	0.000
Dedication	Variation 2	5.10	1.93					
	Variation 5	5.55	1.80	1.806	0.182	1.244	104	0.216

From the table above, it seems that the nervous-photos variation (static) receives significantly higher ratings in first impression (FI), sensitivity, and likeability than the nervous-video (dynamic). Therefore, statistical differences show that the photo sequences for variation 5 (nervous) were perceived more favourably in specific leadership dimensions than the video for variation 2 (nervous). Next, in Figure 3.12, participants' "yes" and "no" responses whether or not they would imagine the depicted person/actor could be a leader are presented.

Figure 3.12: Acceptance of the actor as a potential leader: “yes” and “no” percentages



The “yes” and “no” percentages illustrated in Figure 3.12 reveal a similarity in participants’ reactions whether or not they would imagine the depicted person/actor could be a leader. To be more precise, chi squares analysis did not reveal any significant differences between variations 2 and 5 ( $\chi^2_{(1,106)} = 0.074$ ,  $p = 0.786$ ). In both variations the sample showed a negative consensus. Again, the results from the qualitative data are employed for cross-checking.

### 3.13.5 Qualitative analysis of participants’ reactions to the facial expressions

Table 3.13 below, shows the most used trait descriptions (sorted by frequency) from participants’ qualitative responses grouped in “yes, he could be a leader” and “no, he could not be a leader”.

Table 3.13: Most used trait descriptions (sorted by frequency) from participants’ qualitative responses grouped in “yes, he could be a leader” and “no, he could not be a leader”

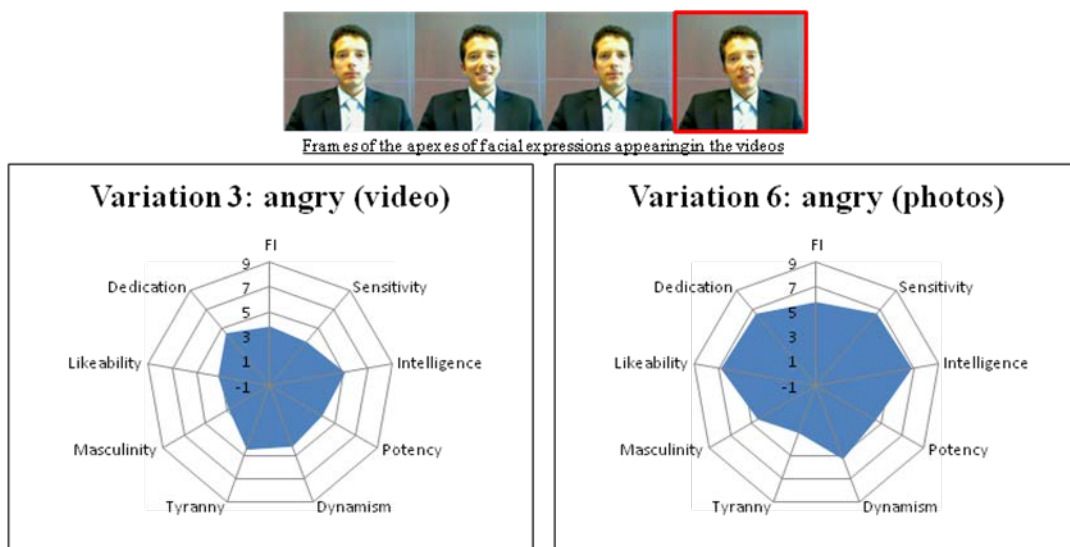
<b>Variation</b>	<b>Yes, he could be a leader</b>	<b>No, he could not be a leader</b>
	0	Stressed: 21 Not confident: 19 Uncertain: 19 Not dynamic: 16 Not determined: 11 Too young: 10 Not inspiring: 6 Inexperienced: 6 Does not have leader abilities: 5 Scared: 5 Selfish: 5 Sensitive: 5 Not trustworthy: 5
Variation 2 (nervous video)	0	Uncertain: 23 Stressed: 23 Not determined: 17 Not confident: 15 Not dynamic: 11 Inexperienced: 7 Understanding: 5 Too young: 5

*Note.* Only item frequencies  $\geq 5$  are included in the tables.

As Table 3.13 shows, almost all trait descriptions used for variation 5 (photo-nervous) are used for variation 2 (video-nervous) with the exception of “understanding”, a trait included in dimension of sensitivity. Furthermore, there were many negative trait descriptions used for variation 2 (video-nervous) which were not found in variation 5 (photo-nervous) such as “scared”, “selfish”, “untrustworthy”, “not inspiring”. Therefore, the qualitative results reveal a tendency for participants to highlight basic similarities between the two variations, but for the video variation to extend more on the negative characteristics.

Quantitative and qualitative data from variation 3 (angry-video) with variation 6 (angry-photos) are discussed in the same way as the two previous variation-combinations. Figure 3.13 below illustrates both participants’ perceptions of leadership from dynamic stimuli (video: variation 3) and from static stimuli (photo extracts of facial expressions’ apexes from the video: variation 6).

Figure 3.13: Participants’ perceptions of leaderships from dynamic stimuli (video: variation 3) with static stimuli (photo extracts of facial expressions’ apexes from the video: variation 6)



In contrast with the last two variation-comparisons, it can be seen in Figure 3.13 that the overall pattern is considerably different for the two variations. Statistical comparisons



between the variations' dimensions are now discussed. Table 3.14 below, shows the results of t-tests between the participants evaluations in leadership dimensions and the first impression score (FI) for variations 3 (angry-video), and 6 (angry-photos).

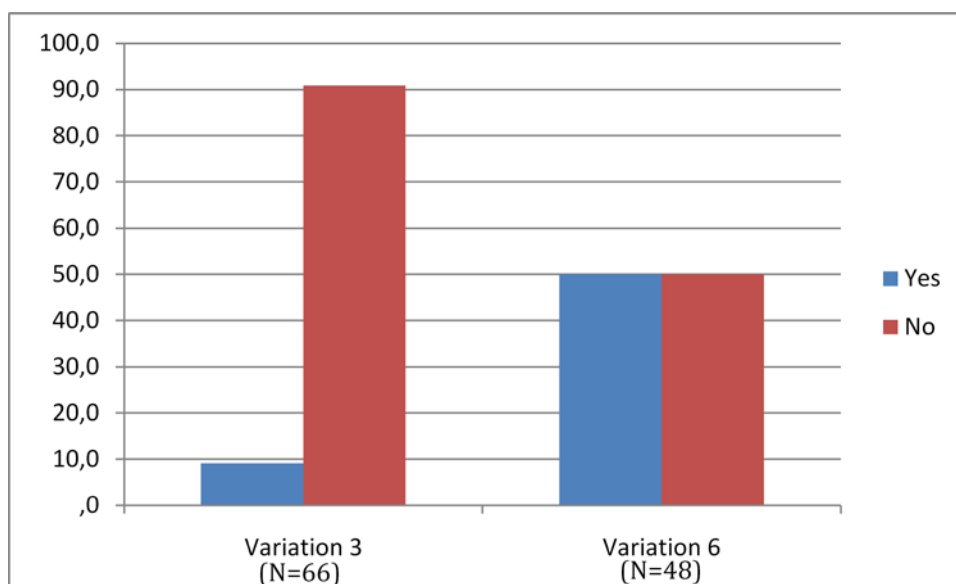
Table 3.14: Significant differences between participants' responses from dynamic stimuli (video: variation 3) with static stimuli (photo extracts of facial expressions' apexes from the video: variation 6)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		t	Df	Sig. (2-tailed)
				F	Sig.			
FI	Variation 3	3.77	1.77	0.101	0.752	-5.799	114	0.000
	Variation 6	5.74	1.85					
Sensitivity	Variation 3	3.58	1.78	9.121	0.003	-10.074	114	0.000
	Variation 6	6.59	1.29					
Intelligence	Variation 3	5.09	1.86	3.58	0.061	-5.613	114	0.000
	Variation 6	6.85	1.38					
Potency	Variation 3	3.81	1.57	0.684	0.41	-2.46	114	0.015
	Variation 6	4.56	1.68					
Dynamism	Variation 3	4.20	2.19	0.316	0.575	-2.817	114	0.006
	Variation 6	5.34	2.08					
Tyranny	Variation 3	4.48	1.83	7.683	0.007	4.522	114	0.000
	Variation 6	3.08	1.37					
Masculinity	Variation 3	2.84	1.95	0.046	0.831	-4.267	114	0.000
	Variation 6	4.46	2.11					

Likeability	Variation 3	3.24	1.76	3.701	0.057	-11.817	114	0.000
	Variation 6	6.83	1.40					
Dedication	Variation 3	4.52	2.00	7.223	0.008	-5.845	114	0.000
	Variation 6	6.57	1.67					

The table reveals that the angry-photos variation (static) received a significantly higher first impression score (FI), and higher ratings in all leader dimensions except tyranny (video-angry is perceived as more tyrannical) when compared with the angry-video (dynamic). In other words, the statistical differences show that the photo sequences for angry (variation 6) are perceived much more favourably compared to the video for angry (variation 3). Furthermore, participants' "yes" and "no" responses whether or not they would imagine the depicted person/actor could be a leader are illustrated in Figure 3.14.

Figure 3.14: Acceptance of the actor as a potential leader: "yes" and "no" percentages



The "yes" and "no" percentages illustrated in Figure 3.14 reveal a dissimilarity in participants' responses as to whether or not they would imagine the depicted person/actor as a leader. To be more precise, chi squares analysis revealed significant differences between

variations 3 and 6 ( $\chi^2_{(1,112)} = 23.507, p < .001$ ). While variation 3 (angry-video) showed a relative negative consensus, variation 6 (angry-photos) split the sample almost equally in the “yes” and “no” participants. The results from the qualitative data are employed below for triangulating the results.

### 3.13.6 Qualitative analysis of participants’ reactions to the facial expressions

Table 3.15 below, shows the most used trait descriptions (sorted by frequency) from participants’ qualitative responses grouped in “yes, he could be a leader” and “no, he could not be a leader”.

Table 3.15: Most used trait descriptions (sorted by frequency) from participants’ qualitative responses grouped in “yes, he could be a leader” and “no, he could not be a leader”

<b>Variation</b>	<b>Yes, he could be a leader</b>	<b>No, he could not be a leader</b>
	0	Selfish: 14
		Not confident: 11
		Not dynamic: 14
		Not determined: 12
		Uncertain: 12
		Arrogant: 9
Variation 3 (angry videos)		Indifferent, does not care: 9
		Aggressive : 8
		Domineering: 7
		Ironic: 7
		Pushy: 7
		Not energetic: 6
		Not authentic: 6

---

	Stressed: 6	
	Inexperienced: 5	
	Not trustworthy: 5	
	Does not have leader abilities: 5	
	Not convincing: 5	
	Smiling: 12	Uncertain: 9
	Good listener: 11	Not confident: 8
	Confident: 7	Not determined: 8
	Pleasant: 6	Not dynamic: 8
Variation 6	Serious: 6	Too young: 5
(angry photos)	Determined: 6	
	Gives solutions: 6	
	Understanding: 6	
	Helpful: 5	
	Honest: 5	

---

*Note.* Only item frequencies  $\geq 5$  are included in the tables.

The qualitative comments revealed that overall perceptions for the two variations shared differences which were far from subtle. Participants' descriptions for variation 3 (angry-video) were leader anti-prototypic per se. In contrast, participants' descriptions for variation 6 (angry-photos) included a leader prototypic aspect with descriptions such as smiling, confident, and determined. The "no"-participants of variation 6 included some trait descriptions similar to variation 3, such as uncertain, not confident, not determined, not dynamic (mainly referring to a lack in the dynamism dimension). However, in the latter variation, the participants had much more to say in terms of anti-prototypic trait descriptions, clearly identifying "tyranny" characteristics (e.g. aggressive, domineering, selfish, ironic,

pushy). Therefore, the qualitative results revealed different leadership perceptions for the two variations, with the angry-video condition (dynamic) perceived more negatively than the angry-photos condition (static).

### 3.13.7 Summary: Leadership perceptions from static facial expressions and comparisons with their respective dynamic facial expressions

Participants generally perceived variation 5 (nervous) differently and less favourably than variations 4 (smiling) and 6 (angry). Taking into consideration the results of study 4, variation 6 (angry) gave results which were unexpected, such as a lack of a statistical difference with variation 4 (smiling). Furthermore, the leader/actor in variation 6 (angry) extracted a higher first impression score (FI) and was perceived as more intelligent, dynamic, dedicated, and less tyrannical, than the leader/actor in variation 5 (nervous). The qualitative analysis reinforced the results, with variation 5 (nervous) being the worst combination for a potential leader. The leader/actor in the specific variation was perceived as a person who was stressed, uncertain, and too young, who possessed sensitivity characteristics, but lacked dynamism. On the other hand, the actor in variation 6 (angry) for some participants was seen as too young, uncertain, and not dynamic and for others he was seen as a man who was dynamic, likeable, and sensitive. Finally, some of the participants in variation 4 (smiling) considered the actor to be a dynamic, intelligent, sensitive and likeable person and others saw a person who was too young, stressed, not dynamic, but positive.

The leader-likeness indicators showed that the participants preferred variation 4 (smiling) over variation 5 (nervous). Particularly, variation 4 (smiling) received significantly higher FI scores than variation 5 (nervous) and split the yes-no participants responses. In contrast, in variation 5 (nervous) “no” responses dominated participants’ preferences. Additionally, variation 4 (smiling) was perceived as more dynamic, likeable and less

tyrannical than variation 5 (nervous). The results for variation 6 (angry) were unexpected. Even though the static version (photo sequence, variation 6) frame was extracted from the dynamic version (video, variation 3), it did not result in similar perceptions. The static-angry variation was seen more favourably than would be expected after the results of the video-angry (variation 3). The quantitative data analysis showed that it was perceived as equally leader-like to the static-smiling variation. Moreover, the qualitative data helped to make sense of the results. Analysing participants' descriptions of the frames' underlying emotions revealed a relative consensus for the static frames "smiling" and "nervous". The "smiling" frame was considered to transmit positive emotions such as happiness, and the "nervous" frame was considered to transmit negative descriptions such as disappointment. The most striking result to emerge from the data is that the "angry" frame was found to be ambiguous in meaning, sending mixed emotional signals (both negative and positive) rather than anger signals. Specifically, the participants' descriptions for the "angry" frame included a wide range of descriptions from "bored" to "relieved". Furthermore, the qualitative data analysis for variation 6 (angry) indicated both leader-positive (dynamic, likeable, and sensitive) and leader-negative (too young, uncertain, and not dynamic) descriptions. In other words, variation 6 (static-angry) was perceived much more positively than one would expect, given the results of variation 3 (dynamic-angry).

Both quantitative and qualitative data analysis showed that the static facial expression variations were evaluated more positively than the dynamic facial expression variations. The less intense results regarded the "smiling" comparisons (variation 1: video, with variation 4: photo sequence). The quantitative results showed that the static-smiling (variation 4: photo sequence) was perceived as more likeable than the dynamic-smiling (variation 1: video). Whilst the qualitative analysis revealed mainly similarities in respondents' descriptions, there were also subtle differences. Regarding the "nervous" comparisons, the quantitative results

showed that the static-nervous (variation 5: photo sequence) was perceived more favourably in first impression (FI), sensitivity, and likeability than the dynamic-nervous (variation 2: video). Moreover, the qualitative analysis revealed some similarities in respondents' descriptions, but also a tendency to extend more on the negative characteristics for the dynamic-nervous variation. Concerning the "angry" comparisons, the differences were very pronounced for the two conditions. The quantitative results showed that the static-angry (variation 6: photo sequence) was perceived more favourably in every leader dimension comparing dynamic-angry (variation 3: video). Also, the qualitative analysis revealed a leader-prototypic aspect (along with the anti-prototypic) for the static-angry (variation 6: photo sequence). The latter was absent in the dynamic-angry (variation 3: video).

#### 3.13.8 Additional manipulations

The analysis of this section aims to test H6, H8, and H10. The three hypotheses are restated below:

Hypothesis 6: Participants will evaluate positive expressions (expressions with indicators of happiness, e.g. smiling) higher in leadership perception than negative ones (expressions with indicators of anger, or sadness, e.g. eyebrow lowering and pulling together or eyebrow raising and pulling together).

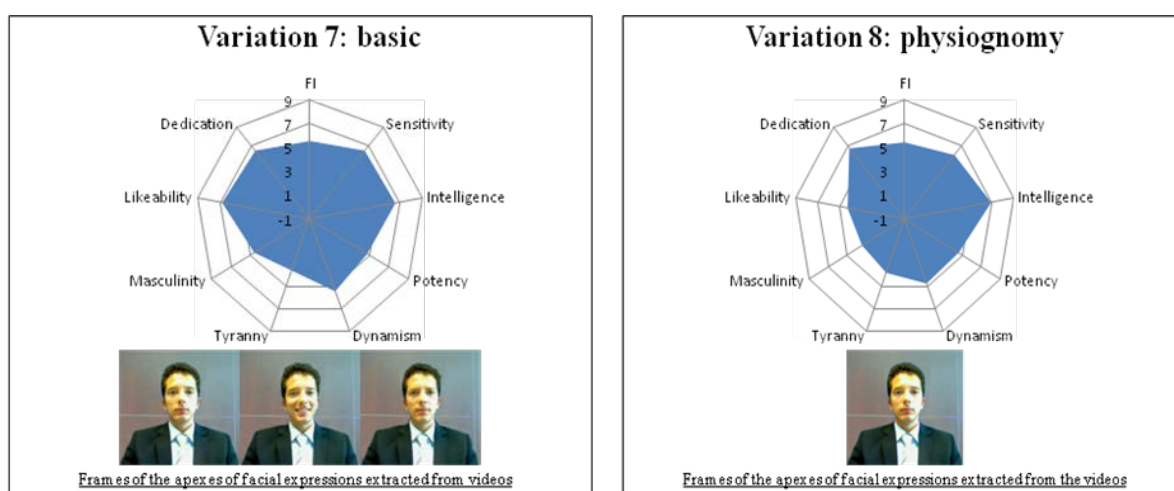
Hypothesis 8: From a sequence of facial expressions, changing one facial expression to another indicating a different emotional state will alter perceptions of the observed leader.

Hypothesis 10: Subtle differences between facial expressions will result in differentiated leadership perceptions.

### 3.13.9 Examining the basic three-frames structure, and physiognomy

Figures 3.15 (variations 7, 8) represent the participants' quantitative evaluations in leadership dimensions and first impression score (FI) for each variation.

Figures 3.15 (variations 7, 8): Quantitative evaluations in leadership dimensions for each variation



Figures 3.15 show that the actor's static facial expressions depicted in variation 7 (basic) and variation 8 (physiognomy) resulted into a modest leader image in terms of leadership dimensions and first impression score (FI). Variation 7 (basic) was perceived slightly more favourably compared to variation 8 (physiognomy) in terms of some leader dimensions. Table 3.16 below, shows the results of t-tests between the participants evaluations in leadership dimensions and the first impression score (FI) for variations 7 (basic) and 8 (physiognomy).



Table 3.16: Significant differences between participants' perceptions for variation 7 and 8

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		t	df	Sig. (2-tailed)
				F	Sig.			
FI	Variation 7	5.52	1.75	5.73	0.02	0.351	103	0.726
	Variation 8	5.41	1.33					
Sensitivity	Variation 7	6.46	1.58	0.95	0.33	1.636	103	0.105
	Variation 8	5.98	1.41					
Intelligence	Variation 7	6.6	1.44	0.72	0.4	-1.08	103	0.284
	Variation 8	6.89	1.31					
Potency	Variation 7	4.8	1.53	0.03	0.86	0.603	103	0.548
	Variation 8	4.62	1.41					
Dynamism	Variation 7	5.44	1.95	0.02	0.88	1.749	103	0.083
	Variation 8	4.76	2.03					
Tyranny	Variation 7	3.59	1.28	1.12	0.29	-0.89	103	0.376
	Variation 8	3.8	1.09					
Masculinity	Variation 7	4.64	2.02	2.58	0.11	3.289	103	0.001
	Variation 8	3.41	1.78					
Likeability	Variation 7	6.81	1.78	0.85	0.36	7.349	103	0.000
	Variation 8	4.19	1.89					
Dedication	Variation 7	6.46	1.47	0	1	-0.9	103	0.371
	Variation 8	6.71	1.36					

The table above shows that compared to variation 8 (physiognomy), variation 7 (basic) was perceived significantly higher in dimensions of masculinity and likeability. The main difference between the two variations was two frames of static facial expressions (see figures 3.15). Consequently, data from the perceived underlying emotions were employed to aid the interpretation of the results. Figures 3.16 (a,b) represent participants' descriptions of underlying emotions for the static facial expression for the two additional frames of variation 7 (basic).

Figures 3.16 (a,b): Descriptions of underlying emotions for the static facial expression representing apexes of the video scenarios

(3.16.a) **“happy” frame**

	
happy	29
satisfaction	19
joy	13
pleasant	8
cool	4
pleased	2
excitement	2
good mood	2
success	1
laugh	1
laughing	
awkward	1

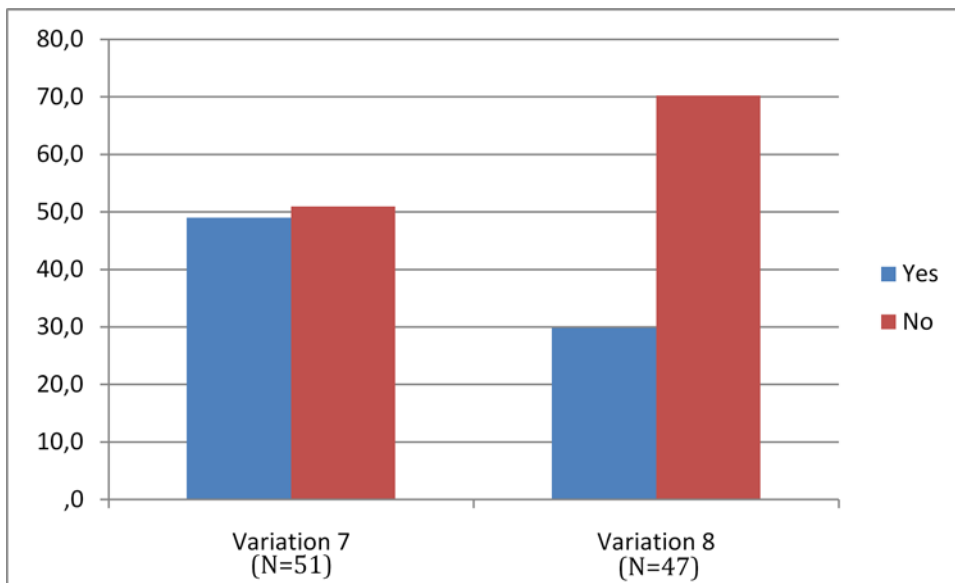
### (3.16.b) “pondering” frame



It is apparent from these figures, that the “happy” and “pondering” frames caused a relative consensus in the participants’ descriptions when presented in still photos (static facial expression). The general impression for the “happy” frame was positive, including the descriptions “happiness”, “satisfaction”, “joy”, and “pleasant”. Furthermore, the “pondering” frame gave the impression of a man struggling to find a solution to a problem with “pondering”, and “thinking” dominating respondents’ descriptions. Summarising, the differences of variation 7 (basic) from variation 8 (physiognomy) were basically two frames showing a positive attitude and a pondering man, respectively. When these frames were added to the physiognomy frame, thus constructing variation 7 (basic), they significantly increased perceived masculinity and likeability.

Returning to the same structure used in discussing the results, the participants’ “yes” and “no” responses to whether they would imagine the depicted person/actor could be a leader or not are presented next. Figure 3.17 represents the participants’ “yes” and “no” responses in percentages regarding their acceptance of the actor as a potential leader.

Figure 3.17: Acceptance of the actor as a potential leader: “yes” and “no” percentages



The “yes” and “no” percentages for variations 7 (basic) and 8 (physiognomy) illustrated in Figure 3.17 seem to be different. However, this difference was not statistically significant. To be more precise, chi squares analysis did not reveal any significant differences between variations 7 and 8 ( $\chi^2_{(1,98)}=3.016$ ,  $p=0.082$ ).

Examining inter-variation statistical differences for the variation 7, which split the sample closely (see appendix R), shows “yes”-participants perceived a different leader-image comparing to “no”-participants. The t-tests revealed that there were significant differences between these two groups in almost every leader dimension (with the exception of tyranny).

Furthermore, qualitative analysis subsequently helped to examine participants’ perceptions of leadership from another angle. Table 3.17 below, shows the most used trait descriptions (sorted by frequency) from participants’ qualitative responses grouped in “yes, he could be a leader” and “no, he could not be a leader”.

Table 3.17: Most used trait descriptions (sorted by frequency) from participants’ qualitative responses grouped in “yes, he could be a leader” and “no, he could not be a leader”

<b>Variation</b>	<b>Yes, he could be a leader</b>	<b>No, he could not be a leader</b>
Variation 7 (basic)	Smiling: 14	Not confident: 9
	Confident: 11	Not dynamic: 7
	Serious: 8	Too young: 7
	Determined: 6	Sensitive: 6
	Understanding: 6	Smiling: 6
	Adjustive: 5	Not trustworthy: 5
	Energetic: 5	Uncertain: 5
	Good listener: 5	Not serious: 5
		Stressed: 5
		Confident: 6
Variation 8 (physiognomy)	Dynamic: 6	Not confident: 13
	Educated: 6	Stressed: 13
	Calm: 5	Not determined: 9
		Uncertain: 9
		Not inspiring: 6
		Selfish: 5
	Sensitive: 5	
	Too young: 5	

*Note.* Only item frequencies  $\geq 5$  are included in the tables.

The qualitative analysis helped to form a more precise picture about participants' leadership perceptions. Regarding variation 7, the participants who responded "yes" tended to describe a person with trait characteristics from dimensions of "likeability", and "dynamism", who was, at the same time, serious, adjustive and a good listener. In contrast, the participants who responded "no" tended to describe a person who lacked characteristics from the

“dynamism” dimension, who was sensitive, smiling, too young, stressed, and uncertain. Furthermore, regarding variation 8, the few participants who responded “yes” tended to describe a confident, dynamic, educated, and calm person. The participants who responded “no” tended to describe a person who lacks characteristics from the “dynamism” dimension, who was sensitive, not inspiring, too young and who was stressed and uncertain. Furthermore, in the two variations, “no”-participants gave similar descriptions but with some important differences. In variation 8 (physiognomy), in which the two frames of smiling and pondering (see Figures 3.15) were absent, “no”-participants’ did not include the descriptions “smiling” and emphasised more on the tyrannical characteristics such as “selfish”, “stressed” and “uncertain”.

A final set of tests included comparisons of variation 7 (basic) with the other static variations (variations 4, 5, 6, 9, and 10, see appendix S). These results show that variation 7 (basic) was seen more favourably than perceived leader-negative variations (e.g. variation 5: nervous). In addition, perceived leader-positive variations (e.g. variation 4: smiling) did not score higher ratings than variation 7 (basic). These comparisons suggest that leadership perceptions did not exceed the leader perceptual limits set by the basic format.

#### 3.13.10 Adding subtle facial actions: Angry with widening the eye aperture (AU: 5) and smiling with eyebrow raise

After presenting the results for variation 7 (basic) and 8 (physiognomy), the same structure follows in the next section for variations 9 (angry with AU: 5) and 10 (smiling with eyebrow raise). The following comparisons test hypotheses 6 and 8 again:

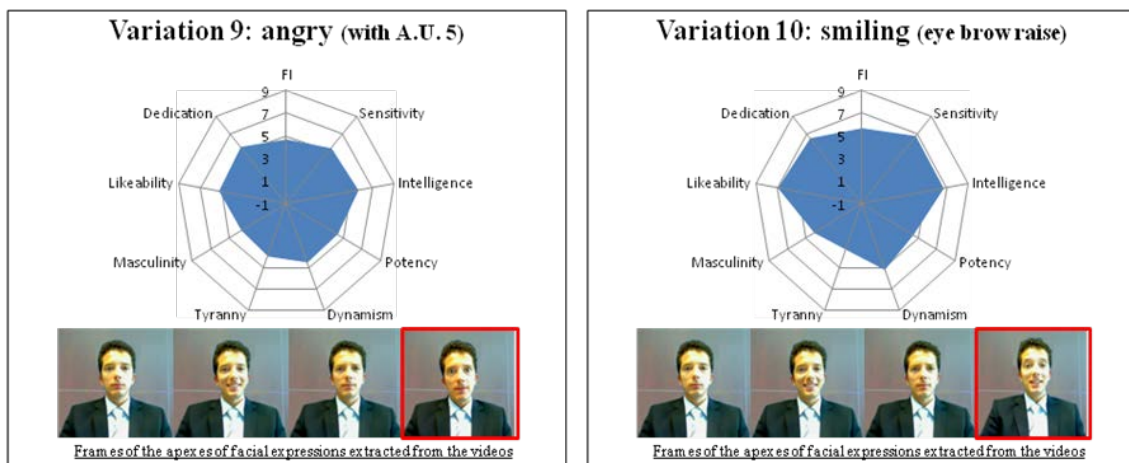
Hypothesis 6: Participants will evaluate positive expressions (expressions with indicators of happiness, e.g. smiling) higher in leadership perception than negative ones (expressions with

indicators of anger, or sadness, e.g. eyebrow lowering and pulling together or eyebrow raising and pulling together).

Hypothesis 8: From a sequence of facial expressions, changing one facial expression to another indicating a different emotional state will alter perceptions of the observed leader.

Figures 3.18 (variations 9, 10) represent the participants' quantitative evaluations of the two variations in the leader dimensions.

Figures 3.18 (variations 9, 10): Quantitative evaluations in leadership dimensions for each variation



The two charts show that variation 9 (angry with AU: 5) and 10 (smiling with eyebrow raise) differed in perceived leader dimensions and first impression score (FI). Statistical tests were employed to facilitate the comparisons of the two variations. Table 3.18 below, shows the results of t-tests between the participants' evaluations in leadership dimensions and the first impression score (FI) for variation 9 (angry with AU: 5) and 10 (smiling with eyebrow raise).

Table 3.18: Significant differences between participants' perceptions (variations 9, 10)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		t	df	Sig. (2-tailed)
				F	Sig.			
FI	Variation 9	4.66	1.9	0.041	0.84	-2.67	109	0.009
	Variation 10	5.63	1.94					
Sensitivity	Variation 9	5.37	1.87	5.191	0.03	-4.41	109	0.000
	Variation 10	6.78	1.42					
Intelligence	Variation 9	5.67	1.98	7.453	0.01	-3.24	109	0.002
	Variation 10	6.74	1.39					
Potency	Variation 9	4.4	2.02	0.629	0.43	-0.32	109	0.749
	Variation 10	4.52	1.78					
Dynamism	Variation 9	4.56	2.42	4.12	0.05	-1.49	109	0.139
	Variation 10	5.19	1.97					
Tyranny	Variation 9	3.99	1.64	0.184	0.67	2.278	109	0.025
	Variation 10	3.31	1.52					
Masculinity	Variation 9	3.79	2.19	0.031	0.86	-0.82	109	0.412
	Variation 10	4.13	2.24					
Likeability	Variation 9	5.29	2.18	5.033	0.03	-4.41	109	0.000
	Variation 10	6.96	1.76					
Dedication	Variation 9	5.53	2.02	2.937	0.09	-2.78	109	0.006
	Variation 10	6.52	1.68					

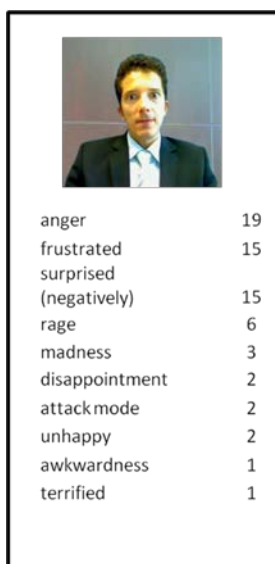


The statistical comparisons show that participants generally perceived variation 10 (smiling with eyebrow raise) more favourably than variation 9 (angry with AU: 5). Comparing the former with the latter, the three dimensions that did not differ were perceived dynamism, potency and masculinity. This means that the leader/actor in the “smiling with eyebrow raise” photo sequence extracted a higher first impression score (FI) and was perceived as more sensitive, intelligent, dedicated, likeable and less tyrannical than the leader/actor in the “angry with AU:5” photo sequence.

The data from the perceived underlying emotions helped in interpreting the results. Figures 3.19 (a,b) represent participants’ descriptions of underlying emotions for the static facial expression (manipulation photos) representing apexes of the video scenarios.

Figures 3.19 (a,b): Descriptions of underlying emotions for the static facial expression (manipulation photos) representing apexes of the video scenarios

**(3.19.a) “angry with AU: 5” frame**



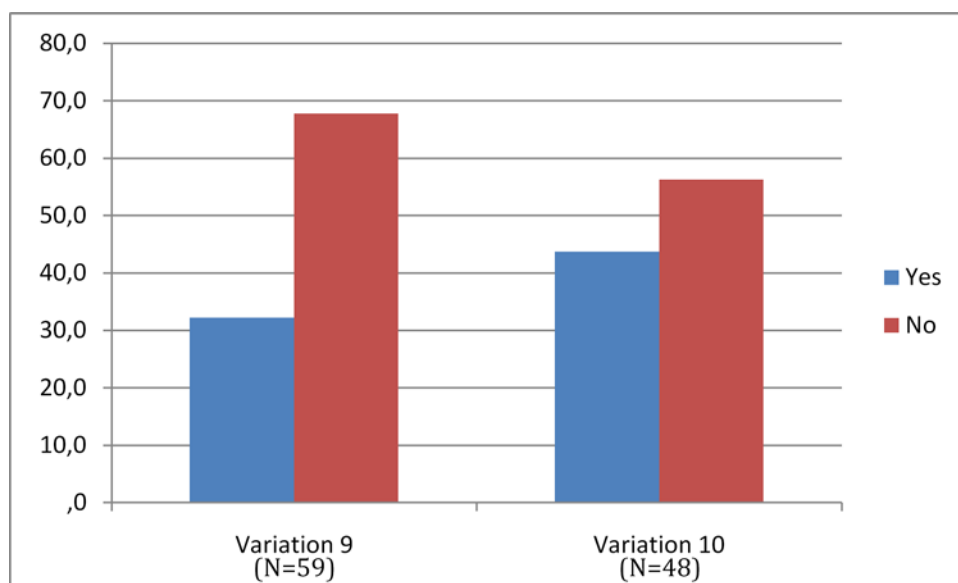
### (3.19.b) “happy with eyebrow raise” frame



As can be seen above, the “angry with AU: 5” and “happy with eyebrow raise” frames caused a relative consensus to the participants’ descriptions when presented in still photos (static facial expression). The general impression for the “angry with AU: 5” frame was negative, including descriptions such as anger, frustration, negative surprise, and rage. Furthermore, the “happy with eyebrow raise” frame gave a positive impression including descriptions such as pleasant surprise, happy, and excited.

The participants’ “yes” and “no” responses to whether or not they would imagine the depicted person/actor could be a leader are presented next. Figure 3.20 represents the participants’ “yes” and “no” responses in percentages regarding their acceptance of the actor as a potential leader.

Figure 3.20: acceptance of the actor as a potential leader: “yes” and “no” percentages



The “yes” and “no” percentages for variation 9 (angry with AU: 5), and variation 10 (smiling with eyebrow raise) illustrated in Figure 3.20, seem to be different. However, this difference was not statistically significant. To be more precise, chi squares analysis did not reveal any significant differences between variations 9 and 10 ( $\chi^2_{(1,107)} = 1.055, p=0.304$ ).

Examining inter-variation statistical differences for variation 10 (see appendix R) shows that “yes”-participants saw the actor in a different light compared to “no”-participants. The t-tests revealed that there were significant differences between these two groups in almost every leader dimension (with the exception of tyranny).

The qualitative analysis for variation 9 (angry with AU: 5) and variation 10 (smiling with eyebrow raise), presented in Table 3.19 below, shows the most used trait descriptions (sorted by frequency) from participants’ qualitative responses, grouped in “yes, he could be a leader” and “no, he could not be a leader”.

Table 3.19: Most used trait descriptions (sorted by frequency) from participants' qualitative responses grouped in "yes, he could be a leader" and "no, he could not be a leader"

<b>Variation</b>	<b>Yes, he could be a leader</b>	<b>No, he could not be a leader</b>
	Intelligent: 6	Uncertain: 10
	Honest: 5	Stressed: 9
Variation 9 (angry with AU: 5)		Not confident: 8
		Too expressive: 7
		Scared: 6
		Not serious: 6
		Not trustworthy: 5
	Smiling: 14	Not dynamic: 14
	Good listener: 8	Not confident: 10
Variation 10 (smiling with eyebrow raise)	Understanding: 6	Uncertain: 11
	Pleasant: 6	Stressed: 8
	Honest: 6	Smiling: 7
	Confident: 6	Not determined: 5
	Likeable: 5	

*Note.* Only item frequencies  $\geq 5$  are included in the tables.

The two variations' qualitative comments reveal two very different perceptions. In variation 9 (angry with AU: 5), "yes"-participants used traits such as intelligent and honest to describe the leader/actor. In contrast, "yes"-participants in variation 10 (smiling with eyebrow raise), used trait characteristics from leader dimensions of "sensitivity" (understanding, honest), "likeability" (smiling, likeable), and "dynamism" (confident). The "no"-participants, for both variations, gave some common trait characteristics such as

uncertain, stressed, and not confident. Furthermore, the two variations differed from each other with the leader/actor in variation 9 (angry with AU: 5) being perceived as too expressive, scared, not serious and not trustworthy and in variation 10 (smiling with eyebrow raise) as not dynamic, not determined, and smiling.

Besides the comparison of variation 9 (angry with AU: 5) and variation 10 (smiling with eyebrow raise) with each other, the two variations were also compared with variation 5 (nervous). A summary of the results will be provided below but a more detailed analysis can be found in the appendix T.

The statistical comparisons of variations 9 with variation 5 revealed that the participants generally perceived variation 5 (nervous) differently, but not more leader-like, than variation 9 (angry with AU: 5). Participants' descriptions of underlying emotions for the frames used for the manipulations revealed that the frames were perceived as expected: variation 9 (negative-intense anger); variation 5 (negative-nervousness). The leader/actor in variation 5 (nervous) photo sequence was perceived as more sensitive, and likeable than the leader/actor in variation 9 (angry with AU: 5). The "yes" and "no" percentages whether the participants considered the respective depicted actor as a potential leader or not, tended to favour variation 9 (angry with AU: 5) over variation 5 (nervous). Furthermore, the qualitative analysis was also congruent with the respective emotion transmitted. Variation 5 (nervous), with the exception of the trait description understanding, it received mainly anti-prototypic trait descriptions such as uncertain, stressed, not determined, not confident, inexperienced, and too young. The descriptions in variation 9 (angry with AU: 5) were also mainly leader anti-prototypic (uncertain, stressed, not confident, too expressive, scared, not serious, and not trustworthy) but had also a leader prototypic "hint" with the descriptions intelligent and honest. Regarding the combination variation 5 (nervous) and variation 10 (smiling with eyebrow raise), the statistical comparisons revealed that the participants generally perceived

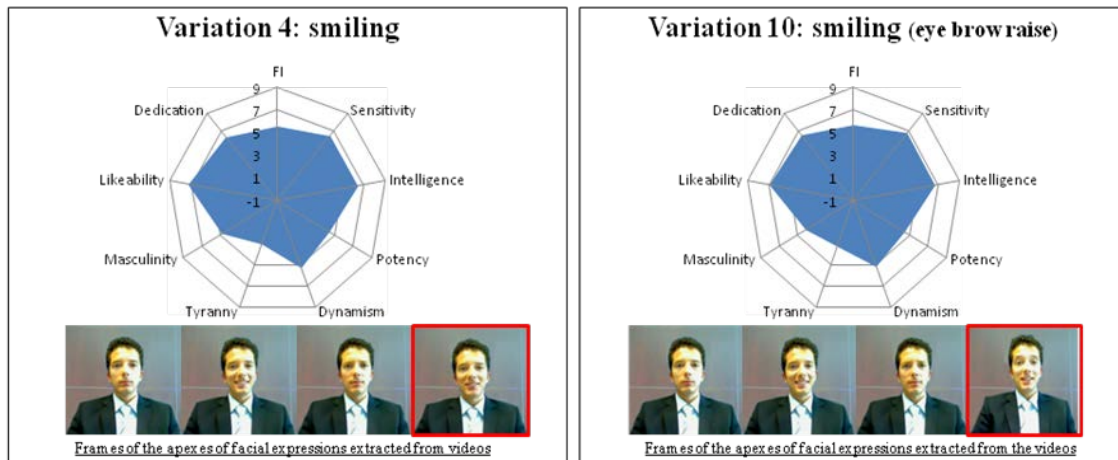
variation 10 (smiling with eyebrow raise) more favourably than variation 5 (nervous). Participants' descriptions of underlying emotions for the frames used for the manipulations revealed that the frames were perceived as expected: variation 5 (negative-nervousness); variation 10 (positive-happiness). The leader/actor in variation 10 (smiling with eyebrow raise) extracted a higher first impression score (FI) and was perceived as more intelligent, potent, dynamic, likeable, dedicated, and less tyrannical than the leader/actor in variation 5 (nervous). The "yes" and "no" percentages whether the participants considered the respective depicted actor as a potential leader or not, favoured variation 10 (smiling with eyebrow raise) over variation 5 (nervous). The qualitative analysis was also congruent with the respective emotion transmitted. Variation 5 (nervous) received mainly anti-prototypic trait descriptions such as uncertain, stressed, not determined, not confident, inexperienced, and too young. In contrast, variation 10 (smiling with eyebrow raise), received both leader prototypic (e.g. smiling, confident, and understanding) and anti-prototypic trait descriptions (stressed, uncertain).

#### 3.13.11 Comparing participants' perceptions of leadership for subtle differences between facial expressions

Besides the comparisons above, variations 9 (angry with AU: 5) and 10 (smiling with eyebrow raise) were also compared with variation 6 (angry) and variation 3 (smiling) respectively to test hypothesis 10:

Hypothesis 10: Subtle differences between facial expressions will result in differentiated leadership perceptions.

Figures 3.21 (variations 4, 10): Quantitative evaluations in leadership dimensions for each variation



Figures 3.21 show that participants’ ratings for the two variations have a very similar pattern. Table 3.20 below, shows the results of t-tests between participants’ evaluations in leadership dimensions and the first impression score (FI) for variations 4 (smiling) and 10 (smiling with eyebrow raise).

Table 3.20: Significant differences between participants’ responses in variation 4 with variation 10

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		t	df	Sig. (2-tailed)
				F	Sig.			
FI	Variation 4	5.58	1.77	0.654	0.42	-0.161	108	0.872
	Variation 10	5.63	1.94					
Sensitivity	Variation 4	6.47	1.62	0.306	0.58	-1.07	108	0.287
	Variation 10	6.78	1.42					
Intelligence	Variation 4	6.42	1.66	2.025	0.16	-1.068	108	0.288
	Variation 10							

	Variation 10	6.74	1.39					
Potency	Variation 4	4.47	1.82	0	0.99	-0.156	108	0.876
	Variation 10	4.52	1.78					
Dynamism	Variation 4	5.33	2.21	1.493	0.22	0.337	108	0.737
	Variation 10	5.19	1.97					
Tyranny	Variation 4	3.09	1.42	0.123	0.73	-0.783	108	0.435
	Variation 10	3.31	1.52					
Masculinity	Variation 4	4.81	2.15	0.235	0.63	1.616	108	0.109
	Variation 10	4.13	2.24					
Likeability	Variation 4	7.2	1.52	0.029	0.87	0.755	108	0.452
	Variation 10	6.96	1.76					
Dedication	Variation 4	6.3	1.73	0.036	0.85	-0.658	108	0.512
	Variation 10	6.52	1.68					

The t-tests reveal that there are no significant differences between the two variations in terms of perceived leader dimensions and first impression score (FI). Therefore, the quantitative analysis indicates that the two variations are perceived as statistically similar. Since any potential differences would be due to subtle differences entailed in the final facial expression of each stage, the respective descriptions from the perceived underlying emotions are discussed further. Figures 3.22 (a,b) represent participants' descriptions of underlying emotions for the static facial expression (manipulation photos) representing apexes of the video scenarios.



Figures 3.22 (a,b): Descriptions of underlying emotions for the static facial expression (manipulation photos) representing apexes of the video scenarios

(3.22.a) **“smiling” frame**



(3.22.b) **“smiling with eyebrow raise” frame**

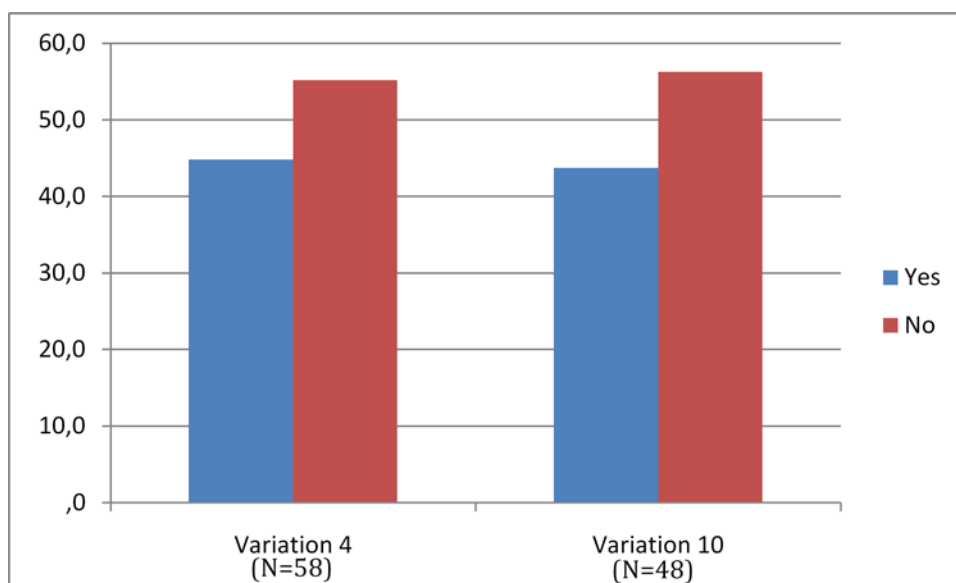


It can be seen from the data in Figures 3.22 that both frames transmit a positive emotional state with the characteristic “happy” included in both descriptions. However, the two frames seem to have subtle perceptual differences. Particularly, the “smiling” frame

tends to lean more towards satisfaction, joy, and pleasant mood. On the other hand, “smiling with eyebrow raise” frame tends to lean more towards pleasant surprise and excitement.

Proceeding with the comparisons between the two variations, Figure 2.23 represents participants’ “yes” and “no” responses in percentages regarding their acceptance of the actor as a potential leader.

Figure 3.23: Acceptance of the actor as a potential leader: “yes” and “no” percentages



The “yes” and “no” percentages for variation 4 (smiling) and variation 10 (smiling with eyebrow raise) illustrated in Figure 3.23 are very similar. To be more precise, chi squares analysis did not reveal any significant differences between variations 4 and 10 ( $\chi^2_{(1,106)} = 0.01, p=.999$ ). Participants’ responses were split closely for both variations to those who accepted the actor as a potential leader and those who did not. That shows that the facial expressions sequence did not cause a strong positive or negative leader-likeness consensus for these two variations.

Furthermore, the qualitative analysis for variation 4 (smiling) and variation 10 (smiling with eyebrow raise) is presented. Table 3.21 below, shows the most used trait descriptions

(sorted by frequency) from participants' qualitative responses grouped in "yes, he could be a leader" and "no, he could not be a leader".

Table 3.21: Most used trait descriptions (sorted by frequency) from participants' qualitative responses grouped in "yes, he could be a leader" and "no, he could not be a leader"

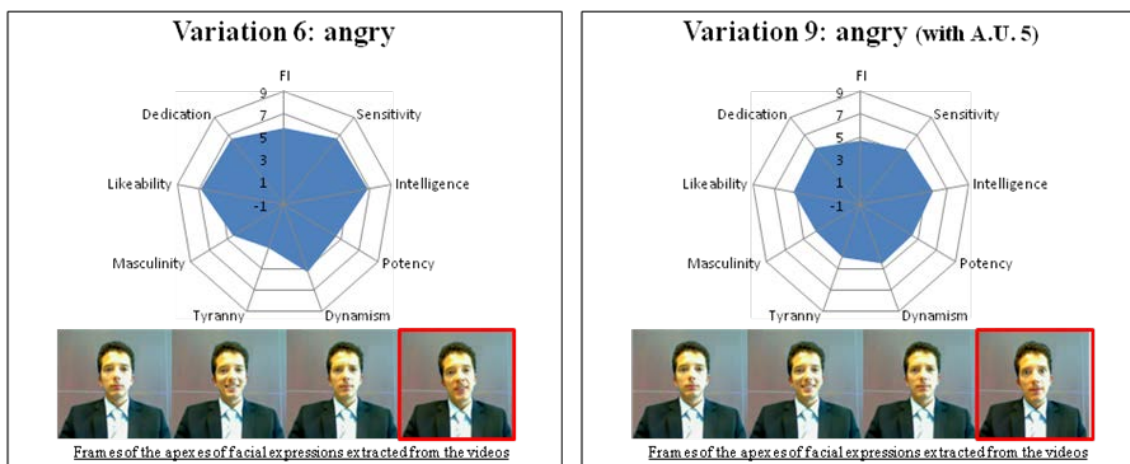
<b>Variation</b>	<b>Yes, he could be a leader</b>	<b>No, he could not be a leader</b>
	Smiling: 16	Smiling: 9
	Good listener: 9	Uncertain: 8
	Serious: 9	Too young: 7
	Confident: 9	Inexperienced: 7
Variation 4 (smiling)	Understanding: 7	Not serious: 7
	Dynamic: 6	Not confident: 6
	Approachable: 6	Pleasant: 6
	Helpful: 5	Stressed: 6
	Intelligent: 5	Not determined: 5
		Not dynamic: 5
	Smiling: 14	Not dynamic: 14
	Good listener: 8	Not confident: 10
Variation 10 (smiling with eyebrow raise)	Understanding: 6	Uncertain: 11
	Pleasant: 6	Stressed: 8
	Honest: 6	Smiling: 7
	Confident: 6	Not determined: 5
	Likeable: 5	

*Note.* Only item frequencies  $\geq 5$  are included in the tables.

Even though there were a few subtle differences, overall, the two variations received similar qualitative comments. The “yes”-participants in both variations saw a person who is smiling, good listener, confident, and understanding. Variation 4 (smiling) received the additional trait descriptions of intelligent, serious, helpful, and approachable, and variation 10 (smiling with eyebrow raise) received additionally the characteristics of pleasant and likeable. Regarding “no”-participants, all characteristics used to describe the leader/actor in variation 10 (e.g. not dynamic, not confident) were also included in variation 4 along with others (e.g. too young, not serious).

The next comparisons testing hypothesis 10 are the ones of variation 6 (angry) with variation 9 (angry with AU: 5). Figures 3.24 (variations 6, 9) represent the participants’ quantitative evaluations of the two variations in the leader dimensions.

Figure 3.24 (variations 6,9): Participants’ perceptions of leadership in variation 6 with variation 9



The two figures above show that variation 6 (angry) was perceived more favourably than variation 9 (angry with AU: 5). Table 3.22 below, shows the results of t-tests between the participants evaluations in leadership dimensions and the first impression score (FI) for variation 6 (angry) and variation 9 (angry with AU: 5).


Table 3.22: Significant differences between participants' responses in variation 6 (angry) with variation 9 (angry with AU: 5)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		T	df	Sig. (2-tailed)
				F	Sig.			
FI	Variation 6	5.74	1.85	0.001	0.97	2.991	107	0.003
	Variation 9	4.66	1.89					
Sensitivity	Variation 6	6.59	1.29	10.68	0	3.893	107	0.000
	Variation 9	5.37	1.87					
Intelligence	Variation 6	6.86	1.38	6.147	0.02	3.557	107	0.001
	Variation 9	5.67	1.98					
Potency	Variation 6	4.56	1.68	1.448	0.23	0.437	107	0.663
	Variation 9	4.4	2.01					
Dynamism	Variation 6	5.34	2.08	2.283	0.13	1.778	107	0.078
	Variation 9	4.56	2.41					
Tyranny	Variation 6	3.08	1.37	0.944	0.33	-3.11	107	0.002
	Variation 9	3.99	1.63					
Masculinity	Variation 6	4.46	2.11	1.286	0.26	1.621	107	0.108
	Variation 9	3.79	2.19					
Likeability	Variation 6	6.83	1.40	11.85	0	4.3	107	0.000
	Variation 9	5.29	2.17					
Dedication	Variation 6	6.57	1.67	4.855	0.03	2.904	107	0.004
	Variation 9	5.53	2.01					

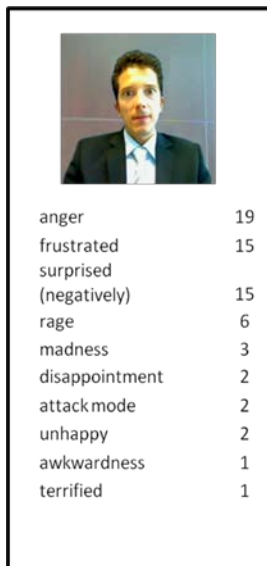
The t-tests show that there are highly significant differences between the two variations in the majority of leader dimensions plus the first impression score (FI). Variation 6 (angry) is perceived as significantly more sensitive, intelligent, likeable, dedicated, less tyrannical, and received a higher first impression rating (FI) than variation 9 (angry with AU: 5). The respective descriptions of perceived underlying emotions are presented, and Figures 3.25 (a,b) represent participants' descriptions of underlying emotions for the static facial expression (manipulation photos) representing apexes of the video scenarios.

Figures 3.25 (a,b): Descriptions of underlying emotions for the static facial expression representing apexes of the video scenarios

(3.25.a) **“angry” frame**

	
bored	6
ironic	5
tired	5
frustration	4
angry	3
wondering	3
confused	2
discomfort	2
disappointment	2
disagreement	2
listens carefully	2
pondering	2
relief	2
thinking	2

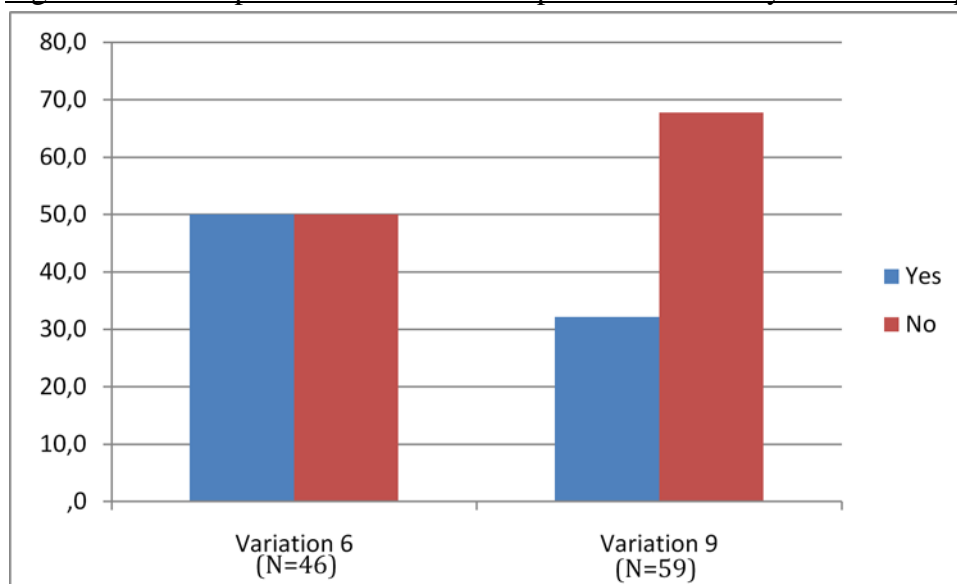
(3.25.b) “angry with AU: 5” frame



As can be seen from the Figures 3.25, the two frames are perceived very differently. Specifically, “angry with AU: 5” frame’s comments convert to trait descriptions which reveal anger and frustration. In contrast, “angry” appears to be relatively vague in emotional meaning, receiving different trait descriptions (some negative and some positive). In other words, the “angry” frame was found to transmit mixed signals rather than anger.

Proceeding with the comparisons between the two variations, Figure 3.26 represents participants’ “yes” and “no” responses, in percentages, regarding their acceptance of the actor as a potential leader.

Figure 3.26: Acceptance of the actor as a potential leader: “yes” and “no” percentages



The “yes” and “no” percentages for variation 6 (angry) and variation 9 (angry with AU: 5), illustrated in Figure 3.26, seem to be different. However, this difference was not statistically significant, although it was close to being so for significance level  $p=.05$ . To be more precise, chi squares analysis did not reveal any significant differences between variations 6 and 9 ( $\chi^2_{(1,105)} = 3.477, p=0.062$ ). The qualitative analysis for variation 6 (angry) and variation 9 (angry with AU: 5) is presented in Table 3.23 below, and shows the most used trait descriptions (sorted by frequency) from participants’ qualitative responses grouped in “yes, he could be a leader” and “no, he could not be a leader”.

Table 3.23: Most used trait descriptions (sorted by frequency) from participants’ qualitative responses grouped in “yes, he could be a leader” and “no, he could not be a leader”

Variation	Yes, he could be a leader	No, he could not be a leader
Variation 6	Smiling: 12	Uncertain: 9



(angry)	Good listener: 11	Not confident: 8
	Confident: 7	Not determined: 8
	Pleasant: 6	Not dynamic: 8
	Serious: 6	Too young: 5
	Determined: 6	
	Gives solutions: 6	
	Understanding: 6	
	Helpful: 5	
	Honest: 5	
	Intelligent: 6	Uncertain: 10
Honest: 5	Stressed: 9	
Variation 9		Not confident: 8
(angry with		Too expressive: 7
AU: 5)		Scared: 6
		Not serious: 6
		Not trustworthy: 5

---

*Note.* Only item frequencies  $\geq 5$  are included in the tables.

The two variations received very different qualitative comments. The “yes”-participants in variation 9 (angry with AU: 5) described the actor as intelligent and honest while in variation 6 (angry) they used traits from several leader dimensions such as “dynamism” (confident, determined), “sensitivity” (understanding, helpful, honest) and “likeability” (smiling). The “no”-participants in variation 6 (angry) referred to lack of “dynamism” (not determined, not confident, not dynamic), uncertainty, and youth/immaturity. The lack of dynamism was not as intense in variation 9 (angry with AU: 5) in which the participants also

described the actor as uncertain but additionally as stressed, not confident, too expressive, scared, not serious, and not trustworthy.

### 3.13.12 Summary: Additional manipulations and comparisons

The results showed that variation 8 (physiognomy) was perceived relatively low in terms of leadership dimensions and first impression (FI). Adding to the neutral face (physiognomy) two photos with facial expression (“happy” frame and “pondering” frame, see figures 3.15) created variation 7 (basic). The latter variation was perceived as more favourable than variation 8 (physiognomy) in some dimensions (masculinity and likeability), and evoked more affirmative than negative responses to the question of whether or not the actor could be considered as a leader. Additionally, the qualitative comments revealed that participants considered the actor in variation 8 (physiognomy) to possess more leader anti-prototypic characteristics (increased tyranny, decreased likeability). On the contrary, variation 7 (basic) was perceived as less tyrannical and more smiling. The above results indicate that the participants preferred a more expressive leader (variation 7) over a neutral one (variation 8).

The statistical comparisons revealed that participants generally perceived variation 10 (smiling with eyebrow raise) more favourably than variation 9 (angry with AU: 5). Participants’ descriptions of underlying emotions for the frames used for the manipulations revealed that the manipulations’ still-frames were perceived as expected: variation 9 (negative-intense anger); variation 10 (positive-happiness). Even though the “yes” and “no” percentages whether the participants considered the respective depicted actor as a potential leader or not, did not favour variation 10 (smiling with eyebrow raise) over variation 9 (angry with AU: 5), the leader/actor in variation 10 (smiling with eyebrow raise) extracted a higher first impression score (FI) and was perceived as more sensitive, intelligent, dedicated, likeable and less tyrannical than the leader/actor in variation 9 (angry with AU: 5). Finally,

the qualitative analysis was also congruent with the respective emotion transmitted. Variation 10 (smiling with eyebrow raise), received both leader prototypic (e.g. smiling, confident, and understanding) and anti-prototypic trait descriptions (stressed, uncertain), while variation 9 (angry with AU: 5) received mostly anti-prototypic trait descriptions (e.g. not dynamic, not confident, uncertain, and stressed). The comparisons of variations 9 and 10 with variation 5 revealed significant differences. Specifically, the participants perceived variation 5 (nervous) differently, but not more leader-like, than variation 9 (angry with AU: 5). Regarding the combination variation 5 (nervous) and variation 10 (smiling with eyebrow raise), the statistical comparisons revealed that the participants generally perceived variation 10 (smiling with eyebrow raise) more favourably than variation 5 (nervous).

Examining the perceptual effect of subtle differences between facial expressions, quantitative analysis showed that variation 4 (smiling) and variation 10 (smiling with eyebrow raise) were perceived as statistically similar. Participants' descriptions of underlying emotions for the frames used for the manipulations revealed that the two sequences were seen as very much alike: variation 4 (happy, joy, pleasant mood); variation 10 (pleasant surprise, happy, and excitement). Furthermore, the "yes" and "no" percentages for participants' acceptance of the actor as a potential leader were also very similar (both split the sample almost in half). The qualitative analysis also reinforced the previous results showing that variation 4 (smiling) and variation 10 (smiling with eyebrow raise) received overall similar qualitative comments. Particularly, the two variations received both leader prototypic (e.g. smiling, good listener, confident, and understanding) and anti-prototypic trait descriptions (stressed, uncertain, not dynamic, not confident).

Even though the first pair of variations (4 with 10) compared did not differ significantly, the second pair of variations (6 with 9) did. The statistical comparisons revealed that the leader/actor in variation 6 (angry) was perceived as significantly more sensitive,

intelligent, likeable and dedicated, less tyrannical, and received a higher first impression rating (FI) than in variation 9 (angry with AU: 5). Participants' descriptions of underlying emotions for the frames used for the manipulations revealed that the frames were not perceived as expected for variation 6 but were perceived as expected for variation 9: variation 6 (vague-mixed signals); variation 9 (negative-intense anger). The “yes” and “no” percentages for variation 6 (angry) and variation 9 (angry with AU: 5) did not differ significantly from each other. Finally, the qualitative analysis showed that the two variations received very different comments. Variation 6 (angry) received both leader prototypic (e.g. confident, determined, understanding, helpful, honest, and smiling) and anti-prototypic trait descriptions (not determined, not confident, not dynamic, uncertain, and too young), while variation 9 (angry with AU: 5) received mostly anti-prototypic trait descriptions (e.g. not dynamic, not confident, not determined uncertain, stressed).

### 3.13.13 Discussion of study 5

Study 5 used photos extracted from the videos of study 4 with some additional manipulations. The specific design extended on the range of results produced by the previous study (study 4) by enabling comparisons between (A) static facial expressions (B) static and dynamic facial expressions and (C) subtle differences in leadership perception evoked by the facial expressions.

#### *3.13.13.1 Comparisons of participants' leadership perceptions from static facial expressions extracted from the respective videos*

Two hypotheses were tested in this section of study 5. In hypothesis 8, it was assumed that substituting one facial expression from a sequence with another facial expression indicating a different emotional state would give different perceptions of the observed leader. The data

partially supported the hypothesis. Even though participants' perceptions regarding variations 4 (smiling) and variation 5 (nervous) supported the hypothesis, participants' perceptions regarding variation 6 (angry) did not support the hypothesis. Particularly, leadership perceptions for variation 6 (angry) appeared to be statistically similar to variation 4 (smiling) and dissimilar to variation 5 (nervous). This was an unexpected result because the results of dynamic facial expressions (study 4) revealed a pronounced dissimilarity between the angry variation and the smiling one (see section 3.10.3). In hypothesis 6, it was assumed that participants would evaluate positive expressions (expressions with indicators of happiness, e.g. smiling) higher in leadership perception than negative ones (expressions with indicators of anger, or sadness, e.g. eyebrow lowering and pulling together or eyebrow raising and pulling together). The leader-likeness indicators showed that, again, variations 4 (smiling) and 5 (nervous) supported the hypothesis in contrast with variation 6 (angry). Specifically, variations 4 (smiling) and 6 (angry) were perceived as more leader-like than variation 5 (nervous). The results reported in this paragraph show that variation 6 (angry) was perceived much more positively than one would expect after the results of study 4 (see results for dynamic variation of angry, see Figures 3.4). The descriptions of the frames' underlying emotions helped in interpreting these findings. The "smiling" frame used for variation 4 (smiling) and the "nervous" frame used for variation 5 (nervous) were found to transmit positive and negative emotions respectively. In contrast, the "angry" frame used in variation 6 (angry) was found to send mixed signals. The unexpected results of the static-angry condition show the importance of what is perceived from a facial expression rather than what is displayed. Even though variation 6 (angry) was created by using the apexes of static frames from the video variation 3 (angry), the participants did not see the anger nearly as clearly as they did in the latter.

The findings for the static-angry condition (variation 6) suggested a non-congruency between the sequences of static facial expressions and the equivalent videos. In the following section, the results of comparisons between the dynamic and static facial expressions are discussed.

### *3.13.13.2 Comparing leadership perceptions from the dynamic versions of facial expressions with their respective static variations*

In hypothesis 9, it was assumed that the results would reveal significant differences between the participants' perceptions of the leader's dynamic facial expressions and his respective static facial expressions. Even though both static and dynamic stimuli represented the same facial expressions, the participants' leadership perceptions revealed significant differences. Specifically, the data analysis supported the hypothesis (H9), with participants favouring the static facial expression variations over the dynamic facial expression variations (see section 3.13.7). These findings are important because they reveal potential differences in the messages conveyed by equivalent dynamic and static facial expressions.

### *3.13.13.3 Additional manipulations and comparisons*

Variation 7 (basic) and 8 (physiognomy) gave some additional information about how the participants perceived the actor in the specific context. The findings indicated that the actor's physiognomy (variation 8) was perceived in moderate levels of leader-likeness. Adding to the neutral frame (variation 8, physiognomy) the "happy" frame and the "pondering" frame (see figures 3.15) created variation 7 (basic). Comparing the two variations with each other revealed that variation 7 (basic) was preferred over variation 8 (physiognomy). Specifically, participants perceived (variation 7) as to be more likeable and masculine but not more leader-like over a neutral one (variation 8).

The design included two more variations, variation 10 (smiling with eyebrow raise) and variation 9 (angry with AU: 5). The former was generally perceived more favourably than the latter, confirming once again that: the facial expression manipulation was responsible for the perceptions of the observed leader (H8), and that participants prefer positive expressions to negative ones (H6). What is more, further testing of hypothesis 6 and 8 was achieved by comparing variations 9 and 10 with variation 5. The participants perceived variation 5 (nervous) differently, but not more leader-like, than variation 9 (angry with AU: 5) and differently, and less leader-like than variation 10 (smiling with eyebrow raise). The findings of the last paragraphs reinforced the argument so far, that facial expressions can significantly influence leadership perceptions. Specifically, they showed that the facial expression manipulations were responsible for the changes in leadership perceptions. In addition, the majority of the variations indicated that the participants preferred the variations with indicators of positive expression rather than negative expression.

Variations 9 (angry with AU: 5) and 10 (smiling with eyebrow raise) were also compared with variations 6 (angry) and 4 (smiling) to test the perceptual effect of subtle differences between facial expressions (H10). While variations 4 (smiling) and 10 (smiling with eyebrow raise) were very much alike, variations 6 (angry) and 9 (angry with AU: 5) were very different. The results for the underlying emotions of the manipulations frames used in each variation helped giving an explanation for the latter. The two smiling frames (“smiling” and “smiling with eyebrow raise”) were both perceived similarly as a sign of positive affect. In contrast, the two angry frames (“angry” and “angry with AU: 5”) were not perceived similarly. Particularly, while the “angry with AU: 5” frame was perceived as angry, the “angry” frame, as reviewed earlier (see Figures 3.25), was vague in meaning. These findings suggest that subtle changes in facial muscles may resolve vagueness regarding the underlying emotional state of a facial expression.

### *Further data analysis*

The following section uses data from the three studies of phase 2 to examine (a) gender differences, and (b) ILTs match with perceptions from facial expressions.

#### **3.14 Gender differences**

Sczesny (2005) proposes that gender must be taken into consideration when investigating leadership because it comprises a social interaction bias. Research suggests that gender expectations and leadership expectations interact to differentiate reactions to male and female leaders (Eagly & Karau, 2002; Powell, Butterfield, & Parent, 2002; Schein, Mueller, Lituchy, & Liu, 1996). Female stereotypes include descriptions such as sensitive, helpful, gentle, and emotional. Male stereotypes, on the other hand, include descriptions such as aggressive, assertive, ambitious, confident (Duehr & Bono, 2006; Sczesny, 2005). Especially regarding ILTs, even though prior research supports gender generalisability (Nye & Forsyth, 1991; Offermann et al., 1994), other studies have found significant differences between male and female participants' ILTs (Deal & Stevenson, 1998; Den Hartog & Koopman, 2005; Epitropaki & Martin, 2004). Epitropaki and Martin (2004) findings, for example, showed that female participants prefer their leaders to be more “understanding, sincere, and honest and less domineering, pushy, and manipulative than men” (p.302). Thus:

Hypothesis 11: Implicit leadership theories (ILTs) will show significant differences between men and women.

Besides gender differences regarding ILTs there are also gender differences regarding emotional expression such as expressiveness, smiling, nonverbal transmission accuracy, decoding, and nonverbal interpretation accuracy (Biele & Grabowska, 2006; Edwards, 1998;



Hall, 2006; Hall, Carter, & Horgan, 2000; LaFrance, Hecht, & Levy Paluck, 2003; McClure, 2000). Especially on decoding emotional displays, studies have shown that there are fundamental differences in the ways men and women perceive (Rosip & Hall, 2004; van Beek & Dubas, 2008). Consequently, when viewing facial expressions men and women are expected to demonstrate different leadership perceptions. Taking into consideration all of the above, I assume:

Hypothesis 12: Leadership perceptions formed from facial expressions will show significant differences between men and women.

In this part, the results regarding gender differences are presented separately for the ILTs (questionnaire part “A”, studies 3, 4, and 5), for the manipulations of study 3 (variations 1-4), and for the manipulations of study 4 and 5 (variations 1-10).

### 3.15 Results

#### 3.15.1 ILTs and gender

Examining gender differences regarding participants’ ILTs for studies 3, 4, and 5, Table 3.24 below, shows the results of t-tests between participants’ evaluations in the eight leadership dimensions.

Table 3.24: Significant differences between men and women for ILTs

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		t	df	Sig. (2-tailed)
				F	Sig.			
	Males	6.72	1.19					

Sensitivity	Females	6.99	1.04	7.001	0.01	-3.33	807	0.001
	Males	7.98	0.85					
Intelligence	Females	8.30	0.77	3.03	0.08	-5.57	807	0.000
	Males	6.16	1.36					
Potency	Females	6.33	1.47	1.142	0.29	-1.6	807	0.11
	Males	8.09	0.74					
Dynamism	Females	8.34	0.66	4.226	0.04	-5.04	807	0.000
	Males	2.70	1.23					
Tyranny	Females	2.44	1.18	4.2	0.04	3.077	807	0.002
	Males	4.27	2.07					
Masculinity	Females	3.10	1.77	17.27	0	8.531	807	0.000
	Males	7.14	1.28					
Likeability	Females	7.46	1.26	0.397	0.53	-3.49	807	0.001
	Males	7.81	1.05					
Dedication	Females	8.16	0.86	10.26	0	-5.22	807	0.000

It is apparent from this table that there are significant gender differences in all dimensions of ILTs except for potency. Female participants provided significantly higher ratings to dimensions of sensitivity, intelligence, dynamism, likeability, and dedication, while male participants provided significantly higher ratings to dimensions of tyranny and masculinity.

Because of the high number of variations included in studies 3, 4 and 5 (14 variations in total), only tables with statistical comparisons that showed significant differences are going to

be presented. However, all tables containing the t-tests for gender statistical comparisons can be found in the appendix U. Given that in this analysis I performed several t-tests (n=126), instead of using a significance level of .05, I am using a significance level of .01 to account for the fact that, when carrying out multiple t-tests, some of them can be statistically significant just by mere chance (Shavelson, 1996).

### 3.15.2 Gender differences: Study 3

Gender differences regarding leader dimensions and the first impressions score (FI) for the four variations of study 3 are discussed. The t-tests did not reveal any gender differences for variations 1 (the standard) and 2 (reversing the order of 1), and 3 (changing the order of 1) of study 3 (see appendix U). In contrast, the remaining variation revealed gender differences. Table 3.25 shows the t-tests between participants' evaluations in the eight leadership dimensions and the first impression score (FI) for variations 3 (changing the order of 1) and 4 (replacing the “weak” photo).

Table 3.25: Significant differences between men and women for study 3 (variation 4: replacing the “weak” photo)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		t	df	Sig. (2-tailed)
				F	Sig.			
FI	Males	6.05	1.60	0.37	0.546	1.899	42	0.065
	Females	5.08	1.74					
Sensitivity	Males	5.62	1.91	0.621	0.435	1.386	42	0.173
	Females	4.83	1.85					
	Males	6.33	1.72					

Intelligence	Females	5.95	1.44	0.053	0.819	0.795	42	0.431
	Males	5.61	1.45					
Potency	Females	4.72	1.22	0.161	0.69	2.194	42	0.034
	Males	6.2	1.96					
Dynamism	Females	5.49	1.81	0.409	0.526	1.246	42	0.22
	Males	5.16	1.60					
Tyranny	Females	5.31	1.48	0.051	0.823	-0.328	42	0.745
	Males	5.9	1.58					
Masculinity	Females	4.66	1.38	1.212	0.277	2.75	42	0.009
	Males	5.62	1.98					
Likeability	Females	4.60	2.35	0.817	0.371	1.534	42	0.133
	Males	6.18	1.71					
Dedication	Females	5.54	1.76	0.015	0.905	1.216	42	0.231
	Males							

As shown in Table 3.25, in variation 4 (replacing the “weak” photo) significant gender differences appeared in one leader dimension. Particularly, the variation where an eyebrow raising and pulling together photo was replaced with a frowning and staring photo (variation 4) received significantly higher ratings by men in dimension of masculinity.

### 3.15.3 Gender differences: Studies 4 and 5

Gender differences regarding leader dimensions and the first impressions score (FI) for the ten variations of studies 4 and 5 are discussed. The t-tests did not reveal any gender differences for variations 1 (dynamic-smiling), 2 (dynamic-nervous), 3 (dynamic-angry), 4

(static-smiling), 5 (static-nervous), 6 (static-angry), 7 (basic), 8 (physiognomy) and 10 (smiling with eyebrow raise) of studies 4 and 5 (see appendix U). Table 3.26, shows the t-tests between participants' evaluations in the eight leadership dimensions and the first impression score (FI) for variation 9 (angry with AU: 5).

Table 3.26: Significant differences between men and women for studies 4 and 5 (variation 9: angry with AU: 5)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		t	df	Sig. (2-tailed)
				F	Sig.			
FI	Males	5.35	1.9	0.12	0.73	2.05	57	0.045
	Females	4.31	1.82					
Sensitivity	Males	6.29	1.52	0.96	0.33	2.866	57	0.006
	Females	4.9	1.88					
Intelligence	Males	6.31	1.62	3.8	0.06	1.82	57	0.074
	Females	5.34	2.08					
Potency	Males	5.26	1.65	1.27	0.27	2.441	57	0.018
	Females	3.96	2.07					
Dynamism	Males	5.56	2.43	0.16	0.69	2.362	57	0.022
	Females	4.05	2.27					
Tyranny	Males	4.11	1.6	0.11	0.75	0.39	57	0.698
	Females	3.93	1.67					
Masculinity	Males	4.53	1.91	3.57	0.06	1.892	57	0.064
	Females	3.41	2.25					

Likeability	Males	5.63	1.95	0.89	0.35	0.849	57	0.4
	Females	5.12	2.29					
Dedication	Males	5.9	1.77	2.28	0.14	1.006	57	0.319
	Females	5.34	2.13					

An overall observation is that there are far fewer gender differences in the 10 variations than would be expected from the results of gender differences in participants' ILTs. Results, again as in study 3, were found for the manipulation which involved an intense negative expression (variation 9; the anger with A.U.: 5). Males evaluated the actor significantly higher in sensitivity than females. The rest of the variations revealed no gender differences.

#### 3.15.4 Discussion: Gender differences

In hypothesis 11 it was assumed that ILTs would show significant differences between male and female participants. There were significant gender differences in almost every leader dimension except potency. Women rated leader prototypic dimensions such as sensitivity, intelligence, dynamism, likeability and dedication significantly higher than men. On the other hand, men rated leader anti-prototypic dimensions such as tyranny and masculinity significantly higher than women.

Examining the results on gender differences in the several variations of studies 3, 4 and 5 (H12) produced considerably fewer effects than for the ILTs. For the majority of variations (12 out of 14), there were no gender differences. The gender effects were found for variation 4 of study 3 (replacing the "weak" photo), and variation 9 of study 5 (angry with AU: 5). Variations 4 (study 3) and 9 (study 5) included a facial expression with intense indicators of anger (see appendix C4, and C7 respectively). Interestingly, men revealed more favourable

perceptions towards the two variations than women. Generally, these results show that albeit participants ILTs showed pronounced gender differences, their reactions to actual leaders' facial displays revealed gender differences only in cases where the leader used expressions with indicators of intense anger.

### **3.16 ILTs match with perceptions from facial expressions**

The final part of chapter III investigates a central concept for the current thesis. As mentioned in earlier chapters, the research model holds that when people interact with someone whose facial expressions suggest traits which match their ILTs prototype filter, that person is categorised as a "leader". Confirming such a relationship is important because it would imply that beholders' ILTs are used in the perception of actual leaders. The respective hypothesis is restated below:

Hypothesis 1: When trait inferences from an actor's facial expressions match the participants' ILTs, the actor will be perceived as more leader-like than when there is a mismatch.

Despite the significance of the above relationship to the specific thesis, it was not tested statistically so far. That matter is directly addressed in the next section.

### **3.17 Results**

To test hypothesis 1 a two-stage procedure was applied: (A) the match between participants' ILTs and their evaluations of the depicted leader/actor in leadership dimensions was calculated, and then (B) it was compared with the leader-likeness indicators to see if the actor was perceived as more leader-like when trait inferences from the actor's facial expressions matched the participants' ILTs. Concerning (A), the statistical test used to measure the match

between participants' ILTs and their evaluations of the depicted leader/actor in leadership dimensions was the Pearson correlation. Pearson correlations were calculated between the trait inferences in the eight leader dimensions, after observing facial expressions and the respective participants' ILTs in these exact leader dimensions (e.g. Pearson correlation [sensitivity-smiling with sensitivity-ILTs], Pearson correlation [intelligence-smiling with intelligence-ILTs], etc). Average Pearson correlations for the eight dimensions were used to extract the overall match for each variation. As regards (B), the two indicators of variations' leader-likeness were: (1) the first impression score (FI) and (2) participants "yes" or "no" responses whether or not they would consider the actor as a leader.

In the current section, the four variations of study 3 are tested first, followed by the 10 variations of studies 4 and 5. Table 3.27 below shows, for the four variations of study 3, the results of Pearson correlations between ILTs dimensions with the respective leader-actor evaluations from the facial expression conditions (sorted by better match).

Table 3.27: Pearson correlations between ILTs dimensions and the respective leader-actor evaluations from the facial expression conditions of study 3 (sorted by better match)

<b>Variation number</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Variation label		<u>The standard</u>	<u>Reversing the order of 1</u>	<u>Changing the order of 1</u>	<u>Replacing the "weak" photo</u>
Pearson correlations: ILTs with trait inferences from facial expressions	Sensitivity	0.26	0.11	0.11	-0.09
	Intelligence	0.36*	0.06	0.09	0.05
	Potency	0.27	0.35	0.28	-0.03
	Dynamism	0.35*	0.05	0.09	-0.14
	Tyranny	0.48**	0.54**	-0.04	0.03
	Masculinity	0.06	0.11	0.31	0.00
	Likeability	0.33*	-0.04	0.23	-0.21
	Dedication	0.21*	0.27	0.22	0.05
<b>Average of Pearson correlations per variation</b>		<b>0.288</b>	<b>0.179</b>	<b>0.161</b>	<b>-0.042</b>



<b>Leader- likeness indicators</b>	<b>Yes/No responses</b>	<b>Yes: 39.47%</b>	<b>Yes: 44.44%</b>	<b>Yes: 46.87%</b>	<b>Yes: 48.78%</b>
		<b>No: 60.52%</b>	<b>No: 55.55%</b>	<b>No: 53.12%</b>	<b>No: 51.21%</b>
	<b>First impression score</b>	<b>5.67</b>	<b>5.24</b>	<b>5.67</b>	<b>5.52</b>

*Note.* \*\*. Correlation is significant at the 0.01 level; \*. Correlation is significant at the 0.05 level

Because of the similarity between the four variations in terms of the two indicators mentioned above (first impression score (FI) and “yes” or “no” responses), the criterion leader-likeness was not very helpful in making comparisons. However, discussion of the results was still possible due to the variations’ differences in the match between ILTs, and the evaluations from the facial expression manipulations. According to hypothesis 1, one would expect better indicators of leader-likeness for the variation which was a better match than the remaining three variations. However, that was not the case. Variation 1 (the standard) which was the better match of ILTs with reactions from facial expressions had the worst “yes”-“no” ratio. Variations 2 and 3 scored similarly in both leadership perception indicators and the match of ILTs with reactions from facial expressions. Finally, variation 4 would be expected to have a better ILTs match since leader-likeness indicators were similar to the ones of the two previous variations. Instead, variation 4 was a very low match. To summarise, study 3 had only four variations to compare and because of the similarities in the indicators of first impression score (FI) and “yes” or “no” participants’ responses, the analysis was, up to a point, constrained. However, to further test hypothesis 1, the same procedure was followed for variations (1-10) of studies 4 and 5.

Studies 4 and 5 included 10 variations of one actor, in the same scenario, with different facial expression manipulations. Table 3.28 below, shows for the ten variations of studies’ 4 and 5, the results of Pearson correlations between ILTs dimensions with the respective leader/actor evaluations from the facial expression conditions (sorted by better match).

Table 3.28: Pearson correlations between ILTs dimensions and the respective leader-actor evaluations from the facial expression conditions of study 4 and 5 (sorted by better match)

Variation number	6	1	10	4	5	9	8	7	2	3	
Variation label	<u>Angry</u> (photo)	<u>Smiling</u> (video)	<u>Smiling</u> (eye brow raise)	<u>Smiling</u> (photo)	<u>Nervous</u> (photo)	<u>Angry</u> with (A.U. 5: photo)	<u>Physiognomy</u> (photo)	<u>Basic</u> (photos)	<u>Nervous</u> (video)	<u>Angry</u> (video)	
Pearson correlations: ILT's with trait inferences from facial expressions	Sensitivity	0.30*	0.33**	0.24	0.30*	-0.28	-0.02	0.10	0.09	0.07	-0.08
	Intelligence	0.01	0.06	-0.02	0.26	0.08	0.06	-0.20	-0.02	0.10	-0.19
	Potency	0.40**	0.41**	0.32*	0.32*	0.01	0.20	0.29*	0.09	0.01	0.08
	Dynamism	-0.09	-0.04	-0.26	-0.09	0.06	0.12	-0.03	-0.03	-0.05	-0.05
	Tyranny	0.46**	0.37**	0.51**	0.23	0.36*	0.05	0.27	0.16	0.03	-0.08
	Masculinity	0.42**	0.15	0.30*	0.09	0.20	0.31*	0.22	-0.09	0.00	0.10
	Likeability	0.06	0.29*	0.27	0.14	0.27	0.10	0.10	-0.18	-0.06	-0.08
	Dedication	0.32*	0.16	-0.02	-0.18	0.21	0.03	0.05	0.22	0.14	-0.21
<b>Average of Pearson correlations per variation</b>	<b>0.234</b>	<b>0.215</b>	<b>0.167</b>	<b>0.135</b>	<b>0.112</b>	<b>0.106</b>	<b>0.102</b>	<b>0.032</b>	<b>0.030</b>	<b>-0.062</b>	
<b>Leader-likeness indicators</b>	<b>Yes/No responses</b>	Yes: 50%	Yes: 35.2%	Yes: 43.7%	Yes: 44.8%	Yes: 8.5%	Yes: 32.2%	Yes: 49.0%	Yes: 12.1%	Yes: 9.1%	
		No: 50%	No: 64.8%	No: 56.3%	No: 55.2%	No: 91.5%	No: 67.8%	No: 51.0%	No: 87.9%	No: 90.9%	
	<b>First impression score</b>	<b>5.74</b>	<b>5.62</b>	<b>5.63</b>	<b>5.58</b>	<b>4.35</b>	<b>4.66</b>	<b>5.41</b>	<b>5.52</b>	<b>3.78</b>	<b>3.77</b>

Note. \*\*. Correlation is significant at the 0.01 level; \*. Correlation is significant at the 0.05 level

As can be seen from the data in the table above, hypothesis 1 is partially supported. Even though the ranking structure is neither clear nor strict, grouping the variations according to the criteria discussed so far helps to make sense of the results. To begin with, the first group consists of variations 6, 1, 10, and 4. In that group the match of ILTs with reactions from facial expressions is the highest ( $r > 0.13$ ). Furthermore, it has the highest first impression scores averages (FI range: 5.57-5.74) and four out of five highest “yes”-“no” ratios. Variations 5, 9, and 8 form a different group, which falls in the middle with respect to matching of ILTs with reactions from facial expressions ( $0.12 > r > 0.10$ ). In that group, the FI scores (FI range: 4.35-5.41) are relatively lower, and the “yes”-“no” ratios are considerably poorer. Finally, variations 7, 2 and 3 form a third group, which is the lowest regarding matches of ILTs with reactions from facial expressions ( $r < 0.04$ ). That group has two out of the three lowest first impression scores and “yes”-“no” ratios. The single most striking observation to emerge from the data was variation 7 (the basic) which was in the low matching group but received a relatively high first impression score (FI: 5.51) and “yes”-“no” ratio.

### 3.17.1 Discussion: ILTs match with perceptions from facial expressions

The results show that a match between participants’ ILTs with their reactions from the actor’s facial expressions might frequently be an indicator of whether or not he is perceived as a leader, but that is not a rule. The four variations of study 3 could not be differentiated clearly from each other due to the high similarity in indicators of leader-likeability. However two out of four variations showed a tendency not to support the hypothesis. On the other hand, the ten variations of studies 4 and 5 generally supported the hypothesis, with the exception of one variation of which the match was not as congruent as expected with the indicators of leader-likeness. Overall, these findings are important for the current research because they reveal a

tendency of observers' ILTs to be involved in the perception of actual leaders' facial expressions.

### **3.18 General discussion of studies 3 to 5**

The current chapter introduced phase 2 (studies 3, 4, and 5) of the research. As mentioned earlier in this thesis, phase 2 had significant advantages over phase 1, mainly regarding the credibility of the design (more statistical strength with larger samples, mixed methods, improved instruments, and employee sample from the same organisation). The studies presented in the current chapter aimed to contribute further to our knowledge about the influence of facial expressions on the perception of leadership. The findings overall reinforced the main argument posed in this thesis that facial expressions influence the perception of leadership.

In the current section, PCA was used as a method for reducing data from a sample of 807 bank employees into factors. The data reduction resulted into an eight-factor solution: “tyranny”, “sensitivity”, “dynamism”, “potency”, “intelligence”, “masculinity”, “dedication”, and “likeability”. The data reduction resulted in a factor model which has similarities with previous research in organisational settings (see factors of “sensitivity”, “intelligence”, “dedication”, “tyranny”, and “masculinity”, Epitropaki and Martin, 2004). Apart from the statistics, the descriptives revealed that the most popular leader dimensions were dynamism, intelligence and dedication, and the least popular were tyranny and masculinity. The latter findings were not surprising, since the participants in studies 1 and 2 revealed similar preferences (see 2.6.1 and 2.9.1 respectively).

Study 3 used photo-sequences of facial expressions to investigate (A) order effects by changing the sequence of certain facial expressions, and (B) influences of facial expressions on leadership perception when replacing a photo with another indicating a different emotional

state. The three order effect manipulations resulted in similar leadership perceptions. Consequently, Asch's (1946) order effects with trait-words could not be transferred in the research of leadership perception from facial expression. In other words, the order of facial expressions in the communicational events presented in the current study did not make a significant difference in leadership perceptions. In contrast, replacing a single photo-frame (the "weak" photo) with another indicating a different emotional state (intense anger) gave significantly different leadership perceptions. That shows that Asch's (1946) centrality effect might be transferable to leadership perceptions via facial expressions. Particularly, when replacing the "weak" photo with an "intense-anger" one, leadership perceptions were altered to "hostile" and less "soft" but without favouring one manipulation over another. This reveals that the intense anger photo caused expression-congruent trait inferences. Consequently, even though no variation was preferred by the participants, the current findings suggest that the facial expressions manipulations were responsible for altering leadership perceptions.

Study 4 used videos of a leader/actor's facial expressions in an organisational context, namely a laptop-to-laptop video conference communication with three facial expression manipulations: the "dynamic-smiling", the "dynamic-nervous", and the "dynamic-angry". These manipulations resulted in significantly different leadership perceptions (H8). Furthermore, the dynamic-smiling was seen as more leader-like than the other two variations by the participants (H6). The latter results are in agreement with prior research highlighting the significance of positive expressions in organisations (Bono & Illies, 2006; Madera & Smith, 2009). In a similar pattern to study 3, the dynamic-nervous, and the dynamic-angry were perceived differently in terms of leadership perception but similarly in terms of leader-likeness. Again, the participants did not consider the "hostile" leader as a better combination than a "softer" leader but they did perceive them differently. These findings together with the ones of study 3 reveal that participants did not consider the two negative extremes to be

appropriate for a leader. In other words, both the “hostile” and the “soft” were facial expression combinations which were far removed from what the participants would expect a leader to display in that situation.

Study 5 used photos (static facial expression) extracted from the videos (dynamic facial expression) of study 4 with some additional manipulations. A comparison of the different variations (static-smiling with static-nervous, and static-angry with static-nervous) resulted in significant differences in leadership perceptions. These findings were congruent with the results of study 4 (dynamic facial expressions) where the participants generally favoured the smiling variation over the nervous variation. Surprisingly, the results revealed a lack of a statistical difference between static-smiling and static-angry. This was opposite from the thesis assumptions (H6, H8). Particularly, low leadership evaluations were expected for the specific variations because of the indicators of negative emotion displayed (anger). However, the qualitative analysis uncovered that these indicators of anger were not clear in the static frame used (see section 3.13.7). In other words, the participants saw a facial expression which was a blend of positive and negative signals rather than an expression of anger. Consequently, the static-anger variation was seen more positively than was expected because the participants did not perceive the anger in the manipulation frame.

The comparisons between dynamic and static facial expressions overall showed that there were significant differences between participants’ perceptions of the leader/actor’s dynamic facial expressions presented in the videos and the static facial expressions presented in the photographs (H9). Particularly, the comparisons between dynamic and static facial expressions revealed that participants favoured static over dynamic facial expression conditions. This is not a surprise as a considerable amount of research present findings supporting that dynamic facial expressions are perceived differently than static facial expressions (Back, Jordan, & Thomas, 2009; Biele & Grabowska, 2006; Bould & Morris,

2008; Bould, Morris, & Wink, 2008; Kamachi, Bruce, Mukaida, Gyoba, Yoshikawa, & Akamatsu, 2001; Wehrle, Kaiser, Schmidt, & Scherer, 2000). The above findings are significant for research because they reveal that there are differences between dynamic and respective static facial stimuli which must be taken into account when studying facial expression.

Regarding the two additional variations, "static-smiling with eyebrow raise" and "static-angry with AU 5", the comparison between the two resulted in significant differences in leadership perceptions. Specifically, the findings from the comparison of "static-smiling with eyebrow raise" with "static-angry with AU 5" indicate that the manipulation of facial expression was responsible for the differences in perception of leadership (H8). Furthermore, these results point out that, participants once again preferred positive over negative facial expressions (H6). Variations 9 (static-angry with AU 5) and 10 (static-smiling with eyebrow raise) were also used to test whether subtle differences between facial expressions result in differentiated leadership perceptions (H10). "Static-smiling with eyebrow raise" was compared with "static-smiling". The results showed that these two variations did not have significant differences. The opposite was true for the comparison of "static-angry with AU 5" with "static-angry", which revealed pronounced significant differences in leadership perceptions favouring the latter. Overall, subtle differences between facial expressions resulted in differentiated leadership perceptions for one out of two combinations examined. Consequently, H10 was only partially supported. These findings indicate that even though subtle differences in facial expression may not matter in some instances (see static-smiling with static-smiling with eyebrow raise) they may play a defining perceptual role in other instances (see static-angry with static angry with AU: 5). What is argued above, is in line with previous research supporting that subtle differences between facial expressions can result in different perceptions (Ekman, Friesen, & Hager, 2002; Snodgrass, 1992; Surakka &

Hietanen, 1998). Taking into consideration all of the above, it seems that the credibility of leadership perception via facial expressions depends on the precision of the description of facial expressions (see Rosenberg, 2005).

The next hypothesis regarded gender differences of (a) ILTs and (b) perceived leader dimensions from facial expressions (H11 and H12 respectively). Gender differences were quite apparent in participants ILTs reinforcing previous research findings (Deal & Stevenson, 1998; Den Hartog & Koopman, 2005; Epitropaki & Martin, 2004). The two genders showed significant differences in the vast majority of ILTs dimensions (all except “potency”). Surprisingly, their reactions to actors’ facial expressions did not differentiate the two genders at the same level. The majority of variations had no differences at all, while others had only a few gender-stereotyped congruent reactions. These stereotyped reactions mainly concerned men perceiving manipulations with upper eye lid raiser (AU: 5), indicating high negative arousal, more favourably than women in terms of certain leader dimensions (see 3.15.4). Summarising, even though participants ILTs had significant gender differences their reactions to the leader/actor facial expressions were almost subtle. These results suggest that prototypes of leadership for the two genders (abstract) were different from their reactions when they had to evaluate actual leader’s behaviours (concrete).

Finally, hypothesis H1 tested if a match between trait inferences from leader’s facial expressions and participants’ ILTs caused the actors to be perceived as more leader-like than when there is a mismatch. The findings indicated a hypothesis-congruent pattern with the majority of the manipulations agreeing to the assumption. The latter is in agreement with Nye and Forsyth’s (1991) results which showed that a match between participants’ prototypes of leadership with the leader’s actual behaviours leads to more favourable evaluations. This shows that ILTs are (at least up to a point) used in the perception and evaluation of actual



leaders. Consequently, focusing on how observers perceive appears to be a significant factor for understanding leadership perception.

To summarise, the main research (phase 2) reinforced the notion that facial expressions have a powerful influence on the perception of leadership. The aim of the three studies presented here was to further add to our knowledge about the contribution of facial expression to the perception of leadership. In phase 2 (studies 3, 4, and 5), the feedback from phase 1 was used to refine the instruments and apply it to different research designs on a large, culturally and organisationally homogenous sample. Participants' prototypes of leadership were assessed. In addition, participants were shown photo sequences or videos of different facial expressions. Perceived leadership from the facial expressions was compared to the participants' prototypes. When the facial expressions in the studies matched the participants' prototypes, perception of leadership was higher for the majority of the cases examined. The results showed that facial expression manipulations seemed to cause significant changes in leadership perceptions. Furthermore, participants considered those facial expressions that transmitted negativity as less leader-like than the ones transmitting positive emotions. What is more, dynamic facial expressions were generally perceived differently from static facial expressions in terms of leadership perceptions. Order effects did not produce significant differences for the photo-sequences investigated. Finally, even though gender differences were found in almost all participants' ILTs dimensions, when they had to judge the facial expressions, men and women showed more agreement. In conclusion, the findings of phase 2 seem to agree with the argument posed in the previous chapter, namely that unfolding the way people perceive is crucial for understanding how leaders are perceived. In addition, on the basis of these three studies, awareness of the influence facial expressions have on people's perceptions can be a significant element in leadership emergence. The next chapter presents the general discussion of the thesis.

## *Chapter IV: General discussion*

Facial expressions appear to have a powerful influence on the perception of leadership. The purpose of the five studies presented here was to add to our knowledge of one aspect of leadership perception, that is, the role of facial expression. In order to examine the participants' prototypes of leadership, implicit leadership theories were assessed. Furthermore, facial expression stimuli (videos and pictures) were used in two research phases. Phase 1 (studies 1 and 2) used different research designs applied to different populations, to examine how leadership perceptions are formed from facial expression. In phase 2 (studies 3, 4, and 5), the feedback from phase 1 was used to refine the instruments and applied to different research designs on a large, culturally and organisationally homogenous sample.

### **4.1 Implicit leadership theories (ILTs), facial expressions, and leadership perception**

Previous theory holds that people use their expectations (ILTs) as a reference point for the evaluation of good leadership (Hall & Lord, 1995). Other research demonstrated that a match between an individual's expectations of a leader (a prototype) with the leader's actual behaviours leads to more favourable evaluations (Nye & Forsyth, 1991). What is more, Calder (1977) proposes that believing that a leader's trait produces a behaviour will result into inferring this trait if this specific behaviour is observed. The current research used Calder's (1977) seminal writings as a bridge for connecting facial expressions with leadership expectations, to propose the theoretical model of a prototype leadership filter. Particularly, the model holds that ILTs act as a comparison standard to categorise people into leaders and non-leaders. If these ILTs are met by a person's facial expressions, then that person is categorised as "leader". The results of the five studies included in this thesis imply that ILTs are used in the perception and evaluation of leaders. With respect to their ILTs, the

participants in both phases of the research found the leader qualities of dynamism, dedication, and intelligence to be most characteristic of leaders. It seems that the leadership prototype preferred for a leader in a Cypriot financial organisation comprised of a person who possesses traits such as confidence, determination, dynamism, intelligence, cleverness, dedication, and motivation. In partial accordance with Nye and Forsyth's (1991) research finding more favourable appraisals when leader's behaviours matched observers prototypes, leadership evaluations were high when facial expressions matched the participants ILTs for the majority of the cases examined. Even though the facial expression-expectation match was not as linear as hypothesised, participants' leadership expectations appeared to exert a level of influence on actual perceptions of leadership, as in many cases the participants were evaluating leaders' facial expressions on the basis of their leader prototypes (ILTs).

#### **4.2 Phase 1**

In Study 1, leadership perceptions were investigated based on basic facial actions. In Study 2, this approach was extended by using context activation in a facial expression scenario. Interestingly, the results indicated that people did not use facial expressions per se when rating leadership, but rather the personality traits which the facial expressions were implying in a specific situation. In other words, the participants went beyond simply attributing specific emotions to leader facial displays. Specifically, they used both facial expression and situational information to form trait inferences about the leaders' character (see McArthur & Baron, 1983; Montepare & Dobish, 2003; Secord, 1958; Todorov, Said, Engell, & Oosterhof, 2008; Zebrowitz & Montepare, 2008). Besides the significance of facial expression in constructing trait impressions, the latter also highlights the importance of context in the perception of leadership. The above results can be regarded as similar to Lord, Foti, and DeVader's (1984) categorisation theory of ILTs. Lord et al. (1984) maintain that ILTs exist

on different levels. Characteristics of leaders versus non-leaders are situated on the highest level. On the next level, context is used to distinguish the type of leader in question (such as business or military leader). At a lower level, criteria such as gender, age, and hierarchy are used to describe different types of leaders. These considerations together with the results of phase 1 suggest that ILTs are specific for different contexts and also that these different, more complex, ILTs are used in the perception of leadership.

The two studies used different designs to examine the relationship between ILTs and leadership perception: Study 1 placed emphasis on the “pure” perception of the face by minimising contextual information. A significant outcome was that physiognomy (i.e., a neutral face) created impressions which served as biasing filters for the rating of subsequent pictures of facial expressions. This means that the natural appearance of the face affects the way in which facial expressions are interpreted. The results of the study reinforce findings of studies on physiognomy and impression formation. Specifically, the structure of the face was found to construct general but also specific trait impressions like extraversion, dominance, consciousness, sexual availability, agreeableness, and honesty (Hassin & Trope, 2000; Todorov, Said, Engell, & Oosterhof, 2008; Zebrowitz, 1997). This is interesting for leadership research as it implies that some individuals, even without actively controlling their facial expressions to convey leadership impressions, are more likely to be evaluated and categorised as leaders. In a recent study, Antonakis and Dalgas (2009) stressed the importance of physiognomy for leader impression formation by showing pairs of pictures from election campaigns to naive adults and children. Both adults and children predicted the actual results of the election correctly from those pictures. These results are in line with the results of study 1, implying a potential bias emerging from impressions of physiognomy. The participants of study 1 and Antonakis and Dalgas’ (2009) study created a leadership

impression simply through the facial characteristics that activated trait inferences which in turn created perception biases.

Apart from the importance of physiognomy in leadership perception, facial expressions were found to be important in prior studies. For example, Keating et al. (1981; Keating et al., 1977) found that “lowered eyebrows” increased perceptions of dominance and “raised eyebrows” decreased it. From these findings it was hypothesised that lowered eyebrows would increase the perception of leadership while raised and pulled together eyebrows would decrease it. The results partially supported the latter. In study 1, the lowered eyebrows conveyed a strong but hostile look which did not match the participants’ prototypes of good leadership (ILTs). However, it still gave the actors a slightly more positive leader-like impression. The raised and pulled together brows, on the other hand, clearly decreased perceptions of leadership. They were considered to convey an oversensitive, weak character, thus creating an anti-prototypic leadership impression. Comparing the two facial actions with each other showed that the eyebrow lowering and pulling together was perceived as much more leader-like than raising and pulling together the eyebrows. Together, these examples suggest that “hard” qualities (appearing tough) constitute a better basis for leadership perception than “soft” ones (appearing sensitive). That is unsurprising, as the participants rated soft traits as less important than hard traits in the assessment of their ILTs. A possible explanation for this result might be that, first and foremost, people need to be convinced that their leader has the power to protect and provide the fundamental privilege of security. Certainly, it cannot be ruled out that this is a specific characteristic of the sample used here. At that point of the study, literature on cultural leadership dimensions of the Cypriot population would ideally be referred to, since other studies highlight the significance of culture to the perception of facial expression (Matsumoto & Ekman, 1989). However, as, to my knowledge, there is no literature so far on the Cypriot culture and leadership, I refer to

research concerning leadership in the Greek culture which is rather similar to the Cypriot culture. Broome (1996) describes the successful Greek manager as a person who takes on a paternal quality, addresses subordinates' needs by protecting, always being there, and having everything under control. The similarity with the current findings is obvious, as the participants' prototypes of a leader included someone who can provide security, and protection and who can take control. Furthermore, Papalexandris (2007) lists some characteristics of successful Greek managers such as intelligence, decisiveness, charisma, dynamism, and enthusiasm. Again, traits which, for the Cypriot populations examined, were found to be important in the perception of leadership.

The second study extended the first study insofar as context was included. Specifically, a three-stage illustrated scenario was used to represent a routine working situation between a business leader and a client. It appears that the information given in the scenario combined with the leadership prototype filter defined ranges of acceptable facial expression. When the scenario included the display of positive emotion (in introductions and goodbyes), the participants preferred smiling pictures (see Figures 2.8i, 2.8iii, chapter II). In contrast, when negotiating with a customer, the leader could show a wider range of expressions, from neutral faces to smiles, and, to a lesser degree, frowns (see Figure 2.8ii, chapter II). The effect of appropriateness was clearly visible in the different scenarios when manipulating the facial expressions. Deviations from appropriateness (even with a single picture) led the actor to lose his perceived leadership quality. In the leadership context, this is interesting since sensitivity to the appropriateness of expression could contribute to more leader-like perceptions, while deviating from appropriateness could mean the exact opposite.

Examining another important matter in the context of facial expression research, study 2 used authentic and non-authentic smiles in the scenarios to examine the reactions and preferences of the participants. Previous research showed that people reacted more positively

to authentic smiles than to non-authentic ones (Frank, Ekman, & Friesen, 1993; Surakka & Hietanen, 1998). Study 2 demonstrated that reactions to smiles, with context activation, are much more complicated than prior research suggests. In the context of describing the introduction (therefore the first interaction), the participants considered non-authentic, low intensity, smiles to be more appropriate than authentic smiles. In the context of saying goodbye the result was the exact opposite. A possible reason might be that the fundamental information a leader needs to convey at the beginning of an interaction with a customer is non-threatening, and positive but without exaggeration. In other words, the leader needs to communicate at a level which reflects the relationship with the customer adequately. Similarly, when the negotiations are over, their acquaintance is at another level. The expression of genuine liking is appropriate, that is why authentic, high-intensity smiles were preferred by the participants for sealing the deal and for saying goodbye. An important outcome here is a deeper understanding of the concept of authenticity of expression for leaders. A key point of leadership perception is trying to understand the level of relationship between the leader and the receiver in order to decide if authenticity of expression is expected or not, and on what level it should be shown. Consequently, the communication attempts escape the “surface” and become more a matter of understanding the situation the leader is in, rather than simply employing behaviours indifferently.

### **4.3 Phase 2**

As mentioned earlier, similar to phase 1, phase 2 (studies 3, 4, and 5) also investigated leadership perceptions from facial expressions, using a larger sample, with improved instruments. Study 3 used manipulations of static facial expression sequences, transferring some of Asch’s (1946) trait impression formation tests to the research of leadership perception from facial expression. Study 4 used videos of a leader’s/actor’s facial expressions

in an organisational context. Finally, study 5 used photos extracted from the videos of study 4 with some additional manipulations. In line with the findings of phase 1, the results of phase 2 showed that people used facial expressions as indicators for evaluating leadership.

The three studies used different designs to examine the relationship between ILTs and leadership perception. Study 3 experimented with sequences of static facial expressions in minimum context activation. To be more specific, photo-sequences in study 3 were used to examine whether changing the order of the sequence of specific facial expressions will give different perceptions of a leader. A significant outcome was that order effects could not be found in facial expressions in the way they were found in personality traits in Asch's (1946) studies. Particularly, reversing or changing the sequence facial expressions did not cause any significant changes in leadership perceptions. Even though small qualitative differences in leadership perceptions between manipulations showed that completely rejecting the order effects hypothesis would not be correct although, at the same time, these were not sufficient to support such an assumption. These findings show that the order in facial expression sequences did not have a large impact in leadership perceptions, and therefore early facial expressions were not more influential than later ones (see primacy effect, Asch 1946). Certainly, one cannot rule out that the results reported here are specific of the design used in study 3. For example, the vast majority of the facial expressions used in the sequences were of medium intensity (see appendix J). Consequently, the relatively low intensity of facial expressions used might be one of the reasons of not confirming order effects with facial expressions. Perhaps a design using variations with high intensity of facial expressions would have given results supporting order effects. Further research is needed to establish the full effects of such a phenomenon. This is interesting for leadership research because it would define whether or not the order of facial expressions in communicational segments might influence leadership perception. Making leaders aware, for example, that early information in



communicational segments impact (or not) on leadership perceptions, could help in building new communicational strategies focused on the content of these early segments of communication. This could eventually help to take organisational communication in another level.

In addition to order effects, the photo-sequences in study 3 also examined whether changing one facial expression in a sequence to another facial expression indicating a different emotional state would alter perceptions of the observed leader. When replacing the “weak” picture from the photo-sequence with a picture with indicators of intense anger, the perception of the actor changed significantly. The intense-anger photo spread a vibe of hostility to the whole perception, making the actor/leader look less sensitive, and more tyrannical. In other words, when replacing the “weak” photo, the intense-anger photo became central by influencing the whole perception (see central traits, Asch, 1946). In the context of leadership, this is interesting as it demonstrates that a single frame of facial expression in a communicational segment is enough to impact leadership perception. Interestingly, despite the differences in leader dimensions, the “soft” leader was not considered a better leader than the “tough” one. At this point, a comparison to findings from phase 1 is deemed relevant. As pointed out earlier in this thesis, study 1 examined perceptions from frames depicting simple facial actions (frowns and eyebrow raises). These exact frames were also used in study 3’s sequences. The frown (sign of anger) in study 1 was rated as significantly more leader-like when compared with the eyebrow raising and pulling together (sign of weakness), but there was already a vibe of hostility identified. In study 3’s anger photo, an upper lid raiser added more negativity, and increased the actor’s hostility (more tyranny, and less sensitivity) without increasing the rest of the leader prototypical dimensions. Consequently, the hostility was increased without the actor receiving any higher evaluations in other dimensions (e.g. in dynamism, or intelligence) which could have helped to avoid an over-hostile impression,

such as in study 1. Particularly, these findings suggest that the participants could accept some hostility displayed by a potential leader (see study 1). On the other hand, too much hostility seemed to be negative for leader perceptions (see study 3). Consequently, this over-hostility of study 3's angry actor might be responsible for the specific variation's low ratings on indicators of leader-likeness (similar to the "weak" photo variation). The results above reinforce the argument posed earlier regarding ranges of acceptable facial expression (see section 4.2). It seems that the intense-anger photo (study 3) created an impression which violated what the participants would consider leader-appropriate. In the workplace, this is interesting for leaders, since awareness to these ranges of appropriateness could help them improve the impressions they create.

The fourth study used videos of a leader/actor's dynamic facial expressions in an organisational context, with three manipulations: dynamic-smiling, dynamic-nervous, and dynamic-angry. The three manipulations were perceived differently in terms of leadership, suggesting that the facial expression manipulation was responsible for shaping these perceptions. However, only one of those manipulations was perceived as more leader-like than the others, that is, the smiling one. In particular, the manipulation displaying positive emotions, was perceived significantly more favourably in most aspects of leadership perception than the two others displaying negative emotions. This was not surprising, since previous studies also found that positive versus negative leader emotional displays in organisational settings were preferred (Medvedeff, 2008; Newcombe & Ashkanasy, 2002). Furthermore, study 2 presented here revealed an underlying appropriateness heuristic of positive tone preference in the Cypriot organisational leadership context. The findings of study 4 reinforced the assumption that the participants prefer positive facial expressions of leaders over negative ones. It seems that the Cypriot samples examined in this thesis expect a leader at work to carry a positive tone during communication, whilst also avoiding negative

extremes. Examining the differences between the two variations displaying negative emotions (dynamic-nervous and dynamic-angry), the results of study 4 showed similarities to those of study 3. The two manipulations were perceived as different in terms of leadership perception but similar in terms of leader-likeness (see comparison of “intense anger” variation with “weak” variation in study 3). To be more specific, the dynamic-angry and the dynamic-nervous manipulations were perceived in accordance with the emotion displayed. Consequently, dynamic-angry was perceived as overaggressive and dynamic-nervous as oversensitive. However, the participants gave very low leader-likeness evaluations for both manipulations. Generally, the two negative extremes were somehow violating what the participants considered as leader-appropriate behaviour, deviating from how they would expect a leader to react in such a situation.

Study 5 used photos (static facial expression) extracted from the videos (dynamic facial expression) used in study 4, with some additional manipulations. To begin with, the static-smiling and the static-nervous variations were perceived as hypothesised when compared to each other. Specifically, the positive display (static-smiling) was perceived more favourably than the negative display (static-nervous). Contrary to expectations, the static-angry manipulation produced a relatively favourable view, similar to that of the static-smiling condition. Participants’ descriptions of underlying emotion of each static frame helped interpreting these unexpected results. While the manipulation frames in static-smiling, and static-nervous conditions were perceived positively and negatively respectively, the manipulation frame in static-angry condition was perceived as a mixture of positive and negative signals. To be precise, the angry frame was not perceived as angry. This is interesting because the specific frame was extracted from the respective dynamic version (dynamic-angry) in which the effect of the displayed anger was clearer. It appears that it was easier for the participants to recognise the signs of anger when viewing the dynamic facial

expression than when viewing the static one. This study produced results which corroborate the findings of a great deal of the previous work that compared recognition accuracy of static versus dynamic facial expressions (Ambadar, Schooler, & Cohn, 2005; Back, Jordan, & Thomas, 2009; Harwood, Hall, & Shinkfield, 1999; Kamachi, Bruce, Mukaida, Gyoba, Yoshikawa, & Akamatsu, 2001; Wehrle, Kaiser, Schmidt, & Scherer, 2000). Particularly, these studies also provide evidence indicating that dynamic facial expressions are more accurately identified than static facial expressions. To summarise, even though the respondents' perceptions after observing the dynamic-angry version indicated that the specific manipulation was transmitting pronounced negative signals, they did not perceive the same negativity after observing the static-angry version. It seems that the static condition was not transmitting the same information as the dynamic condition. Perhaps the dynamic components of dynamic-angry condition contained information which can explain these differences in leadership perceptions between static and dynamic facial expressions. The latter is in accordance with what other scholars have already advocated, namely that dynamic facial expression conveys additional information which helps perceivers to form a more complete impression of what they are observing (Ambadar, Schooler, & Cohn, 2005; Atkinson, Dittrich, Gemmell, & Young, 2004; Back, Jordan, & Thomas, 2009; Bould & Morris, 2008; Bould, Morris, & Wink, 2008).

Examining the static-versus-dynamic debate in more detail, even though in two out of the three static conditions (smiling and nervous) results were equivalent to the dynamic conditions, there were still significant differences to the videos. Generally, the results showed a tendency of the participants to favour static facial expressions over dynamic ones, either in perceived leader dimensions, in indicators of leader-likeness, or both. As discussed earlier in this section, perceptual differences favouring the static facial expressions might be attributed to the additional information contained in dynamic facial expressions. Simple mathematics

could explain such an assumption: dynamic facial expressions have temporal aspects (Krumhuber & Kappas, 2005; Krumhuber, Manstead, Cosker, Marshall, & Rosin, 2009; Krumhuber, Manstead, & Kappas, 2006) as they contain moving visual information from the time an expression begins to the time it fades. In contrast, static facial expressions represent the expression captured at a specific moment. What is more, Stewart, Waller, and Schubert (2009) found that by removing micro-expression frames from clips of communication they obtained different perceptions. Specifically, their results showed that people felt more anger and threat when positive microexpressions were removed from George W. Bush's speech (see chapter II). Stewart et al. (2009) reduced the "dynamic" in dynamic facial expression. The design of study 5 is similar to Stewart et al.'s (2009) research as regards the method. The main difference is that it investigates extremity (all frames were removed except for the apex of the facial expression) instead of the subtleness (removing some of the frames). As mentioned earlier in the thesis, in dynamic facial expressions people can see a development of micro-expression frames composing and decomposing a moving expression as opposed to static facial expressions in which people can only see a single still frame (see chapter III, section 3.11). Consequently, in a pattern similar to Stewart et al.'s (2009) research, the groups of micro-expressions removed from the segments of the leader's communication might have been responsible for the participants perceiving the static versions more favourably than the dynamic versions. In addition, the participants' "misjudgement" of static-anger might be caused by the lack of temporal aspects and/or micro-expressions which may have resolved the vagueness of the static facial expression. Obviously, the dynamic facial expression contained something that aided the participants to more accurately perceive the emotion transmitted. The perception of the underlying emotion was more consistent for the other two frames (static-smiling, static-nervous), perhaps because the specific apexes were not so dependent on the dynamic aspects.

The results, specifically the differences found between the perception of dynamic and static facial expressions, are significant for the research of facial expression and leadership. The different perceptions suggest that any research studying static or dynamic facial expression has to take such differences into consideration before attempting to generalise results. A considerable amount of research uses still photos to study facial expressions (e.g. Adams, Ambadi, Macrae, & Kleck, 2006; Carroll & Russell, 1996; Dimberg & Thunberg, 1998). This is done mainly because of the ease of administration in comparison to showing participants dynamic facial expressions (e.g., videos). Without underestimating the significance of one method over another, the contribution here is a lens of interpretation. Specifically, the results when investigating facial expression with still photographs might differ from those when using videos, and both methods may differ again from actual communication.

Examining another important matter, study 5 compared static facial expressions of similar emotional states to examine the influence subtle differences might have in leadership perceptions. The findings revealed that subtle differences may or may not influence the perception of leadership, depending on the specific circumstances. To be more specific, when the facial expressions were already sending a clear message regarding their underlying emotional state, subtle differences had no effect on perception (see static-smiling compared to static-smiling with eyebrow raise). In contrast, when the facial expressions were not clear regarding the emotional state they represented, subtle differences resolved the vagueness (see static-angry compared to static-angry with an upper eyelid raiser [AU: 5]). Simple alterations around the area of the eyes were enough to change a facial expression from sending mixed positive and negative signals (high leader-likeness) to a clear anger expression (low leader-likeness). The latter is consistent with previous findings highlighting the importance of subtle differences in the perceptual process (Snodgrass, 1992; Surakka & Hietanen, 1998). This is

important for leaders, because being aware of the impact of subtle details in their facial expressions can eventually help in improving accuracy in communication and shape perception. Moreover, if a simple eye muscle movement can significantly improve participants' recognition accuracy, facial expression training within organisations may be a strategic means of raising communicational conditions to a higher level.

A last set of additional variations was used in study 5, to obtain data indicating how the specific actor was perceived in the specific context. Particularly, the participants were asked to evaluate (1) a static picture of a neutral face (physiognomy), and (2) the static basic three-facial expression format (neutral, happy, and pondering frames) which was used in all variations before the facial expression manipulation. The findings revealed that the specific actor was not transmitting a very leader-like image, as the physiognomy variation was perceived relatively low in terms of leadership dimensions and indicators of leader-likeness. Furthermore, the participants perceived the basic three-facial expression format (a more expressive face), which was used in all variations before the facial expression manipulation, to be more likeable and masculine but not more leader-like. Certainly, it cannot be ruled out that these results could have been influenced by the sample's unique characteristics in the specific context. For example, there are cultures which consider leader expressivity as a sign of weakness, while in others it is considered as highly appropriate (Den Hartog & Koopman, 2005). Furthermore, the display rules in terms of expression appropriateness to the momentum might also differ from situation to situation (Sutton & Rafaeli, 1988).

Interestingly, leadership perceptions for all the variations of study 4 and 5 did not exceed the leader perceptual limits set by the basic format, with the indicators of leader-likeness ranging from really low to medium. The facial expressions in the manipulations were projecting a level of influence, but it seems that the perceived leader "potentiality" of the actor was already influenced by what his specific characteristics (i.e., his physiognomy)

would allow. This is in line with the results of study 1, highlighting the significance of physiognomy in the interpretation of facial expressions. Generally, the findings of this thesis indicate that physiognomy is determining the facial expression influence potentials of a leader. It seems that leadership perceptions constructed from physiognomy act as biases which influence how further facial expressions are perceived (see also Zimbardo & Leippe, 1991). This is useful for organisations as it shows that facial appearance is a factor which has an impact in leadership perceptions and therefore might be worthy of considering in leaders' assessment procedures, especially in environments where human interactions are central. Finally, it is recommended that further research be undertaken in the area of physiognomy and leadership perceptions. It would be appealing to conduct similar experiments with more actors, to investigate if there is a relationship between perceptions created from physiognomy (and other visible characteristics such as hair, skin colour, glasses) and the maximum of leader-likeness a person can achieve.

In addition to other tests, gender differences were also examined in the three studies of phase 2. The implicit leadership theories (ILTs) revealed gender differences in seven out of eight leader dimensions (all except potency). Men followed a gender-stereotypic pattern giving higher ratings of tyranny and masculinity while women evaluated sensitivity, likeability, dedication intelligence, and dynamism higher. These findings are partially in accordance with the ones of Epitropaki and Martin (2004) who showed that female participants prefer their leaders to be more sensitive (understanding, sincere, honest) and less tyrannical (domineering, pushy, manipulative, p. 302). Noticeably, women's ILTs in this research emphasised more leader prototypic dimensions, unlike men who placed more emphasis on leader anti-prototypic ones. These findings may be explained by cultural characteristics. The Cypriot leadership culture is male-dominated even if there is currently no research to prove this. However, percentages of men and women in organisational leadership



positions show that the vast majority of high ranking leadership positions in organisations are held by men (e.g. Bank of Cyprus, 2008). Deep down, perhaps the male sample of the current study expresses a tendency to maintain a think manager-think male status quo (see Schein, Mueller, Lituchy, & Liu 1996) while the women in this sample show a tendency of moving to new leader prototypes that emphasise on a combination of dynamism, intelligence, dedication, sensitivity and likeability rather than tyranny and masculinity.

In contrast to the effect of participants' ILTs, the gender differences regarding leadership perceptions of facial expressions were far from marked. For the majority of the manipulations used there were no significant differences. A possible explanation for this might be that there is much more gender agreement when leadership evaluations take place in real life. Asking people to write down their prototypes, may not activate the same unconscious aspects which potentially exist in actual communication. The only gender difference found in reactions to facial expressions was a gender-stereotyped congruent pattern for the male sample. Specifically, men perceived manipulations indicating high negativity more positively than women. This implies fundamental gender differences in the perception of specific stimuli. The present findings are consistent with other research highlighting gender differences in the structures of nonverbal communication (Biele & Grabowska, 2006; Edwards, 1998; Hall, 2006; Hall, Carter, & Horgan, 2000; LaFrance, Hecht, & Levy Paluck, 2003; McClure, 2000). The latter might explain why men's perceptions of hostile (high negativity) facial expressions are more positive than women's. Particularly, a common stereotype is that men are generally expected to behave more aggressively than women (Biernat, 1995). Consequently, the more positive view of the male sample, for a male actor/leader displaying aggressive facial expressions, might be due to a similarity-attraction phenomenon (see Kiohnen & Shanhong, 2003) with regard to the behaviours they consider appropriate for leaders to exhibit. In other words, men evaluated

aggressiveness more positively perhaps because they find it more acceptable than women for a male leader to behave aggressively.

A general observation regarding the manipulations used in the main research (phase 2) is a potential “halo effect” (see Nisbett & Wilson, 1977) in leader prototypicality. Briefly, a “halo effect” in interpersonal perception is when a person’s specific quality influences the perception of other qualities. For instance an attractive person might be considered as more desirable, happy, competent, social etc (see Dion, Berscheid, & Walster, 1972). As can be seen in the results, many of the variations with similar levels of leader-likeness could be differentiated from each other on the basis of the emotional state they were transmitting. Comparing, for example, the dynamic-angry with the dynamic-nervous manipulation in study 4, the former was perceived as less sensitive and likeable than the latter. These trait inferences make sense considering that anger is a hostile emotional state. In contrast, when the differences in indicators of leader-likeness were pronounced (see comparisons of dynamic-smiling with dynamic-angry and dynamic-nervous), a clearly more favourable leader perception appears in the majority of the leader dimensions. It seems that a wider leader-likeness gap between two variations would result into “flattening” the effect of the emotion displayed in the manipulations. To summarise, the effect of the displayed emotion in trait inferences was relatively visible in variations with similar leader-likeness, while the opposite happened in variations with significantly different leader-likeness. A possible explanation for this may be that a biasing filter was enabled, in which the perceptual outcome was more a matter of adjusting perceptions to a leader-prototypic “halo” rather than differentiating certain trait inferences according to the emotion expressed.

Another example supporting the participants’ leader prototypic or anti-prototypic biases is the separate analysis for the participants who accepted the actor as a leader and those who did not. These results showed that the two groups perceived a completely different person.

Particularly, the respondents who accepted the actor as a leader perceived a much more leader-positive image than those who did not. That revealed a potential bias in that it seems that participants tend to confirm their choice whether or not they considered the actor as a leader. It seems that after participants' leader prototypes were activated, their perceptions were influenced by a misattribution mechanism. Specifically, Hall and Lord (1995) argue that perceivers' leadership prototypes may be activated without the potential leader corresponding to all aspects of the prototype. However, when the transmitter's behaviour is satisfactory to activate the leader prototype, then perceivers use this stereotypic information to fill-in the impression of what they see. In other words, once their leader prototype is enabled, they adjust the missing information to their expectations from previous experiences with leaders. Consequently, the leader-prototypic "halo" effect proposed above can be explained in terms of the perceivers' prototype activation (Hall & Lord, 1995; Mendvedeff & Lord, 2007; Phillips & Lord, 1982).

Returning to participants' ILTs, identifying the leader-prototypic halo also helped to examine which dimensions were actually considered as prototypic. During the data reduction analysis, the testing of several factor-models revealed that eight ILTs dimensions were statistically collapsing into two wider factors: leader prototypic (intelligence, dynamism, dedication, potency, sensitivity, and likeability) and leader anti-prototypic (masculinity and tyranny; see appendix H). This is in line with previous work on ILTs (e.g. Epitropaki & Martin, 2004; Offerman, Kennedy, & Wirtz, 1994). However, in the facial expression manipulations included in the main research, positive leadership perceptions seemed to include masculinity as a leader-prototypic dimension. Particularly, when the leader in one manipulation was perceived more favourably than in another, tyranny was significantly lower but masculinity was either similar or significantly higher. So, even though participants' implicit leadership theories indicated masculinity as leader anti-prototypic, their reactions to

facial expressions were indicating otherwise. Part of this may relate to the fact that the actor was male, and therefore evaluating masculinity would lose some of the “discriminatory” use caused by the abstract evaluation of an ideal leader. Therefore, asking people to evaluate how masculine a male actor is might release some of the stereotypic influence of asking them to declare their preferences for an ideal leader. In other words, participants’ structures of perception of an actual actor’s masculinity might differ from their expectations (ILTs) because they are not completely conscious of their actual ILTs. Adjusting to the theoretical model of the current thesis, ILTs investigate a broader leader-category (see Lord et al., 1984) than what is examined when viewing actual facial expressions, of a specific actor, in a specific context. The comparison of ILTs with the actual behaviours in context can be considered as a comparison of the basic prototype filter with the complex prototype filter as it is described in chapter II.

In addition to what is advocated above, another finding reinforced the latter assumption. Despite all the feedback from the preliminary studies regarding the ILTs list, there was a variable which was not predicted to influence perceptions, that is, the actor’s age. The actors in the preliminary experiments did not reveal such an issue, likely because their perceived age was not considered to be a problem. However, the use of a young actor in the main research resulted in uncovering a significant aspect of ILTs. Specifically, the participants’ open-ended comments revealed a tendency of perceiving the actor/leader as “too young” in their negative evaluations. Taking things in turn, the ILTs in action, according to leader categorisation theory, can become very specific (Lord et al., 1984). The qualitative analysis implied that the participants’ prototypes may have hidden dimensions, such as the appropriate age, which may only be noticed when the leader is lacking them. The lists from the other studies (studies 1, 2 and 3) did not highlight such a variable, and neither did the positive evaluations of the young actor. However, the negative evaluations of facial

expressions pointed to the age variable. Taking the above into consideration, a level of relativity and flexibility of the prototypes can be noticed here. Depending on the general impression, the specific prototype can have diametrically opposite morphs. A young leader might be acceptable when he acts in a confident and positive manner. On the other hand, when behavioural cues lead to perceived negativity, this might “spill-over” to an observable quality. In other words, if the actor is perceived as leader-like, the age factor might not be a problem, but, when perceived as not leader-like, the age might be considered as one of the reasons for not appearing leader-like. This reveals the need for observers to create meaning, from observations (Hassin, Bargh, & Uleman, 2002; Todorov, Said, Engell, & Oosterhof, 2008). This is important from a leader’s perspective because everything they carry in terms of visual stimuli, specific characteristics, or dynamic expressions can contribute to observers’ perceptions in a circular manner. Youth can be considered as a flaw for a leader when overall perceptions are negative, but might be overlooked when the perceptions are positive.

Both effects mentioned in the last paragraphs, namely the age variable, and the “masculinity” dimension incongruence, highlight the importance of specifying leader categories before any attempts at discussing leadership perceptions. Furthermore, the latter might also explain why H1 regarding behaviour-expectation match (see Nye and Forsyth, 1991) was only partially supported. Participants’ ILTs were measured on a leader category level (abstract expectations) different from the reactions to the facial expressions (specific situation), meaning that the comparisons were not made using the same standards. This discussion does not aim to question the importance of comparisons between ILTs and actual behaviours, but to highlight the contribution of categorisation theory of leadership in interpreting such results (Lord et al., 1984). Therefore, in attempting to examine such relationships one should consider that there is a substantial amount of situational aspects which will potentially prevent comparisons under the same criteria. However, this does not

mean that ILTs, as studied in the present thesis, do not contribute to an understanding of participants' leadership perceptions of facial expressions. The findings showed that the majority of the manipulations used in the main research statistically supported the behaviour-expectation match. The latter suggests that a match between ILTs' and participants' reactions to facial expressions might be a significant factor in predicting actual leadership perception.

To summarise, the findings of phase 2 underpin the argument that facial expressions influence the perception of leadership. To be more specific, changing single frames of facial expressions indicating a different emotional state in videos or photo sequences resulted into altered perceptions of the observed leader. Besides marked facial differences, subtle facial actions were also found to influence leadership perceptions. Particularly, when facial expressions were not clear on the emotional state they represented, subtle facial muscle movements resolved the vagueness. In addition, the facial expression manipulations in the three studies of phase 2 revealed a number of other important findings. First, order effects could not be found in facial expressions in the way they were found in personality traits in Asch's (1946) studies. In other words, reversing or changing the sequence of facial expressions did not cause any significant changes in leadership perceptions. Second, positive expressions (expressions with indicators of happiness, e.g., smiling) yielded a higher score in leadership perception than negative ones (expressions with indicators of anger, or sadness, e.g., eyebrow lowering and pulling together or eyebrow raising and pulling together). Generally, it seems that the participants of phase 2 preferred a business leader to use positive facial expressions during communication, at the same time, avoiding negative displays. Third, static facial expressions were rated by the participants more favourably than dynamic facial expressions. A possible explanation for this finding is that dynamic facial expressions contain additional information (temporal aspects and/or microexpressions) which might be responsible for these differences in leadership perceptions between dynamic and static facial

expressions. Fourth, physiognomy (i.e., a neutral face) was found to determine the facial expression influence potentials of a leader. In other words, impressions created by an actor's physiognomy served as biasing filters for the rating of the later subsequent facial expressions events. Fifth, male and female participants showed pronounced gender differences regarding their ILTs but only subtle differences (men perceived manipulations indicating high negativity more positively than women) when they had to evaluate actual leaders' facial expressions. A possible explanation for this might be that there is much more gender agreement when leadership evaluations take place in real life. In other words, the process of asking people to describe their prototypes of leadership, may involve different mental structures from asking them to evaluate an actual leader. Finally, phase 2 uncovered some interesting findings which corroborate the categorisation theory of leadership (see Lord, Foti, & DeVader, 1984). To begin with, testing the actors' ILTs-facial expressions match hypothesis (H1), provided evidence supporting that ILTs are used in the perception and evaluation of actual leaders. Additionally, further analysing the data exposed a number of important phenomena which also reinforced the significance of the leadership categorisation theory. Specifically, the perceivers' tendency to use stereotypic information to fill-in the impression of what they see (see leader-prototypic "halo" effect, see 4.3, p. 208), showed the influence of leader prototypes in actual leadership perceptions. Moreover, the findings of phase 2 revealed the significance of specifying leader categories when investigating leadership perceptions. Differences between beholders' leader prototypes and their reactions to actual leaders facial expressions should be expected (see age variable, see 4.3, p. 210; "masculinity" dimension incongruence see 4.3, p. 209) and be taken into account when interpreting results of such studies. In conclusion, phase 2 showed that facial expressions have a powerful influence on the perception of leadership but to understand that influence one must first understand how beholders' perceive.

## **4.4 Limitations and future research**

### 4.4.1 Implicit leadership theories (ILTs)

Finally, a number of important limitations need to be considered. A first limitation of the thesis is that the items used for the ILTs lists were taken from previous instruments. ILTs, as many other stereotypes, are influenced by culture (Den Hartog et al., 1999). Therefore, the use of items from previous ILTs instruments may have restricted the study as regards the specific cultural characteristics of the population. Lord et al. (1984), for example, asked participants to give leader descriptions and from those descriptions generated their own list of traits. Future studies examining the effect of ILTs could combine such methodical strategies in order to gain more specific results. Despite the fact that the original list was not generated using such a strategy, the ILTs list of the current thesis was refined twice, after quantitative and qualitative feedback, to finally adjust to the Cypriot samples. An additional limitation is that the current thesis examined ILTs from a cognitive perspective. Mendvedeff and Lord (2007) advocate that there is also an emotional aspect in ILTs coexisting with the cognitive. That is, leader prototypes do not only exist as cognitive schemata but also as the emotions experienced in leadership situations. Prospective research might combine the study of both cognitive and emotional aspects.

When factor analysing the ILTs ratings, as mentioned in chapter III, the item “charismatic” had to be dropped from the ILTs list. Further comments on charisma are in order, due to the attention it received in leadership studies (e.g. House, Hanges, Javidan, Dorfman, & Gupta, 2004; Conger, 1999). Convenient as it would be to consider “charismatic” within the factors, it is explained below why the specific item was eventually excluded. It was considered to be incongruent to exclude items, such as “credible” and “competent”, with certain statistical criteria (e.g. low communality) and then ignore the same criteria for item “charisma”. The argument posed here for further justification of this decision



is that, in the Greek language, “charisma” translates as “someone who is gifted with a conceptual orientation leaning towards an unexplainable power”. This may have been confusing for the specific sample. Moreover, studies investigating charisma do not restrict charisma to one sole concept. Instead, they often describe it with trait words such as sociability, energy, dynamism, and strength (e.g. Conger & Kanungo, 1994; Shamir, 1995). The latter suggests that charisma might be already entailed in the other items included in the ILTs final list.

An additional comment about the ILTs is that the PCA indicated eight leader dimensions on which the study was based. The factor analysis was exploratory since, to my knowledge, ILTs have never been studied before in Cypriot samples. Further work needs to be done to confirm or reject the proposed ILTs structure by examining these eight dimensions using confirmatory factor analysis (CFA).

Another limitation arises regarding the match between ILTs and reactions to the facial expressions. Firstly, some of the results of the correlations might have been influenced by the relatively low ratings found for the manipulations. The mean-ratings of leader dimensions in all variations of the main research were not higher than 6.89 (with 9 being the maximum score) and were even lower for the leader-likeness indicators (FI max: 5.66). This made a close match impossible for certain dimensions (e.g. intelligence, dynamism, and dedication). For that reason, it would be interesting to investigate the same effects in cases where evaluations of leadership would include a wider matching range. Secondly, the technique used to test the hypothesis regarding the ILTs-match with reactions to facial expressions was to average the correlations representing the match and then compare them with indicators of leader-likeness. Other techniques might also have been considered appropriate here. An example is weight-averaging which places more emphasis on leader prototypic dimensions such as intelligence, dedication, and dynamism and less emphasis on leader anti-prototypic

dimensions such as tyranny. Since, to my knowledge, no standard test is established to test such relationships, averaging the correlations was considered as a decent technique to follow for testing the match between ILTs and reactions to facial expressions. The reason is that averaging helped to take into account participants' ILTs matches, with trait inferences from actors' facial expressions, for all eight leader dimensions, to produce a single number (average). This enabled the comparison with the indicators of leader-likeness, to examine if the actors were perceived as more leader-like when there was a match than when there was a mismatch. Further investigations could try to create a formula to use weight-average for testing similar hypothesis. As mentioned earlier in this thesis, certain characteristics were strong enough to activate leadership prototypes (Hall & Lord, 1995). Once such activation takes place, perceivers complement the impression with their own stereotyped information. Consequently, prospective research could aim at identifying the specific dimensions which trigger the activation of leader prototypes.

#### 4.4.2 Facial expression manipulations

A number of caveats need to be noted regarding the facial expression manipulations. Probably the most important limitation of the experiments used in the studies was the exclusive use of male actors. One of the priorities of the current thesis was reaching depth in understanding facial expression influences, rather than studying gender differences in leadership perception. Taking into consideration the gender differences mentioned earlier, the decision of sacrificing the gender variable was taken. The reasons were (a) to give more weight to experimenting with the facial expressions without losing statistical significance due to the number of participants per group that were evaluating the leader's facial expressions and (b) to avoid jeopardising the validity of the questionnaires by overloading them (already the participants had to evaluate ILTs, and reactions to leaders' facial expressions, both

quantitatively and qualitatively). Secondary factors in the decision whether male or female actors were to be used were (a) the participating organisation's percentage of men and women in high ranking leadership positions (95% male); and (b) the availability of myself as male actor ( (i)FACS coder (ii) previous acting experience (iii) minimized the costs of the research (iv) awareness of the design, and motivation for the project's efficiency). As a result, the thesis only used male actors. Future studies should use both male and female actors with coded facial expression, so that comparisons between genders can be made. It would be interesting to investigate how far gender related stereotypes affect the ratings of comparable expressions when shown by male or female actors. Prior research holds that gender differences around leaders' facial expressions influencing leadership perception exist at several levels; there are gender differences in ILTs (Deal & Stevenson, 1998; Den Hartog & Koopman, 2005; Epitropaki & Martin, 2004), gender differences in reactions to male and female leaders (Eagly & Karau, 2002; Powell, Butterfield, & Parent, 2002; Schein, Mueller, Lituchy, & Liu, 1996), gender differences in emotional expressiveness (Hall, 2006; Hall, Carter, & Horgan, 2000), and gender differences in expectations of expressiveness (Hess, Adams, & Kleck, 2004; Hess, Senecal, Kirouac, Herrera, Philippot, & Kleck, 2000). Combining the previous with research into lack of fit model (Heilman, 1983) or the think-manager-think-male phenomenon (Schein, Mueller, Lituchy, & Liu, 1996) leads to the assumption that, indeed, similar expressions would be rated differently when using male versus female actors with respect to leader-likeness. For example, dominance and the related facial expression may lead to lower leadership ratings for women than for men, due to lack of fit with the female stereotype.

Apart from gender, the use of a small number of actors in the preliminary research and of one actor in the main research was also considered as a limitation. The use of a low number of actors helped to better control appearance variables such as hair, facial

characteristics, skin colour, and clothing (Wehrle, Kaiser, Schmidt, & Scherer, 2000; Zebrowitz, 1997). At the same time, this choice resulted in restricting the external validity of the design. In other words, the results are less generalisable. Nevertheless, that is also one of the strong points of the thesis. For example, in the last two studies, using the same actor, under the same circumstances, helped to test the impact of the actor's facial expressions in more depth. Consequently, the diversity of facial appearance characteristics was sacrificed to focus more on the influence of facial expressions under specific conditions. Future research could shift focus of attention to less specification, to include a wider range of variables such as gender, physiognomy, or any of the other characteristics mentioned above. The combinations these characteristics can provide are many and appealing. For example, by using more actors, it would be interesting to investigate if there is a relationship between the perceptions created from physiognomy and the maximum leader-likeness a person can reach.

Another limitation was that, although the scenarios in the experiments activated communicational schemas, they were far from a real communication. This resulted in a group of missing variables, which is important for the interpretation of the results of this study: First, apart from facial expressions, other nonverbal and verbal communication channels were absent. Communicational segments in all five studies did not show the body, they had no voice, and they were not real moving people (only study 4 included video-motion), thus lacking important aspects of genuine communication (Ekman, 2003; Russell, Bachorowski, & Fernández-Dols, 2003). Future research could aim at studying combinations of facial expressions with other verbal and nonverbal channels. It would be interesting for example to examine leadership perceptions, in a similar project, by using facial expressions and voice (significant communication channels used in video conferences).

Another source of weakness in this study was that the scenarios did not actively involve participants but rather they were asked to "observe" a situation. Again this is quite different

from actual leadership situations where leadership is perceived on the basis of interaction. The participants only received information, and they did not need to control non-verbal messages emanating from themselves, so they had less cognitive load to deal with than in real life interactions. They also had much more time to react than in a real interaction, so a lot of the snap decisions and unconscious reactions that exist in actual communication were lost. In summary, there were a number of obstacles that limit the drawing of generalisations from the experiment to the organisational context. However, the scenarios in the five studies can be used to add to an understanding of the very basic ways in which people perceive leadership from facial expressions, with limited disturbing variables. The results of the current research can be used as foundation for further investigation of full-motion communication.

Returning to the matter of authenticity of facial expression, study 2 used pictures of the appearance of authentic and non-authentic smiles for the manipulation of authenticity. In reality, genuine facial expression differs from voluntary facial expression in much more than pictures can show. Ekman (2003) points out timing as an advanced facial coding detail that can be used as an indicator to distinguish voluntary from involuntary expressions. Examples of timing information in facial expression coding are how long an expression lasts or how long it takes to get to the maximum, how long is it held for and how much time it needs to get back to the point of relaxation (Ekman, 2003). Therefore, in a study examining authenticity with video communication, an experiment can involve timing of expression in addition to facial muscle movement coding.

A limitation of using FACS is that it is used for scoring visible changes on the face, so it does not account for changes in muscle tone that might exist but cannot be captured by the human eye (Ekman et al., 2002). These changes can be measured using electromyography (see Tassinari & Cacioppo, 1992). In the same way subtle facial expressions influenced leadership perceptions in study 5, unobservable facial expressions can have impact in an

implicit manner. Future research can use facial electromyography to test the latter assumption.

Finally, a number of important limitations were caused by a specific factor; the one of sources' accessibility. There were important comparisons omitted from the design because of the need to keep the source usage within manageable levels. For example the impact of subtle differences in leadership perceptions was not tested using dynamic facial expressions (videos), as it was for the static facial expressions (photos). The rooms with the necessary equipment for projecting the videos were not available for much of the sample, and the employees' training event that was used for data collection only took place at a specific time of the year. For the same reason, the underlying emotions for the videos (dynamic condition) were not investigated as in the photos (static condition). Generally, in an ideal design, all the manipulations would have been tested for both static and dynamic conditions.

#### 4.4.3 Theoretical limitations

Besides the variables considered in this thesis, the current research was not specifically designed to evaluate all the factors that might be involved with the subject area. For example, perceivers' characteristics of personality (Felfe & Schyns, 2010; Keller, 1999; Schyns & Sanders, 2007), and mood (Bower, 1991; Forgas & George, 2001; Hall & Lord, 1995; Kunda, 2001) were found to be linked with leadership perception. Moreover, a variable found to be relevant with respect to emotional expression is emotional contagion. Emotional contagion is considered as the automatic and subconscious, emotional conversion through nonverbal imitation (Sy, Coté, & Saavedra, 2005; Wild, Erb, & Bartels, 2001). The variables mentioned above were not included in the research design. The main criterion for excluding emotional contagion and mood was the practicality of the research design. Emotional contagion and participants' mood as emotional procedures are not as easily measured as the traits included

in the ILT lists. However, both ILTs and perceived emotionality of facial expressions were used as indicative measures, after potential mood and emotional contagion effects took place. Finally, personality was not investigated, mainly in order to maintain a reasonable level of complexity of the model. A basic criterion for the selection of variables to include in the design was to create an acceptable strategy for organisations. The core of the instrumentation was to examine ILTs, and participants' reactions to facial expressions. Consequently, some of the perceivers' characteristics were tested purposefully (ILTs, gender), others were eliminated by the sample group selection (profession, culture), and others (such as personality) were left out in order to reduce complexity.

#### 4.4.4 Research credibility

Next, the research is seen under the lens of research credibility as discussed in Robson (2002). The two preliminary studies used relatively small samples consisting of university undergraduate and postgraduate students. The main part of the study (the last three studies) used a sample of employees from a Cypriot financial organisation. In the main research (studies 3, 4, and 5) a sample of 807 people was used from a population of 2598 employees in Cyprus. However, the conditions did not allow for random sampling. The research was conducted on a convenience sample (employees under professional training), pre-determined from the bank's training programme. Therefore, caution must be applied, as the findings might not be transferable to the whole population. On the other hand, due to the coverage of a significant percentage of that population (more than 30%), what may be claimed is that the findings can give meaningful insights representing organisational trends.

In discussing external validity (generalisability), the studies all took place in a specific context and the results are not generalisable to all leader situations. The perceptions represent, more or less, the participants' first impressions of business leadership since they do

not have any previous interactions with the actors/leaders and all the experiments are placed in organisations. Future research might investigate reactions to facial expressions (a) with business leaders already known to the participants or (b) with other leader categories (e.g., military leaders). Perhaps research into leaders that the participants had previous experiences with will find different results.

In the context of internal validity (Robson, 2002), there is no argument that the quantified measurements used for the lists represent a 1:1 analogy with the actual participants' ILTs, the perceptions of leadership from the facial expressions, or their perceptions of leader-likeness. What is argued is that the area was approached with a level of "appropriateness" guided by the laws of scientific rationale. As mentioned earlier, ILTs trait-lists are an acceptable and widely used method for studying implicit leadership theories extracted by scientific investigation using thorough validation methods (Epitropaki & Martin, 2004; Offerman, Kennedy, & Wirtz, 1994). What is more, the results from the lists, in the current research, were triangulated with the qualitative data as it was analysed from the open ended questions. Also, the ratings and "yes"- "no" responses whether the actor could be considered as a leader or not, represented indicators of actors' leader-likeness. These indicators are not claimed to be an absolute measurement for leader-likeness, but ratings that helped to compare reactions from one variation to another.

Another limitation regards the control of external variables. The design of all the studies aimed to reduce external variable influence as much as possible. The most difficult task had to do with the video construction in study 4. The validity issue there was to keep everything constant in all the three conditions, except for the last facial expression. The strategy used was video editing (keeping the exact same "basic" part, see section 3.9.5.1, chapter III) in order to keep variables, such as different subtle movements, expression, face posturing, or tiredness from interfering with the production of the communication. Even



though the effort was to eliminate these variables entirely, this was not possible to achieve completely. In the static facial expression studies, controlling these variables was easier. Paradoxically, the latter resulted in decreasing the element of equivalence with live communication. In other words, as the control of external variables was increased, the results' generalisability (external validity) to actual communication was decreased.

Lastly, the subjectivity of the qualitative analysis included a reliability threat. A good counter-strategy might have been to use a second person to analyse the qualitative data and check interrater reliability. Due to the costs that was not a viable option for the current study. Nevertheless, the qualitative data analysis followed a strict procedure (see 2.6.2 chapter II, 3.7.2 chapter III). In addition, the findings of the qualitative data were cross-checked with the quantitative data. Generally, triangulation was used as a strategy to uncover weaknesses from potential reliability threats.

#### **4.5 Conclusions**

The limitations section almost always seems to question the significance of the conducted research. The benefit of acknowledging limitations lies in the extent that it is helpful for improving a design before it is conducted, but also for future designs, by considering strategies to avoid serious weaknesses (Robson, 2002). Furthermore, over-considering limitations and seeking perfection might prevent any decent attempts at approaching a problem. An example on the paradox of the validity can be found in the discussion earlier in this section. There, when controlling external variables which would normally exist in an environment, the external validity (generalisability) was decreased because of the lack of correspondence with reality. To conclude, no research can control each and every aspect. Robson (2002) proposes a two way solution: one is conducting similar research to reinforce what is supported in a specific design. The other is to construct a convincing argument

supporting the rationale behind the design. The current thesis follows the second proposition, making an argument for the selected methodology for approaching the current subject, and, at the same time, suggests propositions for future research.

The studies included in this thesis present a set of methods for investigating facial expression, different from what has been used so far in the area of leadership perception. A methodological contribution of the current research is based on the integration of the depth of psychological methods of facial expression coding, with research methodologies in leadership perception. Cohn, Zlochoher, Lien, and Kanade (1999) support that obtaining accurate facial expression measurements is crucial for the credibility of research. The results of the current thesis support that the coding of facial expression at a very differentiated level can contribute to our understanding of leadership perceptions.

#### 4.5.1 Implications and contributions

Regardless of the limitations, the findings of the studies presented here are of great academic and practical value. Facial expressions were found to have a strong influence on the perception of leadership. The current research, to my knowledge, is the first one to link implicit leadership theories with people's reactions to leaders' facial expressions. In addition, sophisticated facial expression coding in the area of organisational leadership added detail to our knowledge of leaders' facial expressions decoding, thereby increasing the accuracy of the results and, at the same time, the depth of analysis.

The use of detailed facial action coding analysis in this thesis helped to penetrate perceptual structures in a unique manner. Specifically, differences in facial expressions, even subtle ones, were found to have an impact on leadership perception. Furthermore, the FACS instrument (Ekman et al., 2002) helped identify differences between dynamic and static facial expression. Particularly, these results revealed that the participants favoured static over

dynamic facial expressions. Taken together, these findings allow drawing out recommendations for leaders' facial expression. Organisations can benefit the depth of such analysis by including basic facial expression workshops within the professional training programs. In a primary level, these training programs may include facial action coding, and decoding, instruction and practice. In a more advanced level, they may also integrate important concepts such as authenticity and appropriateness of expression (see findings of study 2). For example these workshops may focus on explicitly discriminating authentic from non authentic facial expressions and discuss when authentic displays are more appropriate. Finally, part of this training may involve the education of display rules for leaders within several contexts so they can gain awareness of the ranges of expressions that are considered more appropriate. The outcomes of such training can eventually contribute to improving organisational communication. Of course, in order for such training to be successful, further experimental investigations are in need as, to my knowledge, little research is available in leadership using that level of facial expression analysis. As the current research showed, these investigations should take into consideration that accurately coding facial actions might be crucial to studying the impact of expressions on leadership perceptions. In other words, the credibility of leadership research into emotional displays depends on the accuracy of the description of facial expressions (see Rosenberg, 2005).

The leadership prototype filter presupposes that leadership perception from facial expression is a complex situational process. Perceivers act as “naive scientists”, they take available stimuli, such as facial expressions and other situational information, into account when trying making sense of what happens around them (Hassin, Bargh, & Uleman, 2002). The current study highlighted a number of factors that contribute to shaping perceptions of leadership, such as physiognomy, static and dynamic facial expressions, context, authenticity, and appropriateness. Consequently, a fundamental rationale for penetrating the structures of

leadership perception from facial expressions is to understand what is inside the perceiver's mind; to reveal leadership schemata (prototypes). A significant part of the leadership perception process comprises of a match between those schemata and the inferences the perceiver makes when combining facial expressions and situational information. Therefore, the weight in understanding observers' perceptions does not only fall on the facial expressions displayed, or even the intentions of the actor displaying the expression, but in how observers perceive these displays. This is important for academic knowledge because it reveals that a shift of the research focus from transmitter (leader) to perceiver (follower) can give a different angle in the way leadership is viewed. Consequently, it is recommended for leadership scholars to be aware of followers' contribution to the leadership perceptual process. The complexity of the prototype filter proposed as a theoretical model for this thesis implies that any attempt to create rules from the findings of such research is extremely difficult, since there are too many variables to control. In that sense, leadership emergence is no longer a matter of searching for standard practices but strategically searching for an understanding of what is best under specific conditions (Meindl, 1995).

Calder (1977, p. 202), more than 30 years ago, proposed to try to "sensitise" leaders to the way people perceive rather than trying to develop leadership skills and, today, in this research I propose the same thing. The knowledge of which traits or qualities people value more in their leaders can give organisations the advantage of gaining an understanding which can be used as a background for organisations to build leader development philosophies. Epitropaki and Martin (2004) suggest that management training programs should focus on making leaders aware of their followers' ILTs. For example, the current study indicated a specific prototype which the participants seemed to prefer. Educating managers about their subordinates' prototypes can help them to diagnose their followers' needs. In a following stage, leaders can seek to address these needs. The latter may lead to a better quality of

communication between leaders and followers. Consequently, such training may help to improve the quality of leader-member exchanges and, ultimately, attitudes in the workplace (Epitropaki & Martin, 2005). Going one step further, uncovering leader prototypes could help businesses in the selection of potential leaders who possess characteristics which are valued in the target population (Smith & Foti, 1998). Additional criteria for the evaluation of such selections could be the elements of facial expressivity and appearance which were found to exert a strong influence on leadership perceptions. These could be especially useful in leadership positions (e.g. a hotel manager; see Mullins & Davies, 1991; Worsfold, 1989) where communicational competence and human relations might be more essential.

On the other hand, organisations can focus on “followers training” (Schyns & Meindl, 2005, p. 16): Making people aware of their own perceptual procedures and potential biases may contribute to more realistic perceptions of leadership in the organisational context. Finally, linking leadership traits and qualities expectations (prototypes) with facial expression can help in making people conscious of the impact of facial expressions from both the leader-transmitter’s (control of facial expression) but also the receiver-follower’s or client’s (how facial expressions are perceived) point of view.

The results of the current research contribute to academic knowledge generally but also to the Cypriot organisational context specifically. As highlighted in earlier chapters, topic areas such as facial expressions and leadership perceptions were found to be underdeveloped in terms of research and professional training in Cypriot businesses (see section 1.5). A difficulty encountered in forming hypotheses and discussing results was the lack of previous research in the Cypriot culture. The fact that there are now results around the specific topic area with a Cypriot sample might facilitate relevant studies to establish and test their own theories. The development of contextual research could ultimately aid to addressing academic and organisational issues. For example, the results showed that that the Cypriot participants

examined in this thesis expect a business leader at work to carry a positive tone during communication, whilst also avoiding negative extremes. This is a useful piece of information for Cypriot theory and practice because it reveals for the first time, to my knowledge, what is considered leader-appropriate in terms of facial expression in the Cypriot organisational environment. The latter helps researchers to focus attention in specific areas such as investigating these ranges of positive expressions and how to avoid negativity in the workplace. Furthermore, educating and training on the basis of such results can eventually aid to improving organisational climate. Consequently, the present study can, hopefully, contribute to more proficient business research, organisational education, preparation and management in Cyprus.

To conclude, the process of investigating structures of leadership perception in this PhD thesis led to a number of contributions concerning academic knowledge and organisational practice. Firstly, it extended the relevant literature in two ways: by being the first piece of research investigating a match between ILTs and reactions to leaders' facial expressions, and by integrating sophisticated facial expression coding methods into the area of leadership perception. Secondly, the studies presented here addressed a theoretical problem that could, later on, provide a basis for applied methods. To be more specific, the current thesis aimed to create an understanding on how facial expressions influence leadership perceptions. Leadership was investigated as a socially constructed phenomenon emerging from perceivers (Meindl, 1995). The perspective here is facing leadership as a matter of understanding how people perceive leaders rather than trying to develop certain professional skills. The latter can help to avoid incongruencies between the prototypical leader for a specific population, and the leader organisations aim to create through management preparation. This could eventually be used as a cornerstone to shape organisational training philosophies. Thirdly, the present research introduced new contextual findings to Cypriot businesses. Topic areas such as the

one studied in this thesis can help carrying Cypriot organisational theory and practice to another level.

#### 4.5.2 Conclusion

It is very important when dealing with perception not to underestimate the role of observers in the process. The findings of this thesis showed that facial expressions appear to have a powerful influence on the perception of leadership. However, making sense of that influence was a matter of penetrating into the perceptual structures of the beholder. It seems that the final outcome of observers' leadership perceptions was a combination of all available information to understanding what happens around them. The need to make sense of the situation resulted in relying on pre-existing leadership schemas, as well as situational aspects. Therefore, understanding what is inside the perceiver's mind is significant for understanding leadership perception. On the basis of the studies included in this thesis, I conclude that it is essential for research into leadership perception to shift attention from developing certain leadership skills to increasing perceptual awareness. Only then can developing situation-relevant leadership skills start being meaningful.

## REFERENCES

- Adams, R., Ambadi, N., Macrae, C., & Kleck, R. (2006). Emotional expressions forecast approach-avoidance behavior. *Motivation and Emotion*, *30*, 179–188.
- Aguinis, H., & Henle, C. A. (2001). Effects of Nonverbal Behavior on Perceptions of a Female Employee's Power Bases. *The Journal of Social Psychology*, *141*, 537–549.
- Aguinis, H., Simonsen, M. M., & Pierce, C. A. (1998). Effects of Nonverbal Behaviour on Perceptions of Power Bases. *The Journal of Social Psychology*, *138*, 455-469.
- Alvesson, M. (1996). Leadership studies: from procedure and abstraction to reflexivity and situation. *Leadership Quarterly*, *7*, 455-485.
- Ambadar, Z., Schooler, J., & Cohn, J. (2005). Deciphering the enigmatic face: The importance of facial dynamics in interpreting subtle facial expressions. *Psychological Science*, *16*, 403-410.
- Ames, D. R., & Johar, G. V. (2009). I'll Know What You're Like When I See How You Feel: How and When Affective Displays Influence Behavior Based Impressions. *Psychological Science*, *20*, 586-593.
- Anderson, C., & Kilduff, G. J. (2009). Why do dominant personalities attain influence in face-to-face groups? The competence-signaling effects of trait dominance. *Journal of Personality and Social Psychology*, *96*, 491-503.
- Anderson, L., & Burns, R. (1989). *Research in classrooms: the study of teachers, teaching and instruction*. Oxford: Pergamon.
- Ansfield, M. E. (2007). Smiling When Distressed: When a Smile Is a Frown Turned Upside Down. *Personality and Social Psychology Bulletin*, *33*, 763-775.
- Antonakis, J., & Dalgas, O. (2009). Predicting Elections: Child's Play! *Science*, *323*, 1183.
- Arya, A., Jefferies, L., Enns, J. T., & DiPaola, S. (2006). Facial actions as visual cues for personality. *Computer animation and virtual worlds*, *17*, 371–382.
- Asch, S. E. (1946). Forming impressions of personalities. *Journal of Abnormal and Social Psychology*, *41*, 258–290.
- Ashkanasy, N. M., & Tse, B. (2000). Transformational leadership as management of emotion: A conceptual review. In N. M. Ashkanasy, C. E. Haertel, & W. Zerbe, *Emotions in the workplace: Research, theory, and practice* (pp. 221–235). Westport, CT: Quorum Books/Greenwood.
- Atkinson, A. P., Dittrich, W. H., Gemmell, A. J., & Young, A. W. (2004). Emotion perception from dynamic and static body expressions in point-light and full-light displays. *Perception*, *33*, 717-746.



Awamleh, R., & Gardner, W. L. (1999). Perceptions of Leader Charisma and Effectiveness: the Effects of Vision Content, Delivery, and Organizational Performance. *Leadership Quarterly* , 10, 345–373.

Back, E., Jordan, T. R., & Thomas, S. M. (2009). The recognition of mental states from dynamic and static facial expressions. *Visual Cognition* , 17, 1271-1286.

Bank of Cyprus. (2008). *Annual report*. Retrieved from <http://www.bankofcyprus.com/main/files/Annual%20Report%202008%20ENG.pdf>.

BBC NEWS. (2004, 06 5). <http://news.bbc.co.uk>. Retrieved 12 14, 2009, from BBC news: <http://news.bbc.co.uk/2/hi/americas/265509.stm>

Bentz, V. M., & Shapiro, J. J. (1998). *Mindful inquiry in social research*. Thousand oaks, California: Sage.

Best, J., & J., K. (1998). *Research in education (8th ed .)*. Boston: Allyn and Bacon.

Biele, C., & Grabowska, A. (2006). Sex differences in perception of emotion intensity in dynamic and static facial expressions. *Experimental brain research* . , 171, 1-6.

Biernat, M. (1995). The shifting standards model: Implications of stereotype accuracy for social judgment. In L. Yueh-Ting, L. Jussim, & C. McCauley, *Stereotype accuracy: Toward appreciating group differences* (pp. 82–114). Washington, DC: American Psychological Association.

Bono, J. E., & Ilies, R. (2006). Charisma, positive emotions and mood contagion. *The Leadership Quarterly* , 17, 317–334.

Bono, J. E., & Judge, T. A. (2004). Personality and Transformational and Transactional Leadership: A Meta-Analysis. *Journal of Applied Psychology* , 89, 901–910.

Boone, R., & Buck, R. (2003). Emotional expressivity and trustworthiness: the role of nonverbal behavior in the evolution of cooperation. *Journal of nonverbal behavior* , 27, 163-182.

Bould, E., & Morris, N. (2008). Role of motion signals in recognizing subtle facial expressions of emotion. *British Journal of Psychology* , 99, 167–189.

Bould, E., Morris, N., & Wink, B. (2008). Recognising subtle emotional expressions: The role of facial movements. *Cognition and Emotion* , 22, 1569-1587.

Bower, G. H. (1991). Mood Congruity of Social Judgments. In J. P. Forgas, *Emotion and social judgments*. (pp. 31-53). Oxford: Pergamon.

Brewer, J., & Hunter, A. (2006). *Foundations of multimethod research: Synthesizing styles*. Thousand Oaks, CA: Sage.

Broome, B. (1996). *Exploring the Greek Mosaic: A Guide to Intercultural Communication in Greece*. Yarmouth, ME.: Intercultural Press.

Bucy, E. P. (2000). Emotional and evaluative consequences of inappropriate leader displays. *Communication research* , 27, 194-226.

Bucy, E. P., & Bradley, S. D. (2004). Presidential expressions and viewer emotion: counter empathic responses to televised leader displays. *Social science information* , 43, 59-94.

Bucy, E. P., & Newhagen, J. E. (1999). The Emotional Appropriateness Heuristic: Processing Televised Presidential Reactions to the News. *Journal of Communication* , 49, 59-79.

Buller, D. B., & Aune, R. K. (1988). The Effects of Vocalics and Nonverbal Sensitivity on Compliance A Speech Accommodation Theory Explanation. *Human Communication Research* , 14, 301-332.

Burgoon, J. K., Birk, T., & Pfau, M. (1990). Nonverbal Behaviors, Persuasion, and Credibility. *Human Communication Research* , 17, 140-169.

Calder, B. (1977). An attribution theory of leadership. In B. Staw, & G. Salancik, *New directions in organizational behavior*. (pp. 179-204). Chicago: St. Claire Press.

Campbell, A., & Rushton, J. P. (1978). Bodily communication and personality. *British Journal of Social and Clinical Psychology* , 17, 31-36.

Carroll, J. M., & Russell, J. A. (1996). Do Facial Expressions Signal Specific Emotions? Judging Emotion From the Face in Context. *Journal of Personality and Social Psychology* , 70, 205-218.

Cherulnik, P. D., Donley, K. A., Wiewel, T. S., & Miller, S. R. (2001). Charisma Is Contagious: The Effect of Leaders' Charisma on Observers' Affect. *Journal of Applied Social Psychology* , 31, 2149 - 2159.

Cohn, J. F., & Ekman, P. (2008). Measuring Facial Action. In J. A. Harrigan, R. Rosenthal, & K. R. Scherer, *The new handbook of Methods in Nonverbal Behavior Research* (pp. 9-64). New York: Oxford University Press.

Cohn, J. F., Zlochoher, A. J., Lien, J., & Kanade, T. (1999). Automated face analysis by feature point tracking has high concurrent validity with manual FACS coding. *Psychophysiology* , 36, 35-43.

Conger, J. A., & Kanungo, R. N. (1994). Charismatic leadership in organizations: Perceived behavioral attributes and their measurement. *Journal of Organizationai Behavior* , 15, 439-452.

Conger, J. (1999). Charismatic and transformational leadership in organizations: an insider's perspective on these developing streams of research. *Leadership Quarterly* , 10, 145-179.

Cook, D. (1981). *A history of narrative film*. New York: Norton.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika* , 16, 297-334.

Damen, F., VanKnippenberg, B., & VanKnippenberg, D. (2008). Affective Match in Leadership: Leader Emotional Displays, Follower Positive Affect, and Follower Performance. *Journal of Applied Social Psychology* , 38, 868-902.

Darwin, C. (1872/1965). *The expression of the emotions in man and animals*. Chicago: The University of Chicago Press. (Originally published, 1872.).

Deal, I. J., & Stevenson, M. A. (1998). Perceptions of female and male managers in the 1990s: Plus ca change... *Sex Roles* , 38, 287-300.

Den Hartog, D. N., & Koopman, P. L. (2005). Implicit leadership theories of leadership at different hierarchical levels. In B. Schyns, & J. R. Meindl, *Implicit leadership theories: essays and explorations*. (pp. 135-158). Greenwich, Connecticut: Information Age Publishing.

Den Hartog, D. N., House, R. J., Hanges, P. J., Ruiz-Quintanilla, S. A., & Dorfman, P. W. (1999). Culture Specific and Cross culturally Generalizable Implicit Leadership Theories: are Attributes of Charismatic/Transformational Leadership Universally Endorsed? *Leadership Quarterly* , 10, 219–256.

Dimberg, U., & Thunberg, M. (1998). Rapid facial reactions to emotional facial expressions. *Scandinavian Journal of Psychology* , 39, 39–45.

Dion, K., Berscheid, E., & Walster, E. (1972). What is beautiful is good. *Journal of Personality and Social Psychology* . , 24, 285-290.

Dovidio, J. F., Heltman, K., Brown, C. E., Ellyson, S. L., & Keating, C. E. (1988). Power Displays Between Women and Men in Discussions of Gender-Linked Tasks: A Multichannel Study. *Journal of Personality and Social Psychology* , 55, 580-587.

Duehr, E. E., & Bono, J. E. (2006). Men women, and managers: are stereotypes finally changing? *Personnel Psychology* , 59, 815–846.

Dunbar, N., & Burgoon, J. (2005). Perceptions of power and interactional dominance in interpersonal relationships. *Journal of Social and Personal Relationships* , 22, 207–233.

Eagly, A. H., & Karau, S. J. (2002). Role Congruity Theory of Prejudice Toward Female Leaders. *Psychological Review* , 109, 573–598.

Edwards, K. (1998). The face of time: Temporal cues in facial expressions of emotion. *Psychological Science* , 9, 270–276.

Ekman, P. (2003). Darwin, deception, and facial expression. *Annals of the New York Academy of Sciences* , 1000, 205- 221.

Ekman, P. (1992). Facial expressions of emotion: new findings, new questions. *Psychological Science* , 3, 34-38.

Ekman, P. (1972). Universals and cultural differences in facial expressions of emotion. In J. Cole, *Nebraska symposium on motivation* (pp. Vol. 19, 207–283). Lincoln: University of Nebraska Press.

Ekman, P., & Friesen, W. (1978). *Facial Action Coding System: A technique for the Measurement of Facial Movement*. Palo Alto, CA: Consulting Psychologists Press.

Ekman, P., & Friesen, W. V. (1976). Measuring facial movement. *Journal of Environmental Psychology and Nonverbal Behavior*, 1, 56-75.

Ekman, P., & Oster, H. (1979). Facial Expressions of Emotion. *Annual Review of Psychology*, 30, 527-554.

Ekman, P., & Rosenberg, E. (2005). *What the face reveals: basic and applied studies of spontaneous expression using the facial action coding system. (2nd Ed)*. New York: Oxford University Press.

Ekman, P., & Rosenberg, E. (1997). *What the face reveals: basic and applied studies of spontaneous expression*. New York; Oxford: Oxford University Press.

Ekman, P., Friesen, W. V., & Hager, J. C. (2002). *Facial Action Coding System: The Manual*. USA: Research Nexus division of Network Information Research Corporation.

Epitropaki, O., & Martin, R. (2004). Implicit Leadership Theories in Applied Settings: Factor Structure, Generalizability, and Stability Over Time. *Journal of Applied Psychology*, 89, 293-310.

Fabrigar, L. R., Wegener, D. T., MacCallum, R., & Strahan, E. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological methods*, 4, 272-299.

Felfe, J., & Schyns, B. (2010). Followers' personality and the perception of transformational leadership: Further evidence for the similarity hypothesis. *British Journal of Management*, 21, 393-410.

Ferris, G. R., Bhawuk, D. P., Fedor, D. F., & Judge, T. A. (1995). Organizational politics and citizenship: Attributions of intentionality and construct definition. In M. J. Martinko, *Attribution theory: an organizational perspective*. (pp. 231-25). Delray Beach, FL: St. Lucie Press.

Fishman, D. B. (1999). *The case for pragmatic psychology*. New York: New York University Press.

Forgas, J., & George, J. (2001). Affective influences on judgments and behavior in organizations: an information processing perspective. *Organizational Behavior and Human Decision Processes*, 86, 3–34.

Frank, M. G., Ekman, P., & Friesen, W. V. (1993). Behavioral markers and recognizability of the smile of enjoyment. *Journal of Personality and Social Psychology*, 64, 83–93.

Gaddis, B., Connelly, S., & Mumford, M. D. (2004). Failure feedback as an affective event: Influences of leader affect on subordinate attitudes and performance. *Leadership Quarterly*, *15*, 663–686.

Gladwell, M. (2005). *Blink : the power of thinking without thinking*. London: Penguin.

Glaser, J., & Salovey, P. (1998). Affect in Electoral Politics. *Personality and Social Psychology Review*, *2*, 156-172.

Glomb, T. M., & Hulin, C. L. (1997). Anger and gender effects in observed supervisor-subordinate dyadic interactions. *Organizational Behavior and Human Decision Processes*, *72*, 281–307.

Goffee, R., & Jones, G. (2005). Managing authenticity. *Harvard Business Review*, *83*, 86-94.

Gordon, M. (1987). *The Stanislavsky Technique: Russia. A Workbook for Actors*. New York: Applause.

Gray, J. H., & Densten, I. L. (2007). How Leaders Woo Followers in the Romance of Leadership. *Applied Psychology: an International Review*, *56*, 558–581.

Greenwald, A. G., & Banaji, M. R. (1995). Implicit Social Cognition: Attitudes, Self-Esteem, and Stereotypes. *Psychological review*, *102*, 4-27.

Hall, J. A. (2006). Nonverbal behavior, status, and gender: how do we understand their relations? *Psychology of Women Quarterly*, *30*, 384-391.

Hall, J. A., Carter, J. D., & Horgan, T. G. (2000). Gender differences in nonverbal communication of emotion. In A. H. Fischer, *Gender and emotion: Social psychological perspectives* (pp. 97-117). Cambridge, England: Cambridge University Press.

Hall, R. J., & Lord, R. G. (1995). Multi-level Information-Processing Explanations of Followers' Leadership Perceptions. *Leadership Quarterly*, *6*, 265-287.

Hareli, S., & Hess, U. (2009). What emotional reactions can tell us about the nature of others: An appraisal perspective on person perception. *Cognition & Emotion*, *24*, 128 - 140.

Harker, L. A., & Keltne, D. (2001). Expressions of Positive Emotion in Women's College Yearbook Pictures and Their Relationship to Personality and Life Outcomes Across Adulthood. *Journal of Personality and Social Psychology*, *80*, 112-124.

Harwood, N., Hall, L., & Shinkfield, A. (1999). Recognition of facial emotional expressions from moving and static displays by individuals with mental retardation. *American Journal on Mental Retardation*, *104*, 270–278.

Hassin, R. R., Bargh, J. A., & Uleman, J. S. (2002). Spontaneous causal inferences. *Journal of Experimental Social Psychology*, *38*, 515–522.

Hassin, R., & Trope, Y. (2000). Facing faces: Studies on the cognitive aspects of physiognomy. *Journal of Personality and Social Psychology*, 78, 837–852.

Heilman, M. (1983). Sex bias in work settings: The lack of fit model. In B. Staw, & L. Cummings, *Research in organizational behavior* (p. Vol 5). Greenwich, CT: JAI.

Hendriks, M., & Vingerhoets, A. (2006). Social messages of crying faces: Their influence on anticipated person perception, emotion and behavioral responses. *Cognition & Emotion*, 20, 878-886.

Hess, U., Adams, R. B., & Kleck, R. E. (2004). Facial appearance, gender, and emotion expression. *Emotion*, 4, 378–388.

Hess, U., Blairy, S., & Kleck, R. E. (2000). The Influence of Facial Emotion Displays, Gender, and Ethnicity on Judgments of Dominance and Affiliation. *Journal of Nonverbal Behavior*, 4, 265-283.

Hess, U., Senecal, S., Kirouac, G., Herrera, P., Philippot, P., & Kleck, R. E. (2000). Emotional expressivity in men and women: Stereotypes and self-perceptions. *Cognition and Emotion*, 14, 609–642.

Hinton, P. (1993). *The Psychology of Interpersonal Perception*. London: Routledge.

Hochschild, A. R. (1983). *The managed heart: Commercialization of human feeling*. Berkeley: University of California Press.

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

Hogg, M. A. (2001). A Social Identity Theory of Leadership. *Personality and Social Psychology Review*, 5, 184–200.

House, R. J. (1977). A 1976 theory of charismatic leadership. In J. Hunt, & I. Larson, *Leadership: the cutting edge*. (pp. 189-207). Carbondale, IL: Southern Illinois University Press.

House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W., & Gupta, V. (2004). *Culture, leadership, and organizations: The GLOBE study of 62 societies*. London: Sage.

Howe, K. R. (1988). Against the quantitative-qualitative incompatibility thesis, or, Dogmas die hard. *Educational Researcher*, 17, 10–16.

Humphrey, R. H. (2002). The many faces of emotional leadership. *The Leadership Quarterly*, 13, 493–504.

Hussey, J., & Hussey, R. (1997). *Business Research: A Practical Guide for Undergraduate and Postgraduate Students*. Macmillan Press: Basingstoke, UK.

Izard, C. E., Dougherty, L. M., & Hembree, E. A. (1983). *A system for identifying affect expressions by holistic judgments*. Unpublished manuscript: University of Delaware.

Izard, C. (1983). *The maximally discriminative facial movement coding system. [MAX.]*. Unpublished manuscript: University of Delaware.

Jenkins, A. M., & Johnson, R. D. (1977). What The Information Analyst Should Know About Body Language. *MIS Quarterly* , 1, 33-47.

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed Methods Research: A Research Paradigm Whose Time Has Come. *Educational Researcher* , 33, 14–26.

Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a Definition of Mixed Methods Research. *Journal of Mixed Methods Research* , 1, 112-133.

Jolliffe, I. (1989). *Principal Component Analysis*. New York: Springer-Verlag.

Judge, T. A., Bono, J. E., Ilies, R., & Gerhardt, M. W. (2000). Personality and Leadership: A Qualitative and Quantitative Review. *Journal of Applied Psychology* , 87, 765–780.

Kalma, A. P., Visser, L., & Peeters, A. (1993). Sociable and aggressive dominance: Personality differences in leadership style? *Leadership Quarterly* , 4, 45–64.

Kamachi, M., Bruce, V., Mukaida, S., Gyoba, J., Yoshikawa, S., & Akamatsu, S. (2001). Dynamic properties influence the perception of facial expressions. *Perception* , 30, 875-887.

Keating, C. A., Mazur, & Segall, M. (1981). A Cross-cultural Exploration of Physiognomic Traits of Dominance and Happiness. *Ethology and Sociobiology* , 1981, 41-48.

Keating, C. F., Mazur, A., & Segall, M. H. (1977). Facial Gestures Which Influence the Perception of Status. *Sociometry* , 40, 374-378.

Keating, C. (2003). Messages from Face and Body: Women, Men, and the Silent Expression of Social Status. In D. S. Cobble, B. Hutchison, & A. B. Chaloupka, *Femininities, masculinities, and the politics of sexual difference(s)* (pp. 65-70). USA: Rutgers, the State University.

Keller, T. (1999). Images of the Familiar: Individual Differences and Implicit Leadership Theories. *Leadership Quarterly* , 10, 589–607.

Kenney, R. A., Blascovich, J., & Shaver, P. R. (1994). Implicit Leadership Theories: Prototypes for New Leaders. *Basic and Applied Social Psychology* , 15, 409-437.

Kenny, D. A. (1994). *Interpersonal perception: A social relations analysis*. New York: Guilford.

Kilts, C. D., Egan, G., Gideon, D. A., Ely, T. D., & Hoffman, J. M. (2003). Dissociable Neural Pathways Are Involved in the Recognition of Emotion in Static and Dynamic Facial Expressions. *NeuroImage* , 18, 156–168.

Kiohnen, E. C., & Shanhong, L. (2003). Interpersonal Attraction and Personality: What Is Attractive-Self Similarity, Ideal Similarity, Complementarity, or Attachment Security? *Journal of Personality and Social Psychology* , 85, 709-722.

Knutson, B. (1996). Facial Expressions of Emotion Influence Interpersonal Trait Inferences. *Journal of Nonverbal Behavior* , 20, 165-182.

Konst, D., & VanBreukelen, W. (2005). Effects of Hierarchical positions of target persons on social inference: Schema Use and Schema Content in Perceiving Leaders and Subordinates. In B. Schyns, & J. Meindl, *Implicit Leadership Theories: Essays and Explorations. A volume in the Leadership*. Greenwich, CT, USA: Horizons series, Information Age Publishing.

Krahmer, E., & Swerts, M. (2005). How children and adults produce and perceive uncertainty in audiovisual speech. *Language and Speech* , 48, 29-53.

Krumhuber, E., & Kappas, A. (2005). Moving Smiles: The Role of Dynamic Components for the Perception of the Genuineness of Smiles. *Journal of Nonverbal Behavior* , 29, 3-24.

Krumhuber, E., Manstead, A. S., Cosker, D., Marshall, D., & Rosin, P. L. (2009). Effects of Dynamic Attributes of Smiles in Human and Synthetic Faces: A Simulated Job Interview Setting. *Journal of Nonverbal Behavior* , 33, 1-15.

Krumhuber, E., Manstead, A. S., Cosker, D., Marshall, D., & Rosin, P. L. (2007). Facial Dynamics as Indicators of Trustworthiness and Cooperative Behavior. *Emotion* , 7, 730-735.

Krumhuber, E., Manstead, A., & Kappas, A. (2006). Temporal Aspects of Facial Displays in Person and Expression Perception: The Effects of Smile Dynamics, Head-tilt, and Gender. *Journal of Nonverbal Behaviour* , 31, 39-56.

Kunda, Z. (2001). *Social cognition: making sense of people*. Cambridge MA: MIT press.

LaCrosse, M. B. (1975). Nonverbal behavior and perceived counselor attractiveness and persuasiveness. *Journal of Counseling Psychology* , 22, 563-566.

LaFrance, M., Hecht, M. A., & Levy Paluck, E. (2003). The contingent smile: A meta-analysis of sex differences in smiling. *Psychological Bulletin* , 129, 305-334.

Lau, S. (1982). The effect of smiling on person perception. *The journal of social psychology* , 117, 63-67.

LeGal, P. M., & Bruce, V. (2002). Evaluating the independence of sex and expression in judgments of faces. *Perception & Psychophysics* , 64, 230-243.

Lewis, K. M. (2000). When leaders display emotion: how followers respond to negative emotional expression of male and female leaders. *Journal of Organizational Behavior* , 21, 221 - 234.



Ling, P. J. (2003, 04 01). *BBC History*. Retrieved 12 14, 2009, from BBC: [http://www.bbc.co.uk/history/recent/martin\\_luther\\_king\\_01.shtml](http://www.bbc.co.uk/history/recent/martin_luther_king_01.shtml)

Ling, W., Chia, R. C., & Fang, L. (2000). Chinese Implicit Leadership Theory. *The Journal of Social Psychology*, *140*, 729-739.

Lord, R. G., Brown, D. J., Harvey, J. L., & Hall, R. J. (2001). Contextual constraints on prototype generation and their multilevel consequences for leadership perceptions. *The Leadership Quarterly*, *12*, 311–338.

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

Lundqvist, D. (2003). *The Face of Wrath: How Facial Emotion Captures Visual Attention*. Stockholm: Karolinska University Press.

Madera, J. M., & Smith, B. D. (2009). The effects of leader negative emotions on evaluations of leadership in a crisis situation: The role of anger and sadness. *The Leadership Quarterly*, *20*, 103–114.

Manicas, P. T., & Secord, P. (1983). implications for psychology of the new philosophy of science. *American psychologist*, *38*, 399-413.

Marsh, A. A., Adams, R. B., & Kleck, R. E. (2005). Why Do Fear and Anger Look the Way They Do? Form and Social Function in Facial Expressions. *Society for Personality and Social Psychology*, *31*, 73-86.

Masip, J., Garrido, E., & Herrero, C. (2004). Facial appearance and impressions of credibility: The effects of facial babyishness and age on person perception. *International Journal of Psychology*, *39*, 276–289.

Masters, R. D., & Sullivan, D. G. (1989). Nonverbal Displays and Political Leadership in France and the United States. *Political Behavior*, *11*, 123-156.

Matsumoto, D. (1990). Cultural similarities and differences in display rules. *Motivation and Emotion*, *14*, 195-214.

Matsumoto, D., & Ekman, P. (1989). American-Japanese cultural differences in intensity ratings of facial expressions of emotion. *Motivation and Emotion*, *13*, 143-157.

Matsumoto, D., & Hee Yoo, S. (2005). Culture and Applied Nonverbal Communication. In R. E. Riggio, & R. S. Feldman, *Applications of Nonverbal Communication*. (pp. 255-276). Mahwah, NJ.: Lawrence Erlbaum.

Matsumoto, D., & Kudoh, T. (1993). American-Japanese cultural differences in attributions of personality based on smiles. *Journal of Nonverbal Behavior*, *17*, 231-243.

Mazur, A., & Mueller, U. (1996). Facial Dominance. In A. Somit, & S. Peterson, *Research in Biopolitics* (pp. 99-111). London: JAI Press.

McArthur, L. Z., & Baron, R. M. (1983). Toward an ecological theory of social perception. *Psychological Review*, *90*, 215-238.

McClure, E. B. (2000). A meta-analytic review of sex differences in facial expression processing and their development in infants, children, and adolescents. *Psychological Bulletin*, *126*, 424-453.

Medvedeff, M. E. (2008). *Leader affective displays during a negative work event: influences on subordinate appraisals, affect, and coping strategies*. (Doctoral dissertation, University of Akron): Retrieved from <http://etd.ohiolink.edu/send-pdf.cgi/Medvedeff%20Megan.pdf?akron1207753447>.

Mehrabian, A. (1972). *Nonverbal communication*. Chicago: Aldine- Atherton.

Meindl, J. R. (1995). The romance of leadership as a follower-centric theory: a social constructionist approach. *Leadership Quarterly*, *6*, 329-341.

Mendvedeff, M., & Lord, R. (2007). Implicit leadership theories as dynamic processing structures. In B. Shamir, R. Pillai, M. Bligh, & M. Uhl-Bien, *Follower-centered perspectives on leadership*. (pp. 19-50). Greenwich, CT: information Age Publishing.

Montepare, J. M., & Dobish, H. (2003). The Contribution of Emotion Perceptions and Their Overgeneralizations to Trait Impressions. *Journal of Nonverbal Behavior*, *27*, 237-254.

Mullins, L., & Davies, I. (1991). What makes for an effective hotel manager? *International Journal of Contemporary Hospitality Management*, *3*, 22-25.

Murphy, N. (2007). Appearing Smart: The Impression Management of Intelligence, Person Perception Accuracy, and Behaviour in Social Interaction. *Personality and Social Psychology Bulletin*, *33*, 325-339.

Neth, D., & Martinez, A. M. (2009). Emotion perception in emotionless face images suggests a norm-based representation. *Journal of Vision*, *9*, 1-11.

Newcombe, M. J., & Ashkanasy, N. M. (2002). The role of affect and affective congruence in perceptions of leaders: an experimental study. *The Leadership Quarterly*, *13*, 601-614.

Nisbett, R. E., & Wilson, T. D. (1977). The halo effect: Evidence for unconscious alteration of judgments. *Journal of Personality and Social Psychology*, *35*, 250-256.

Norusis, M. (1992). *SPSS for Windows*. Chicago, IL: SPPS Inc.

Nye, J., & Forsyth, D. R. (1991). The effects of prototype biases on leadership appraisals: a test of leadership categorization theory. *Small group research*, *22* (3), 360-379.

Offerman, L. R., Kennedy, J. K., & Wirtz, P. W. (1994). Implicit leadership theories: Content, structure, and generalizability. *Leadership Quarterly*, *5*, 43-58.

Otta, E., Lira, B. B., Delevati, N. M., Cesar, O. P., & Pires, C. S. (1994). The effect of smiling and head tilting on person perception. *The Journal of Psychology*, *128*, 323–331.

Papalexandris, N. (2007). Greece: From Ancient Myths to Modern Realities. In J. S. Chhokar, F. C. Brodbeck, & R. J. House, *Culture and leadership across the world: The GLOBE book of in-depth studies of 25 societies*. (pp. 767-802). Mahwah, NJ: Lawrence Erlbaum Associates.

Phillips, J. S., & Lord, R. (1982). Schematic information processing and perceptions of leadership in problem solving groups. *Journal of Applied Psychology*, *67*, 486-492.

Powell, G. N., Butterfield, D. A., & Parent, J. D. (2002). Gender and managerial stereotypes: Have the times changed? *Journal of Management*, *28*, 177-193.

Pugh, S. D. (2001). Service with a smile: Emotional contagion in the service encounter. *Academy of Management Journal*, *44*, 1018–1027.

Rafaeli, A., & Sutton, R. I. (1987). Expression of emotion as part of the work role. *Academy of Management Review*, *12*, 23-37.

Ratner, C. (1989). A Social Constructionist Critique of Naturalistic Theories of Emotion. *Journal of Mind and Behavior*, *10*, 211-230.

Ravaja, N., Kallinen, K., Saari, T., & Keltikangas-Ja. (2004). Suboptimal Exposure to Facial Expressions When Viewing Video Messages From a Small Screen: Effects on Emotion, Attention, and Memory. *Journal of Experimental Psychology*, *10*, 120–131.

Reissland, N., & Harris, P. (1991). Childrens use of display rules in pride-eliciting situations. *British Journal of Developmental Psychology*, *9*, 431-435.

Remland, M. (1981). Developing Leadership Skills in Nonverbal Communication: A Situational Perspective. *Journal of Business Communication*, *18*, 17-29.

Richell, R., Mitchell, D., Peschardt, K., Winston, J., Leonard, A., Dolan, R., et al. (2005). Trust and distrust: the perception of trustworthiness of faces in psychopathic and non-psychopathic offenders. *Personality and Individual Differences*, *38*, 1735–1744.

Roberts, L. M. (2005). Changing faces: Professional image construction in diverse organizational settings. *Academy of Management Review*, *30*, 685-711.

Robson, C. (2002). *Real World Research* (2 ed.). Oxford: Blackwell.

Rockwell, P., & Hubbard, A. E. (1999). The Effect of Attorneys' Nonverbal Communication on Perceived Credibility. *The Journal of Credibility Assessment and Witness Psychology*, *2*, 1-13.

Roseman, I., Antoniou, A., & Jose, P. (1996). Appraisal determinants of emotions: Constructing a more accurate and comprehensive theory. *Cognition and Emotion*, *10*, 241–277.

Rosenberg, E. (2005). The study of spontaneous facial expressions in psychology. In P. Ekman, & E. Rosenberg, *What the face reveals: basic and applied studies of spontaneous expression using the facial action coding system. (2nd Ed)* (pp. 3-17). New York: Oxford University press.

Rosenthal, R. (2008). Conducting judgment studies: Some methodological issues. In J. A. Harrigan, R. Rosenthal, & K. R. Scherer, *The new handbook of Methods in Nonverbal Behavior Research.* (pp. 199-234). New York: Oxford University Press.

Rosip, J. C., & Hall, J. A. (2004). Knowledge of nonverbal cues, gender, and nonverbal decoding accuracy. *Journal of Nonverbal Behavior* , 28, 267-286.

Rubin, R. S., Munz, D., & Bommer, W. H. (2005). Leading from within: the Effects of Emotion Recognition and Personality on Transformational Leadership Behavior. *Academy of Management Journal* , 48, 845–858.

Russell, J. A., Bachorowski, J., & Fernandez-Dols, J. M. (2003). Facial and vocal expressions of emotion facial and vocal expressions of emotion. *Annual Review of Psychology* , 54, 329–349.

Sayer, A. (2000). *Realism and social science.* London: Sage.

Sayette, M. A., Cohn, J. F., Wertz, J. M., Perrott, M. A., & Parrot, D. J. (2004). A Psychometric Evaluation of the Facial Action Coding System for Assessing Spontaneous Expression. *Journal of nonverbal behavior* , 25, 167-185.

Schein, V., Mueller, R., Lituchy, T., & Liu, J. (1996). Think manager-think male: a global phenomenon? *Journal of Organizational Behavior* , 17, 33-41.

Scherer, K. (1999). Appraisal theory. In T. Dalgleish, & M. Power, *Handbook of Cognition and Emotion.* (pp. 637–663). New York: John Wiley.

Schilling, J. (2006). On the pragmatics of qualitative assessment: designing the process for content analysis. *European Journal of Psychological Assessment* , 22, 28-37.

Schmid, M. M., & Hall, J. A. (2004). Who is the boss and who is not? Accuracy of judging status. *Journal of Nonverbal Behavior* , 28, 145-165.

Schyns, B., & Meindl, J. R. (2005). An overview of implicit leadership theories and their application in organizational practice. In B. Schyns, & J. R. Meindl, *Implicit leadership theories: essays and explorations.* (pp. 15-36). Connecticut, Greenwich: Information Age Publishing.

Schyns, B., & Sanders, K. (2007). In the Eyes of the Beholder: Personality and the Perception of Leadership. *Journal of Applied Social Psychology* , 37, 2345–2363.

Schyns, B., Felfe, J., & Blank, H. (2007). Is Charisma Hyper-Romanticism? Empirical Evidence from New Data and a Meta-Analysis. *Applied Psychology: an International Review* , 56, 505–527.

Sczesny, S. (2005). Gender Stereotypes and Implicit Leadership Theories. In B. Schyns, & J. R. Meindl, *Implicit Leadership Theories: Essays and explorations*. (pp. 159-172). Greenwich, Connecticut: Information Age Publishing Inc.

Secord, P. F. (1958). Facial features and inference processes in interpersonal perception. In R. Taguiri, & L. Petrullo, *Person Perception and Interpersonal Behavior*. (pp. 300-315). Stanford, CA: Stanford University Press.

Shamir, B. (1995). Social distance and charisma: Theoretical notes and an exploratory study. *Leadership Quarterly*, 6, 19-47.

Shavelson, R. (1996). *Statistical reasoning for the behavioral sciences (3rd Edition)*. Boston: Allyn and Bacon.

Shea, C. M., & Howell, J. M. (1999). Charismatic Leadership and Task Feedback: A Laboratory Study of their effects on Self-Efficacy and Task Performance. *Leadership Quarterly*, 10, 375-396.

Smith, J. A., & Foti, R. J. (1998). A pattern approach to the study of leadership emergence. *Leadership quarterly*, 9, 147-160.

Snodgrass, J. (1992). *Judgment of feeling states from facial behavior: A bottom-up approach*. Unpublished doctoral dissertation: University of British Columbia.

Stanislavski, C. (1965). *An actor prepares*. New York: Theater Arts Books.

Stewart, P., Waller, B., & Schubert, J. (2009). Presidential speech making style: Emotional response to micro-expressions of facial affect. *Motivation and Emotion*, 33, 125-135.

Sullivan, D. G., & Masters, R. D. (1988). "Happy Warriors": Leaders' Facial Displays, Viewers' Emotions, and Political Support. *American Journal of Political Science*, 32, 345-368.

Surakka, V., & Hietanen, J. K. (1998). Facial and emotional reactions to Duchenne and non Duchenne smiles. *International Journal of Psychophysiology*, 29, 23-33.

Sutton, R. I., & Rafaeli, A. (1988). Untangling the relationship between displayed emotions and organizational sales: the case of convenience stores. *Academy of Management Journal*, 31, 461-487.

Sy, T., Cote', S., & Saavedra, R. (2005). The Contagious Leader: Impact of the Leader's Mood on the Mood of Group Members, Group Affective Tone, and Group Processes. *Journal of Applied Psychology*, 90, 295-305.

Tashakkori, A., & Teddlie, T. (1998). *Mixed methodology: Combining qualitative and quantitative approaches*. Thousand Oaks, Calif: Sage.

Tassinari, L. G., & Cacioppo, J. T. (1992). Unobservable Facial Actions and Emotion. *Psychological Science*, 3, 28-33.

Thorsten, H., Groth, M., Paul, M., & Gremler, D. D. (2006). Are All Smiles Created Equal? How Emotional Contagion and Emotional Labor Affect Service Relationships. *Journal of Marketing* , 70, 58-73.

Tiedens, L. Z. (2001). Anger and Advancement Versus Sadness and Subjugation: The Effect of Negative Emotion Expressions on Social Status Conferral. *Journal of Personality and Social Psychology* , 80, 86-94.

Todorov, A., Said, C. P., Engell, A. D., & Oosterhof, N. N. (2008). Understanding evaluation of faces on social dimensions. *Trends in Cognitive Sciences* , 12, 455-460.

van Beek, Y., & Dubas, J. S. (2008). Age and Gender Differences in Decoding Basic and Non-basic Facial Expressions in Late Childhood and Early Adolescence. *Journal of Nonverbal Behavior* , 32, 131-145.

Van Kleef, G., Homan, A., Beersma, B., van Knippenberg, D., van Knippenberg, B., & Damen, F. (2009). Searing sentiment or cold calculation? The effects of leader emotional displays on team performance depend on follower epistemic motivation. *Academy of management journal* , 52, 562-580.

Vonk, R. (1994). Trait Inferences, Impression Formation, and Person Memory: Strategies in Processing Inconsistent Information about Persons. *European Review of Social Psychology* , 5, 111-149.

Wallbott, H. (1988). In and out of context: Influences of facial expression and context information on emotion attributions. *British Journal of Social Psychology* , 27, 357-369.

Wehrle, T., Kaiser, S., Schmidt, S., & Scherer, K. R. (2000). Studying the dynamics of emotional expression via synthesized facial muscle movements. *Journal of Personality and Social Psychology* , 78, 105-119.

Wild, B., Erb, M., & Bartels, M. (2001). Are emotions contagious? Evoked emotions while viewing emotionally expressive faces: quality, quantity, time course and gender differences. *Psychiatry Research* , 102, 109-124.

Willis, J., & Todorov, A. (2006). First Impressions Making Up Your Mind After a 100-Ms Exposure to a Face. *Psychological science* , 17, 592-598.

Worsfold, P. (1989). A personality profile of the hotel manager. *International journal of hospitality management* , 8, 51-62.

Yardley, L., & Bishop, F. (2007). Mixing qualitative and quantitative methods: a pragmatic approach. In C. Willig, & W. Stainton-Rogers, *Handbook of Qualitative Research Methods in Psychology* (pp. 352-367). London, UK: Sage.

Zebrowitz, L. A. (1997). *Reading faces : window to the soul?* Boulder; Press, Oxford: Westview.

Zebrowitz, L. A., & Montepare, J. M. (2008). Social Psychological Face Perception: Why Appearance Matters. *Social and Personality Psychology Compass* , 2, 1497-1517.

Zebrowitz, L. A., Fellous, J., Mignault, A., & Andreoletti, C. (2003). Trait Impressions as Overgeneralized Responses to Adaptively Significant Facial Qualities: Evidence from Connectionist Modeling. *Personality and Social Psychology Review* , 7, 194-215.

Zimbardo, P. G., & Leippe, M. R. (1991). *The psychology of attitude change and social influence*. New York: McGraw-Hill.

## APPENDICES



**APPENDIX A**  
STUDIES CONNECTING FACIAL EXPRESSION AND TRAIT INFERENCES

<b>Authors</b>	<b>Manipulation</b>	<b>Personality traits studied</b>
Aguinis, Simonsen, and Pierce (1998)	Relaxed versus nervous facial expression (not coded) (male actors)	Higher credibility and power
Aguinis and Henle (2001)	Displaying an incongruent with gender role expectations (female actor) relaxed versus nervous facial expression (not coded)	Lower credibility and power
Ansfield (2007)	Smiling when confronted with negative emotional events	Lower likeability
Arya, Jefferies, Enns, and DiPaola (2006)	Head tilting and gaze aversion influenced.	Dominance
Arya, Jefferies, Enns, and DiPaola (2006)	Eyebrow raising, blinking, head tilting and nodding	Believability
Arya, Jefferies, Enns, and DiPaola (2006)	Expressions of smiling and contempt	Affiliation
Boone and Buck (2003)	Emotional expressivity	Trustworthiness
Burgoon, Birk, and Pfau, (1990)	Greater vocal and facial pleasantness, with greater facial expressiveness	Competence
Burgoon, Birk, and Pfau, (1990)	Vocal pleasantness (especially fluency and pitch variety), kinesic proxemic immediacy, facial expressiveness, and kinesic relaxation (especially high random movement but little tension).	Persuasiveness
Campbell and Rushton (1978)	Targets who smiled less while listening to a confederate speak were perceived as significantly more intelligent	Intelligence
Dunbar and Burgoon (2005)	Relaxed facial expressions	Higher credibility and power

Halberstadt and Saitta (1987)	Non-smiling	Dominance
Hess, Blairy, and Kleck (2000)	Both subtle and intense facial expression (light smile)	Affiliation
Hess, Blairy, and Kleck (2000)	Intense facial expressions (strong frowns)	Dominance
Hendriks and Vingerhoets (2006)	Crying faces	Instability
Hendriks and Vingerhoets (2006)	Crying faces	Less aggressive
Keating, Mazur, and Segall (1977)	Dominant significantly more often when models posed with lowered eyebrows than when they posed with raised eyebrows	Dominance
Keating, Mazur, and Segall (1981)	Non-smiling/dominance association	Dominance
Knutson (1996)	Angry and disgust expressions	High dominance, low affiliation
Knutson (1996)	Happy expressions	High dominance and affiliation
Knutson (1996)	Fearful and sad expressions	Low dominance
Krahmer and Swerts (2005)	It was found that when adult speakers were uncertain they were more likely to produce fillers, delays, high intonation, eyebrow movements, and "funny faces."	Uncertainty
Krumhuber, Manstead, Cosker, Marshall, and Rosin (2007)	Smiling partners over non-expressive partners (facial expression sophisticated methods)	Trustworthiness
LaCrosse (1975)	Counsellors who smiled, made eye contact, and gestured more often were perceived as more competent than counsellors who did these things less often.	Competence
LeGal and Bruce (2002)	Surprised faces more feminine than angry ones	Masculinity
Lau (1982)	Smiling person in comparison with a non-smiling person.	Intelligence, warmth

Marsh, Adams, and Kleck, (2005)	Anger	Independence, strength, dominance, masculinity, coldness, and shrewdness
Marsh, Adams, and Kleck, (2005)	Fear	Dependence, weakness, submissiveness, femininity, warmth, and naïveté
Matsumoto and Kudoh (1993)	Smiling targets comparing to neutral	High affiliation
Montepare and Dobish (2003)	Happy and surprised facial expressions	High dominance and affiliation
Montepare and Dobish (2003)	Angry facial expressions	High dominance, low affiliation
Montepare and Dobish (2003)	Sad and fear expressions	Low dominance
Murphy (2007)	Looked more while listening and while speaking, had more serious facial expressions, sat more upright, and did less self-touching than their Control counterparts.	Intelligence
Otta, Lira, Delevati, Cesar, and Pires (1994)	Smiling	Reliability, intelligence, sympathy, sincerity
Ravaja, Kallinen, Saari, and Keltikangas-Ja (2004)	Suboptimal Exposure to coded happy Facial Expressions	Trustworthiness
Remland (1981)	Unresponsive head and facial displays (e.g., not smiling at a joke or not nodding in agreement)	High status
Richell et al., (2005)	Negatively correlated with, in particular, ratings of anger	Trustworthiness

Rockwell and Hubbard (1999)	Attorneys with greater facial expression and greater pitch variety were perceived as less competent.	competence
Rockwell and Hubbard (1999)	Greater facial expression, pitch variety, and tempo variety	Less trustworthiness
Schmid and Hall (2004)	Downward head tilt and lowered eyebrows	High status
Tiedens (2001)	More status to targets who express anger than to targets who express sadness	Status

---

*Note.* Table entries are restricted with the criterion of the traits included to be relevant with traits included in ILTs research.

## **APPENDIX B** **ETHICS**

### **PARTICIPANT INFORMATION SHEET**

**Project title: Leaders' use of facial expression to manage impression.**

You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully'.

I would like to ask you to complete a maximum of 10 minutes questionnaire which will help me with my PhD research which focuses on the area of leadership. The questionnaires aim to discover Implicit Leadership Perception in the Cypriot context and they are going to be available for anyone who is interested in the area of leadership.

You have been chosen to take part because the study concerns the area of organizational behaviour and your organization has agreed participate in the current research. Therefore, the possible participants are going to be people from the current organization.

It is up to you to decide whether or not to take part. If you decide to proceed by completing the questionnaire you will be given this information sheet to keep and you are pleased to answer what you really feel because your true perception it is what I aim for. If you choose to take part you are still free to withdraw at any time and without giving a reason. The procedure is simple you are going to watch some images or videos and then you are going to be asked to rate them in a questionnaire and answer some simple questions. Remember, there are not right or wrong answers.

Except giving away 10 minutes of your time, no other 'costs' are involved in taking part in the study. The advantages of taking part to the research are to help creating some contextual feedback for your organization and update your knowledge on the subject covered from the study.

The data will be kept carefully; no names will be recorded, and after the research is over the data will be disposed properly. Confidentiality will be assured for respondents since the questionnaires are anonymous and no one else except the researcher will interact with the data. Furthermore, the nature of the answers to the questions asked

cannot reveal personal identities as they reveal attitudes and non character specific and personal information.

The results of the study will be used in my dissertation thesis for the PhD in Human Resources Marketing and Management at the University of Portsmouth Business School. Furthermore, parts of the thesis containing this information may be published. A copy of the abstract is going to be acknowledged to all participants as soon as the study is completed. For any individuals that want to obtain a copy of the published research they can contact the researcher or supervisor to arrange such a request. Finally, the research has been approved by the University of Portsmouth Business School Ethics Review Process.

For more information, feel free to navigate through my webpage from the University of Portsmouth or even contact me:  
<http://www.port.ac.uk/departments/academic/hrmm/research/humanresourcemanagement/HRPhDStudents/thesistitle,77033,en.html>

My name: Savvas Trichas: [savvas\\_982@hotmail.com](mailto:savvas_982@hotmail.com)

My director of studies: Dr Birgit Schyns.

If you have any concerns about this study, or the way in which it was conducted you should contact the supervisor of the project using the contact information provided above. If your concerns are not dealt with then you can contact the Portsmouth Business School Ethics Committee (see <http://www.port.ac.uk/departments/faculties/portsmouthbusinessschool/pbsethics/>)

Do you have any questions about this study that you would like to ask now?

*Thank you for taking time to read the information sheet!*

Date: .../.../2009

**CONSENT FORM**

Full title of project: Leaders’ use of facial expression to manage impression.

Name of researcher: Savvas Trichas

Contact details: savvas\_982@hotmail.com

Please tick the box if you agree with the following statements:

1. I confirm that I have read and understand the information sheet dated 24/11/2008 for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.	
3. I agree to the use the study’s results, and of anonymised quotes in publications.	
4. I agree to take part in the above study.	

Name of Participant

Date

Signature

.....

...../...../.....

.....

Name of Researcher

Date

Signature

.....

...../...../.....

.....

## **LETTER OF INVITATION TO PARTICIPANTS**

My name is Savvas Trichas,

I am pleased to tell you that your organization has accepted to participate in the study I am conducting. You are, now, being invited also as an individual, to take part in a research study concerning leadership behaviour which will help me with my PhD research and your organization by acknowledging contextual insights from a systematic research which will help organizational development to the area of leadership. You do not have to take part but if you do decide to participate you should know that the procedures involved are quick and easy and they will not affect your normal treatment. The information collected is going to remain anonymous and confidential. I hope you will honor me with your participation, but feel free to refuse. Either way I thank you for your time.



Dear student,

I would like to ask you to complete a brief (10 minutes) questionnaire which will help me set up some boundaries about my research. The questionnaires aim to discover Implicit Leadership Perception in the Cypriot context and the results are going to be available for anyone who is interested in leadership. If you decide to proceed by completing the questionnaire please answer what you really feel because your true perception it is what I aim for. The questionnaires are and going to remain anonymous and confidential. If for any way you feel that you do not want to complete the questionnaire please return it to me, or else I will consider that I have your permission to use the information you gave me for the purposes of my research. Either way I thank you for your time.

**APPENDIX C**  
**QUESTIONNAIRES: STUDY 1**

**Part A**

*a. General information*

1. Gender:            Male                       Female

2. Age: .....

3. Nationality: .....

4. Education

    Degree: .....

    Postgraduate studies: .....

    Knowledge on Communication in general or Nonverbal Communication (if yes  
    clarify            as            briefly            as            you            can):

    .....  
    .....

*b. Main subject*

In the current questionnaire, the word **business leader**, will refer to a person in a high organizational position who is successful on leading groups of people.

5. Title: would you recognize a business leader before you talk to him?

Imagine that you are watching at the TV with **no sound**, you see a person and you immediately think “there is a business leader”. Describe the scene exactly the way you imagine it. What behaviours made you think that that person is a business leader?

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

.....

.....

6. Which of the personality traits are characteristic to a successful business leader?  
 Tick the box that represents your opinion. The boxes range from 0-10 with 0 = “not at all characteristic” and 10 = “extremely characteristic”

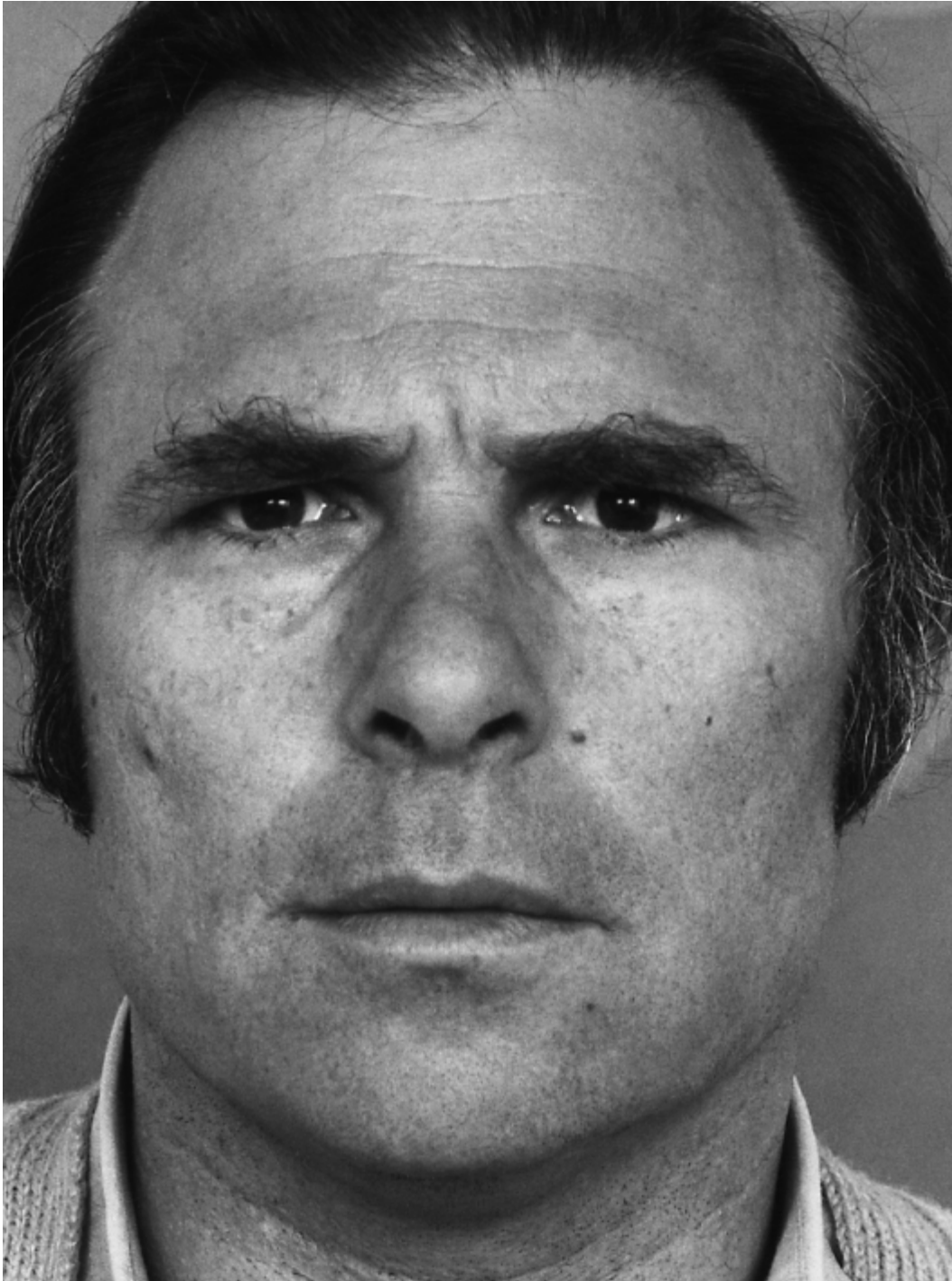
Not at all Characteristic  → Extremely Characteristic

	0	1	2	3	4	5	6	7	8	9	10
Understanding											
Helpful											
Sensitive											
Warm											
Sympathetic											
Forgiving											
Sincere											
Credible											
Honest											
Trustworthy											
Uncertain											
Intelligent											
Clever											
Knowledgeable											
Educated											
Wise											
Intellectual											
Competent											
Dedicated											
Hard-working											
Bold											
Dynamic											
Strong											

Energetic											
Charismatic											
Decisive											
Determined											
Confident											
Expressiveness											
Likeable											
Charming											
Extraverted											
Positive											
Sociable											
Outgoing											
Enthusiastic											
Antisocial											
Domineering											
Pushy											
Dominant											
Foxy											
Selfish											
Loud											
Irritable											
Masculine											
Male											
Stressful											
Smiley											
Attractive											

**Part B1**

- Assume that the gentleman you see at the photo is working at a well known Cypriot organization.



1. Could that person be a business leader? Why?

.....  
 .....  
 .....

2. From a scale 0-10 with 10 being the maximum score what is the overall leadership score that you would give to that man by just seeing his face?

Score:

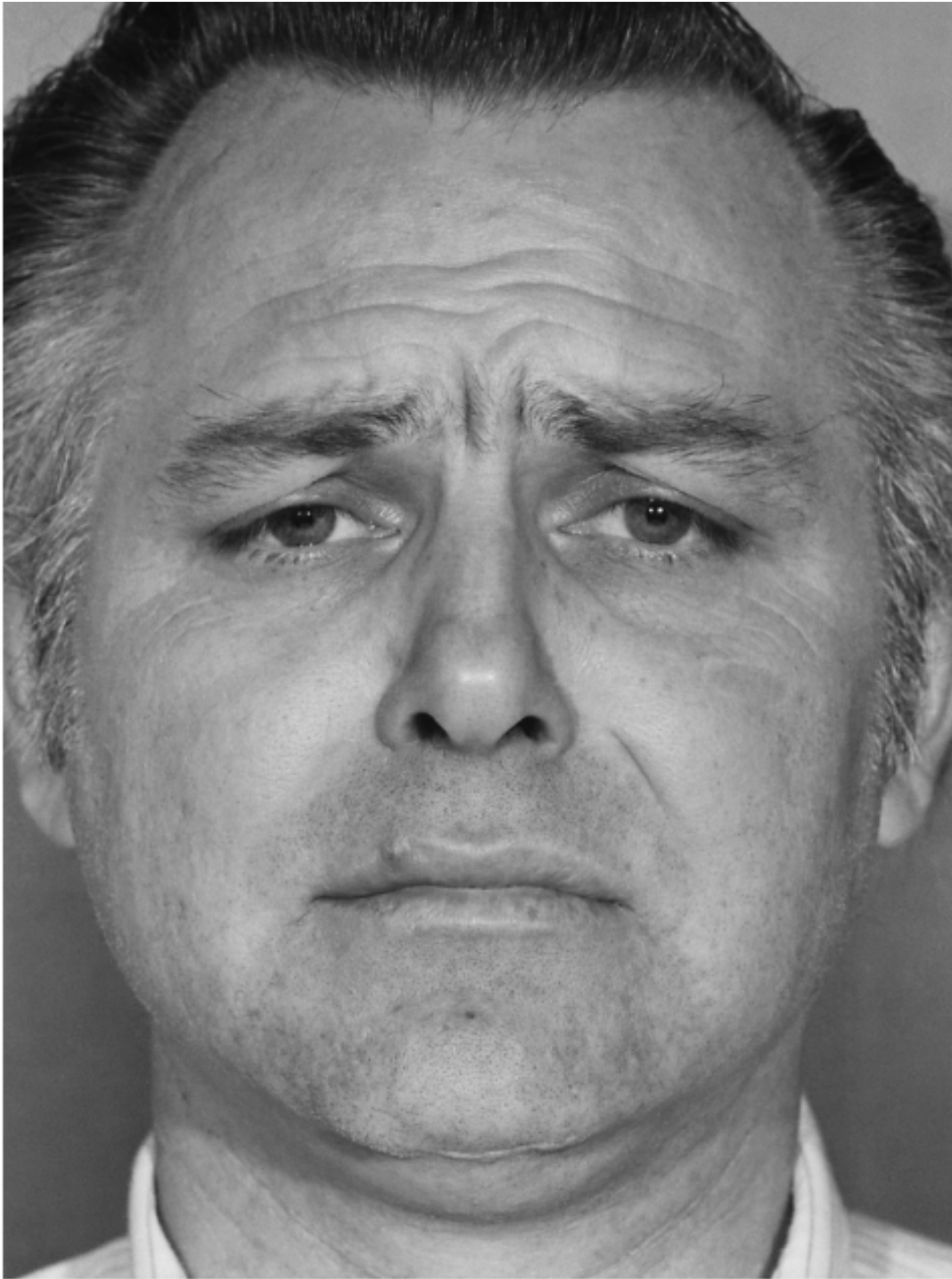
3. The man at the photo is one of the 10 candidates to get the promotion of regional manager. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

Not at all Characteristic  → Extremely Characteristic

	0	1	2	3	4	5	6	7	8	9	10
Understanding											
Helpful											
Sensitive											
Warm											
Sympathetic											
Forgiving											
Sincere											
Credible											
Honest											
Trustworthy											
Uncertain											
Intelligent											
Clever											
Knowledgeable											
Educated											
Wise											
Intellectual											
Competent											

Dedicated											
Hard-working											
Bold											
Dynamic											
Strong											
Energetic											
Charismatic											
Decisive											
Determined											
Confident											
Expressiveness											
Likeable											
Charming											
Extraverted											
Positive											
Sociable											
Outgoing											
Enthusiastic											
Antisocial											
Domineering											
Pushy											
Dominant											
Foxy											
Selfish											
Loud											
Irritable											
Masculine											
Stressful											
Smiley											
Attractive											

- Assume that the gentleman you see at the photo is working at a well known Cypriot organization.





4. Could that person be a business leader? Why?

.....  
 .....  
 .....

5. From a scale 0-10 with 10 being the maximum score what is the overall leadership score that you would give to that man by just seeing his face?

Score:

6. The man at the photo is also one of the 10 candidates to get the promotion of regional manager. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

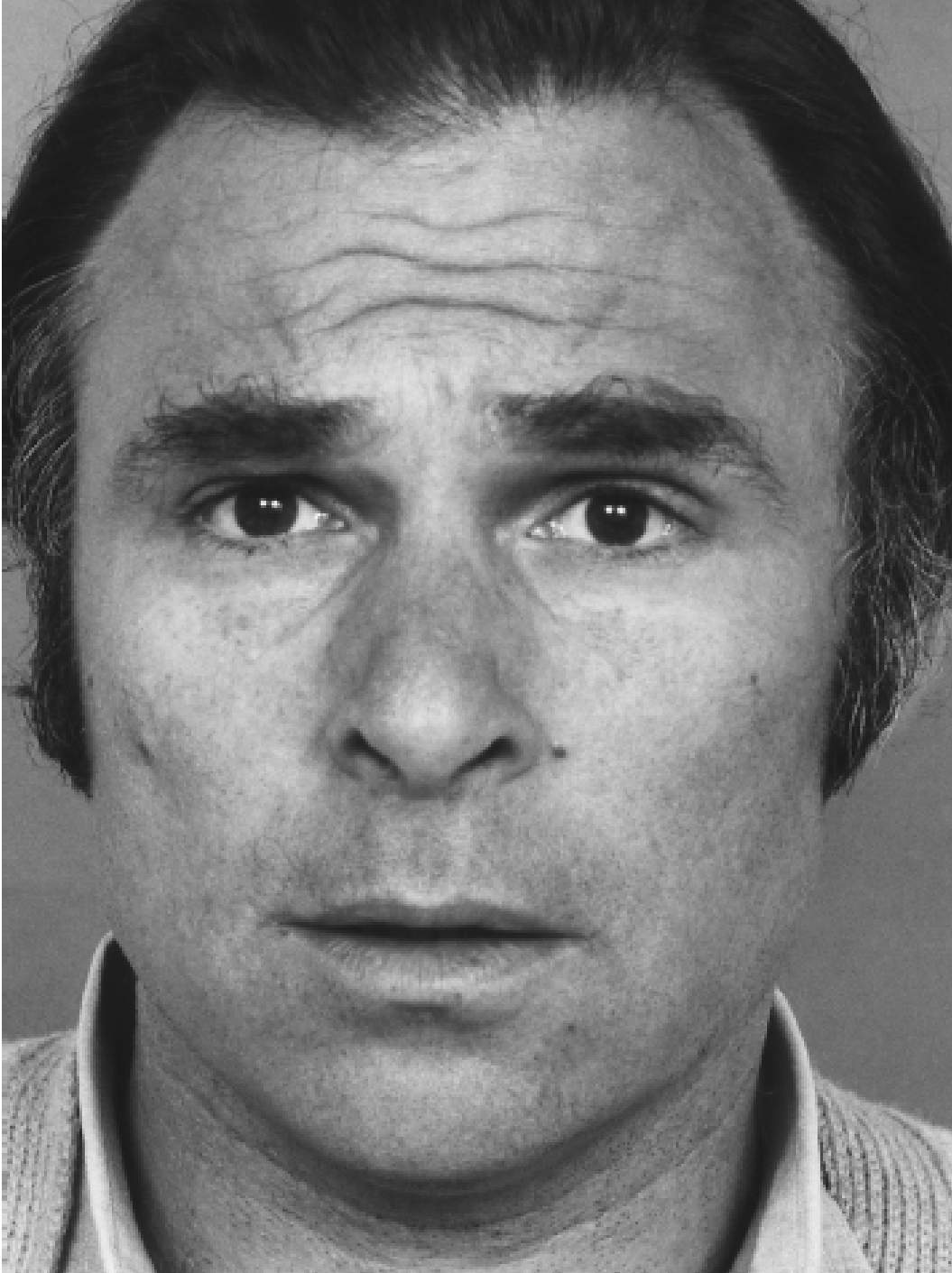
Not at all Characteristic  → Extremely Characteristic

	0	1	2	3	4	5	6	7	8	9	10
Understanding											
Helpful											
Sensitive											
Warm											
Sympathetic											
Forgiving											
Sincere											
Credible											
Honest											
Trustworthy											
Uncertain											
Intelligent											
Clever											
Knowledgeable											
Educated											
Wise											
Intellectual											
Competent											

Dedicated											
Hard-working											
Bold											
Dynamic											
Strong											
Energetic											
Charismatic											
Decisive											
Determined											
Confident											
Expressiveness											
Likeable											
Charming											
Extraverted											
Positive											
Sociable											
Outgoing											
Enthusiastic											
Antisocial											
Domineering											
Pushy											
Dominant											
Foxy											
Selfish											
Loud											
Irritable											
Masculine											
Stressful											
Smiley											
Attractive											

**Part B2**

- Assume that the gentleman you see at the photo is working at a well known Cypriot organization.



1. Could that person be a business leader? Why?

.....  
 .....  
 .....

2. From a scale 0-10 with 10 being the maximum score what is the overall leadership score that you would give to that man by just seeing his face?

Score:

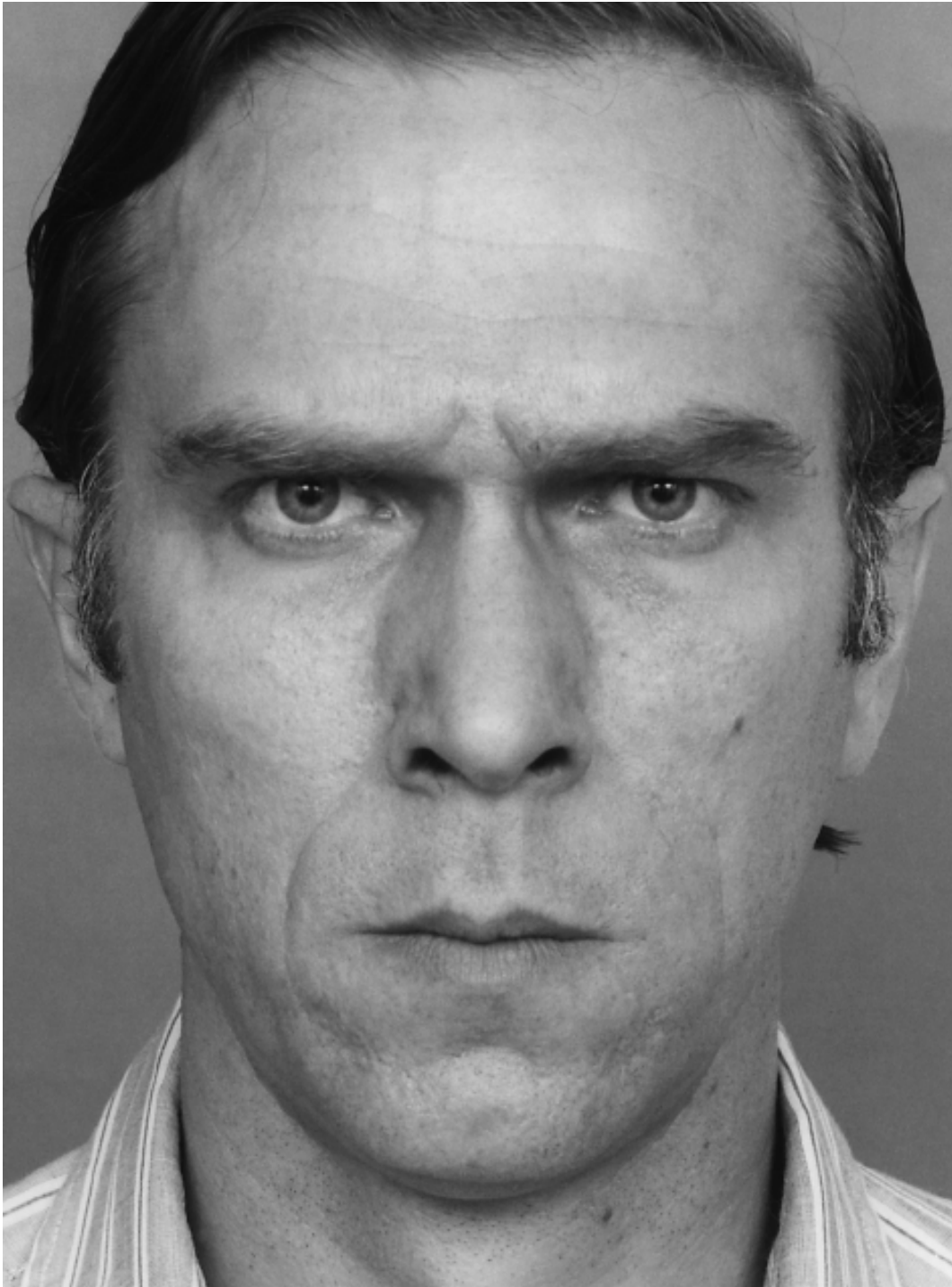
3. The man at the photo is one of the 10 candidates to get the promotion of regional manager. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

Not at all Characteristic  → Extremely Characteristic

	0	1	2	3	4	5	6	7	8	9	10
Understanding											
Helpful											
Sensitive											
Warm											
Sympathetic											
Forgiving											
Sincere											
Credible											
Honest											
Trustworthy											
Uncertain											
Intelligent											
Clever											
Knowledgeable											
Educated											
Wise											
Intellectual											
Competent											

Dedicated											
Hard-working											
Bold											
Dynamic											
Strong											
Energetic											
Charismatic											
Decisive											
Determined											
Confident											
Expressiveness											
Likeable											
Charming											
Extraverted											
Positive											
Sociable											
Outgoing											
Enthusiastic											
Antisocial											
Domineering											
Pushy											
Dominant											
Foxy											
Selfish											
Loud											
Irritable											
Masculine											
Stressful											
Smiley											
Attractive											

- Assume that the gentleman you see at the photo is working at a well known Cypriot organization.



4. Could that person be a business leader? Why?

.....  
 .....  
 .....

5. From a scale 0-10 with 10 being the maximum score what is the overall leadership score that you would give to that man by just seeing his face?

Score:

6. The man at the photo is also one of the 10 candidates to get the promotion of regional manager. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

Not at all Characteristic  → Extremely Characteristic

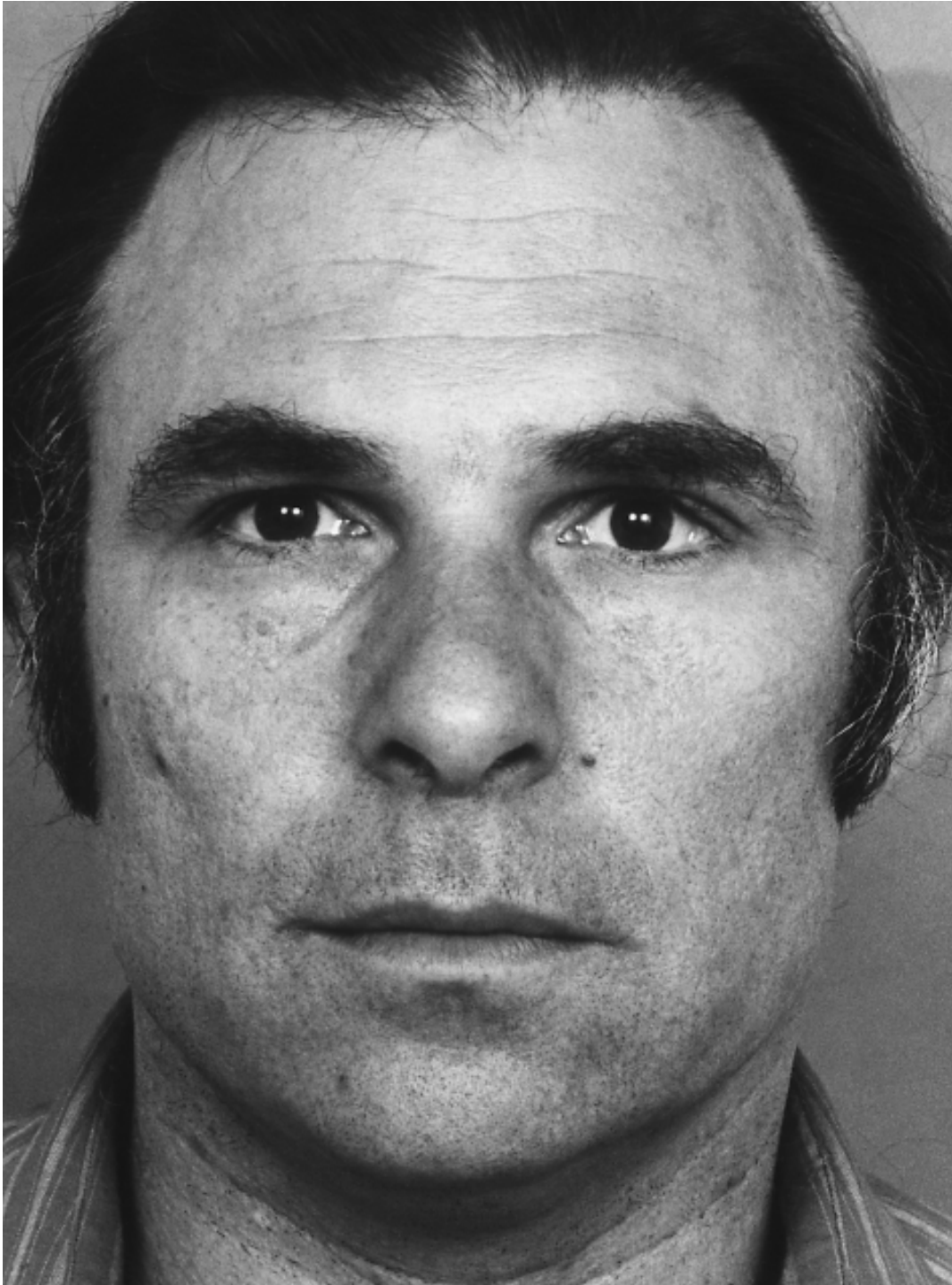
	0	1	2	3	4	5	6	7	8	9	10
Understanding											
Helpful											
Sensitive											
Warm											
Sympathetic											
Forgiving											
Sincere											
Credible											
Honest											
Trustworthy											
Uncertain											
Intelligent											
Clever											
Knowledgeable											
Educated											
Wise											
Intellectual											
Competent											

Dedicated											
Hard-working											
Bold											
Dynamic											
Strong											
Energetic											
Charismatic											
Decisive											
Determined											
Confident											
Expressiveness											
Likeable											
Charming											
Extraverted											
Positive											
Sociable											
Outgoing											
Enthusiastic											
Antisocial											
Domineering											
Pushy											
Dominant											
Foxy											
Selfish											
Loud											
Irritable											
Masculine											
Stressful											
Smiley											
Attractive											



**Part B3**

- Assume that the gentleman you see at the photo is working at a well known Cypriot organization.



1. Could that person be a business leader? Why?

.....  
 .....  
 .....

2. From a scale 0-10 with 10 being the maximum score what is the overall leadership score that you would give to that man by just seeing his face?

Score:

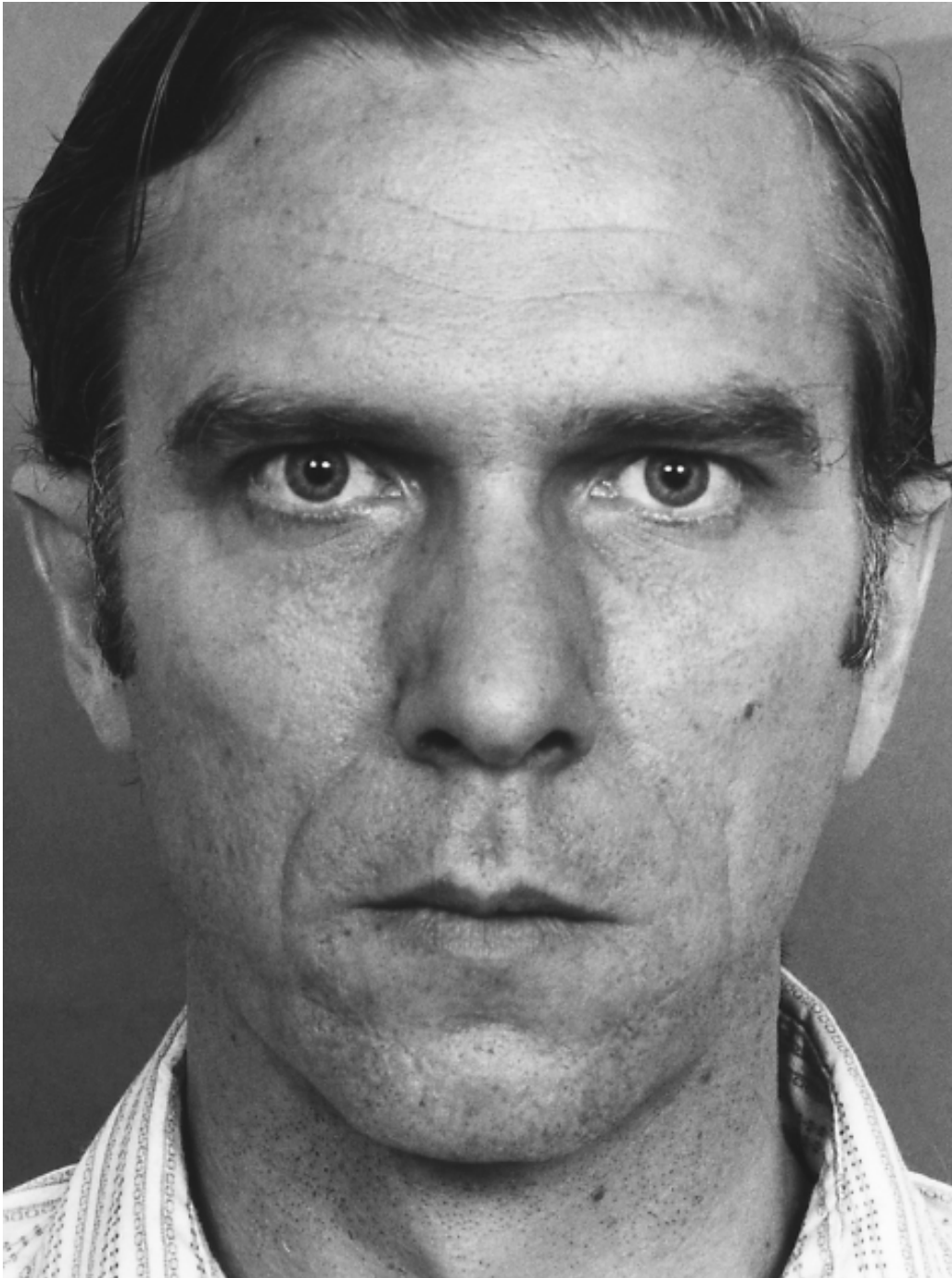
3. The man at the photo is one of the 10 candidates to get the promotion of regional manager. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

Not at all Characteristic  → Extremely Characteristic

	0	1	2	3	4	5	6	7	8	9	10
Understanding											
Helpful											
Sensitive											
Warm											
Sympathetic											
Forgiving											
Sincere											
Credible											
Honest											
Trustworthy											
Uncertain											
Intelligent											
Clever											
Knowledgeable											
Educated											
Wise											
Intellectual											
Competent											

Dedicated											
Hard-working											
Bold											
Dynamic											
Strong											
Energetic											
Charismatic											
Decisive											
Determined											
Confident											
Expressiveness											
Likeable											
Charming											
Extraverted											
Positive											
Sociable											
Outgoing											
Enthusiastic											
Antisocial											
Domineering											
Pushy											
Dominant											
Foxy											
Selfish											
Loud											
Irritable											
Masculine											
Stressful											
Smiley											
Attractive											

- Assume that the gentleman you see at the photo is working at a well known Cypriot organization.



4. Could that person be a business leader? Why?

.....  
 .....  
 .....

5. From a scale 0-10 with 10 being the maximum score what is the overall leadership score that you would give to that man by just seeing his face?

Score:

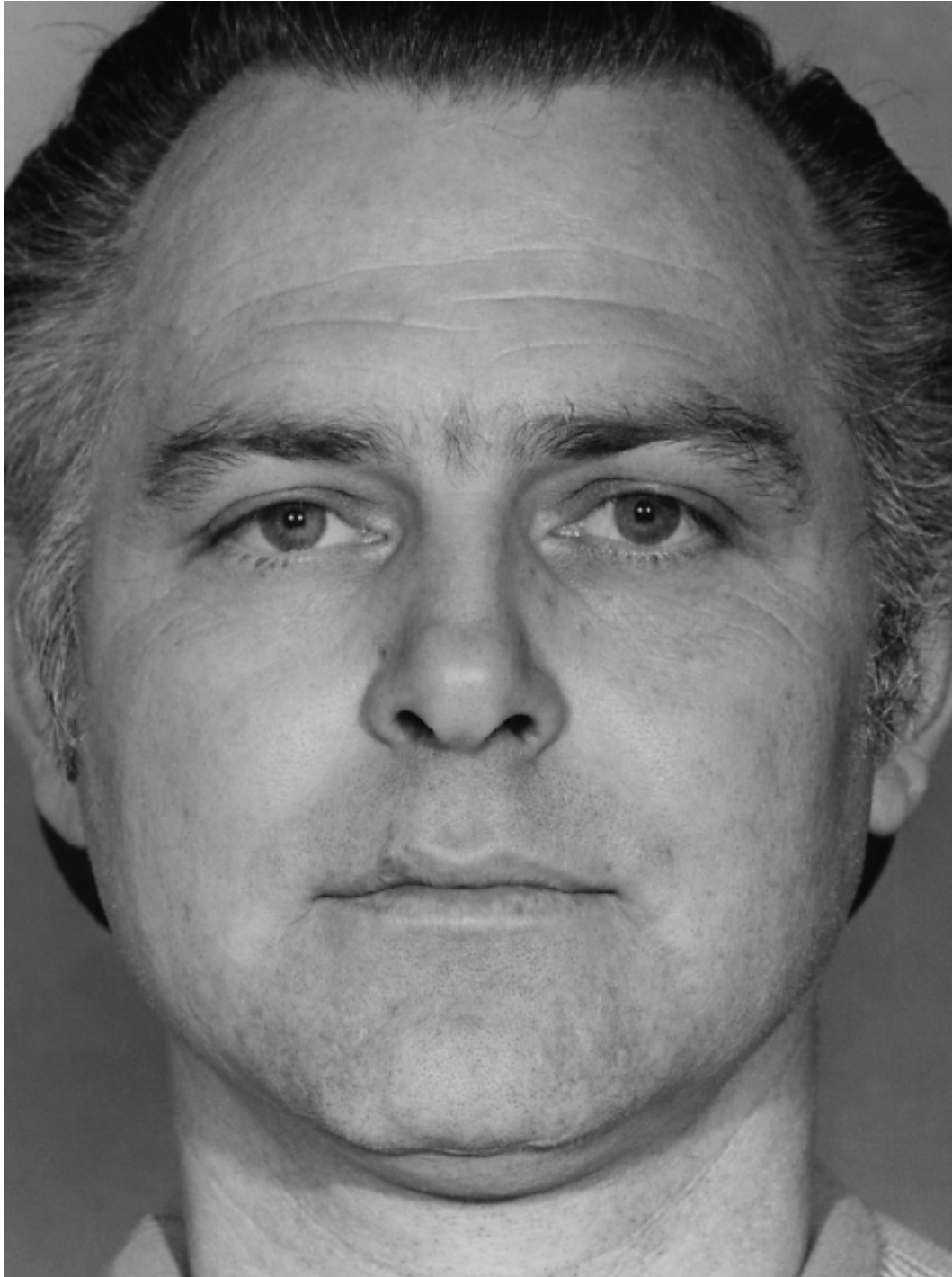
6. The man at the photo is also one of the 10 candidates to get the promotion of regional manager. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

Not at all Characteristic  → Extremely Characteristic

	0	1	2	3	4	5	6	7	8	9	10
Understanding											
Helpful											
Sensitive											
Warm											
Sympathetic											
Forgiving											
Sincere											
Credible											
Honest											
Trustworthy											
Uncertain											
Intelligent											
Clever											
Knowledgeable											
Educated											
Wise											
Intellectual											
Competent											

Dedicated											
Hard-working											
Bold											
Dynamic											
Strong											
Energetic											
Charismatic											
Decisive											
Determined											
Confident											
Expressiveness											
Likeable											
Charming											
Extraverted											
Positive											
Sociable											
Outgoing											
Enthusiastic											
Antisocial											
Domineering											
Pushy											
Dominant											
Foxy											
Selfish											
Loud											
Irritable											
Masculine											
Stressful											
Smiley											
Attractive											

- Assume that the gentleman you see at the photo is working at a well known Cypriot organization.



7. Could that person be a business leader? Why?

.....  
 .....  
 .....

8. From a scale 0-10 with 10 being the maximum score what is the overall leadership score that you would give to that man by just seeing his face?

Score:

9. The man at the photo is also one of the 10 candidates to get the promotion of regional manager. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

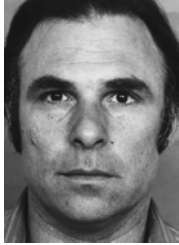


Not at all Characteristic  → Extremely Characteristic

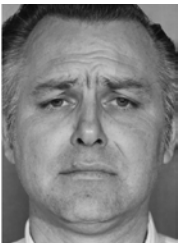

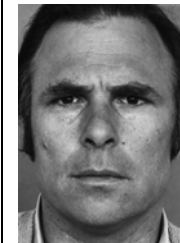
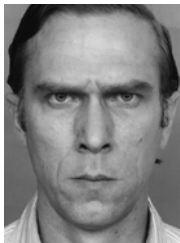
	0	1	2	3	4	5	6	7	8	9	10
Understanding											
Helpful											
Sensitive											
Warm											
Sympathetic											
Forgiving											
Sincere											
Credible											
Honest											
Trustworthy											
Uncertain											
Intelligent											
Clever											
Knowledgeable											
Educated											
Wise											
Intellectual											
Competent											



Dedicated											
Hard-working											
Bold											
Dynamic											
Strong											
Energetic											
Charismatic											
Decisive											
Determined											
Confident											
Expressiveness											
Likeable											
Charming											
Extraverted											
Positive											
Sociable											
Outgoing											
Enthusiastic											
Antisocial											
Domineering											
Pushy											
Dominant											
Foxy											
Selfish											
Loud											
Irritable											
Masculine											
Stressful											
Smiley											
Attractive											

**APPENDIX D**  
**FACS CODING: STUDY 1**

(a)			
<b><u>Picture</u></b>			
<b><u>FACS Coding</u></b>	0	0	0
<b><u>Main movement</u></b>	Neutral face (physiognomy)	Neutral face (physiognomy)	Neutral face (physiognomy)

(b)				
<b><u>Picture</u></b>				
<b><u>FACS Coding</u></b>	1C+4D+L11B	1B+2B+4C+25A + 38A	4D	4B
<b><u>Main movement</u></b>	eye brows raise and pulled together	eye brows raise and pulled together (different muscle movement, and intensity)	eye brows lowered and pulled together	eye brows lowered and pulled together (different intensity)



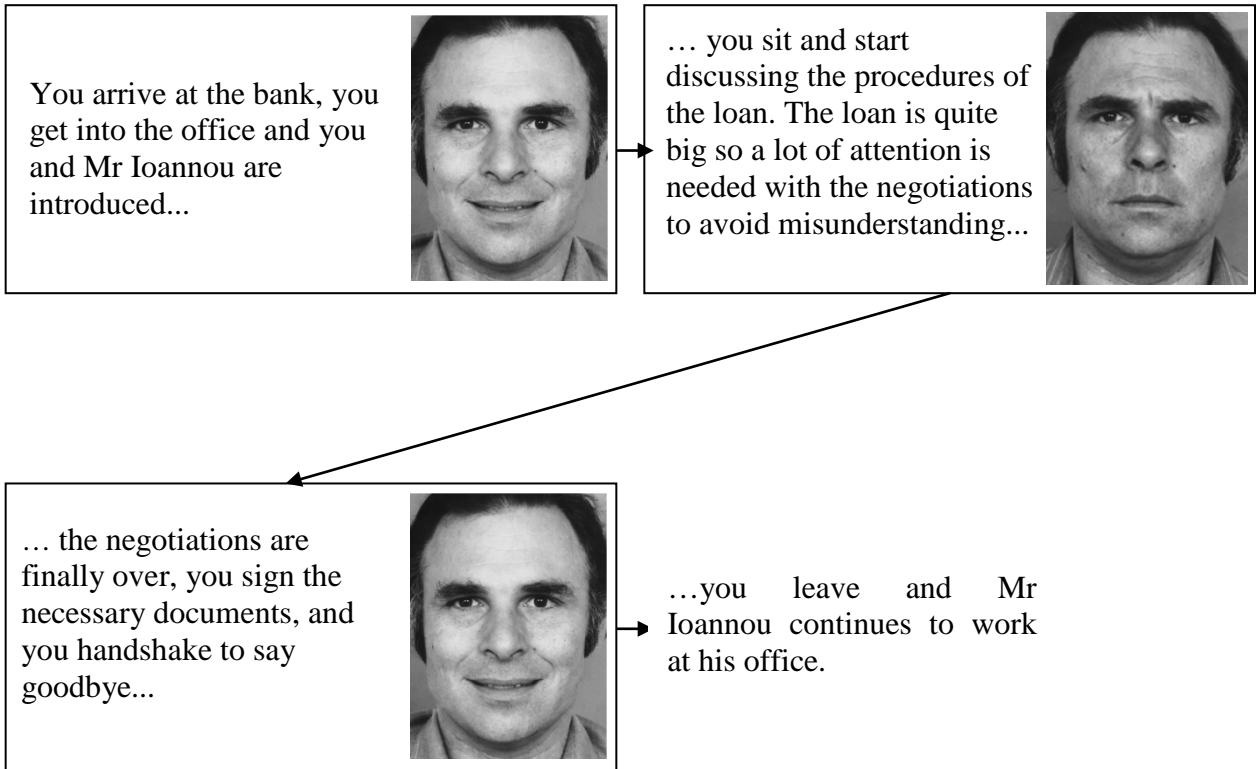
6. Which of the personality traits are characteristic to a successful business leader?  
 Tick the box that represents your opinion. The boxes range from 0-10 with 0 = “not at all characteristic” and 10 = “extremely characteristic”

	Not at all Characteristic <span style="float: right;">→</span> Extremely Characteristic										
	0	1	2	3	4	5	6	7	8	9	10
Understanding											
Helpful											
Sensitive											
Warm											
Sympathetic											
Forgiving											
Sincere											
Credibility											
Honesty											
Trustworthy											
Uncertain											
Intelligent											
Knowledgeable											
Educated											
Wise											
Intellectual											
Competent											
Dedicated											
Hard-working											
Bold											
Dynamic											
Strong											
Energetic											
Charismatic											
Decisive											
Determined											
Confident											
Attractive											
Likeable											
Charming											
Extraverted											
Positive											
Sociable											
Outgoing											
Enthusiastic											
Antisocial											
Domineering											
Pushy											
Dominant											
Manipulative											
Selfish											
Loud											
Irritable											
Male											
Masculine											

**Part B1**

The man you will see at the story below works in a Cypriot bank. His name is Mr Ioannou.

A story will follow which represents a usual day at work. Imagine you are a new customer for that bank and you are meeting Mr Ioannou to arrange a loan. Photos with Mr Ioannou facial expressions will be appearing at particular times of the story:



1. Could that person be a business leader? Why?

.....  
.....  
.....

2. From a scale 0-10 with 10 being the maximum score what is the overall leadership score that you would give to that man by the information you saw above?

Score:

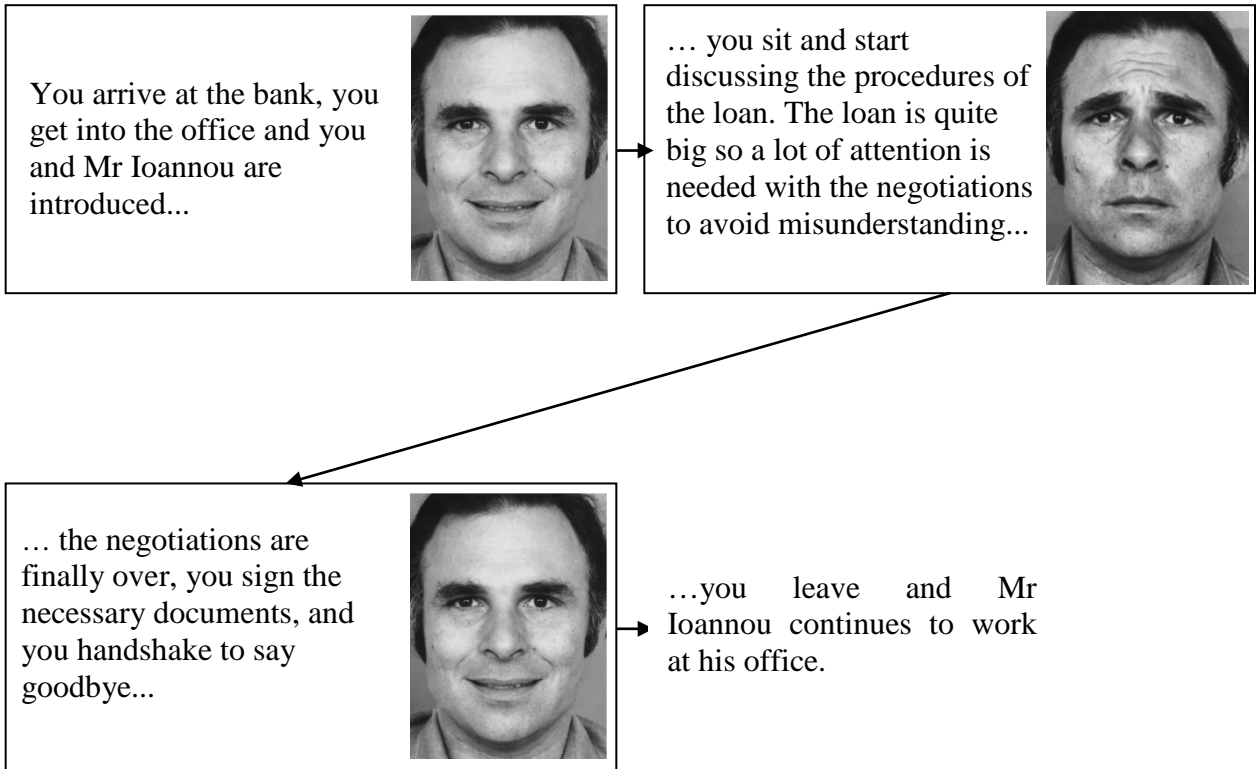
3. The man at the photo is one of the candidates to get the promotion of regional manager. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

	Not at all Characteristic -----> Extremely Characteristic										
	0	1	2	3	4	5	6	7	8	9	10
Understanding											
Helpful											
Sensitive											
Warm											
Sympathetic											
Forgiving											
Sincere											
Credibility											
Honesty											
Trustworthy											
Uncertain											
Intelligent											
Knowledgeable											
Educated											
Wise											
Intellectual											
Competent											
Dedicated											
Hard-working											
Bold											
Dynamic											
Strong											
Energetic											
Charismatic											
Decisive											
Determined											
Confident											
Attractive											
Likeable											
Charming											
Extraverted											
Positive											
Sociable											
Outgoing											
Enthusiastic											
Antisocial											
Domineering											
Pushy											
Dominant											
Manipulative											
Selfish											
Loud											
Irritable											
Masculine											

**Part B2**

The man you will see at the story below works in a Cypriot bank. His name is Mr Ioannou.

A story will follow which represents a usual day at work. Imagine you are a new customer for that bank and you are meeting Mr Ioannou to arrange a loan. Photos with Mr Ioannou facial expressions will be appearing at particular times of the story:



1. Could that person be a business leader? Why?

.....  
.....  
.....

2. From a scale 0-10 with 10 being the maximum score what is the overall leadership score that you would give to that man by the information you saw above?

Score:

3. The man at the photo is one of the candidates to get the promotion of regional manager. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

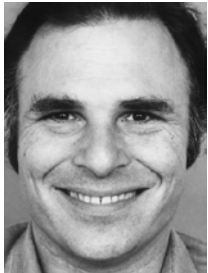
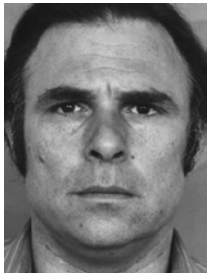
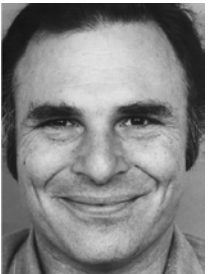
	Not at all Characteristic <span style="float: right;">→</span> Extremely Characteristic										
	0	1	2	3	4	5	6	7	8	9	10
Understanding											
Helpful											
Sensitive											
Warm											
Sympathetic											
Forgiving											
Sincere											
Credibility											
Honesty											
Trustworthy											
Uncertain											
Intelligent											
Knowledgeable											
Educated											
Wise											
Intellectual											
Competent											
Dedicated											
Hard-working											
Bold											
Dynamic											
Strong											
Energetic											
Charismatic											
Decisive											
Determined											
Confident											
Attractive											
Likeable											
Charming											
Extraverted											
Positive											
Sociable											
Outgoing											
Enthusiastic											
Antisocial											
Domineering											
Pushy											
Dominant											
Manipulative											
Selfish											
Loud											
Irritable											
Masculine											



**Part B3**

The man you will see at the story below works in a Cypriot bank. His name is Mr Ioannou.

A story will follow which represents a usual day at work. Imagine you are a new customer for that bank and you are meeting Mr Ioannou to arrange a loan. Photos with Mr Ioannou facial expressions will be appearing at particular times of the story:

<p>You arrive at the bank, you get into the office and you and Mr Ioannou are introduced...</p>		<p>... you sit and start discussing the procedures of the loan. The loan is quite big so a lot of attention is needed with the negotiations to avoid misunderstanding...</p>	
<p>... the negotiations are finally over, you sign the necessary documents, and you handshake to say goodbye...</p>			<p>...you leave and Mr Ioannou continues to work at his office.</p>

1. Could that person be a business leader? Why?

.....  
.....  
.....

2. From a scale 0-10 with 10 being the maximum score what is the overall leadership score that you would give to that man by the information you saw above?

Score:

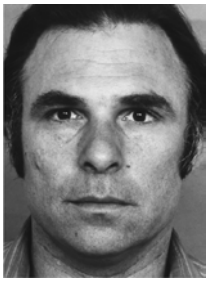
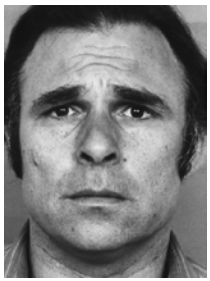
3. The man at the photo is one of the candidates to get the promotion of regional manager. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

	Not at all Characteristic <span style="float: right;">→</span> Extremely Characteristic										
	0	1	2	3	4	5	6	7	8	9	10
Understanding											
Helpful											
Sensitive											
Warm											
Sympathetic											
Forgiving											
Sincere											
Credibility											
Honesty											
Trustworthy											
Uncertain											
Intelligent											
Knowledgeable											
Educated											
Wise											
Intellectual											
Competent											
Dedicated											
Hard-working											
Bold											
Dynamic											
Strong											
Energetic											
Charismatic											
Decisive											
Determined											
Confident											
Attractive											
Likeable											
Charming											
Extraverted											
Positive											
Sociable											
Outgoing											
Enthusiastic											
Antisocial											
Domineering											
Pushy											
Dominant											
Manipulative											
Selfish											
Loud											
Irritable											
Masculine											

**Part B4**

The man you will see at the story below works in a Cypriot bank. His name is Mr Ioannou.

A story will follow which represents a usual day at work. Imagine you are a new customer for that bank and you are meeting Mr Ioannou to arrange a loan. Photos with Mr Ioannou facial expressions will be appearing at particular times of the story:

<p>You arrive at the bank, you get into the office and you and Mr Ioannou are introduced...</p>		<p>... you sit and start discussing the procedures of the loan. The loan is quite big so a lot of attention is needed with the negotiations to avoid misunderstanding...</p>	
<p>... the negotiations are finally over, you sign the necessary documents, and you handshake to say goodbye...</p>		<p>...you leave and Mr Ioannou continues to work at his office.</p>	

1. Could that person be a business leader? Why?

.....  
.....  
.....

2. From a scale 0-10 with 10 being the maximum score what is the overall leadership score that you would give to that man by the information you saw above?

Score:

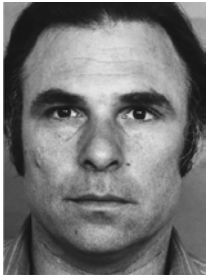
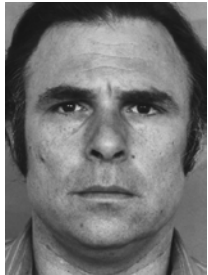
3. The man at the photo is one of the candidates to get the promotion of regional manager. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

	Not at all Characteristic <span style="float: right;">→</span> Extremely Characteristic										
	0	1	2	3	4	5	6	7	8	9	10
Understanding											
Helpful											
Sensitive											
Warm											
Sympathetic											
Forgiving											
Sincere											
Credibility											
Honesty											
Trustworthy											
Uncertain											
Intelligent											
Knowledgeable											
Educated											
Wise											
Intellectual											
Competent											
Dedicated											
Hard-working											
Bold											
Dynamic											
Strong											
Energetic											
Charismatic											
Decisive											
Determined											
Confident											
Attractive											
Likeable											
Charming											
Extraverted											
Positive											
Sociable											
Outgoing											
Enthusiastic											
Antisocial											
Domineering											
Pushy											
Dominant											
Manipulative											
Selfish											
Loud											
Irritable											
Masculine											

**Part B5**

The man you will see at the story below works in a Cypriot bank. His name is Mr Ioannou.

A story will follow which represents a usual day at work. Imagine you are a new customer for that bank and you are meeting Mr Ioannou to arrange a loan. Photos with Mr Ioannou facial expressions will be appearing at particular times of the story:

<p>You arrive at the bank, you get into the office and you and Mr Ioannou are introduced...</p>		<p>... you sit and start discussing the procedures of the loan. The loan is quite big so a lot of attention is needed with the negotiations to avoid misunderstanding...</p>	
<p>... the negotiations are finally over, you sign the necessary documents, and you handshake to say goodbye...</p>		<p>...you leave and Mr Ioannou continues to work at his office.</p>	

1. Could that person be a business leader? Why?

.....  
.....  
.....

2. From a scale 0-10 with 10 being the maximum score what is the overall leadership score that you would give to that man by the information you saw above?

Score:

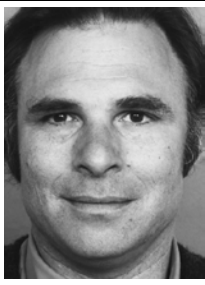
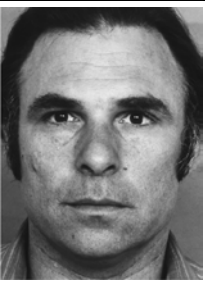
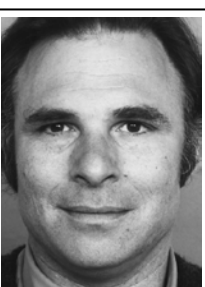
3. The man at the photo is one of the candidates to get the promotion of regional manager. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

	Not at all Characteristic <span style="float: right;">→</span> Extremely Characteristic										
	0	1	2	3	4	5	6	7	8	9	10
Understanding											
Helpful											
Sensitive											
Warm											
Sympathetic											
Forgiving											
Sincere											
Credibility											
Honesty											
Trustworthy											
Uncertain											
Intelligent											
Knowledgeable											
Educated											
Wise											
Intellectual											
Competent											
Dedicated											
Hard-working											
Bold											
Dynamic											
Strong											
Energetic											
Charismatic											
Decisive											
Determined											
Confident											
Attractive											
Likeable											
Charming											
Extraverted											
Positive											
Sociable											
Outgoing											
Enthusiastic											
Antisocial											
Domineering											
Pushy											
Dominant											
Manipulative											
Selfish											
Loud											
Irritable											
Masculine											

**Part B6**

The man you will see at the story below works in a Cypriot bank. His name is Mr Ioannou.

A story will follow which represents a usual day at work. Imagine you are a new customer for that bank and you are meeting Mr Ioannou to arrange a loan. Photos with Mr Ioannou facial expressions will be appearing at particular times of the story:

<p>You arrive at the bank, you get into the office and you and Mr Ioannou are introduced...</p>		<p>... you sit and start discussing the procedures of the loan. The loan is quite big so a lot of attention is needed with the negotiations to avoid misunderstanding...</p>	
<p>... the negotiations are finally over, you sign the necessary documents, and you handshake to say goodbye...</p>			<p>...you leave and Mr Ioannou continues to work at his office.</p>

1. Could that person be a business leader? Why?

.....  
.....  
.....

2. From a scale 0-10 with 10 being the maximum score what is the overall leadership score that you would give to that man by the information you saw above?

Score:

3. The man at the photo is one of the candidates to get the promotion of regional manager. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

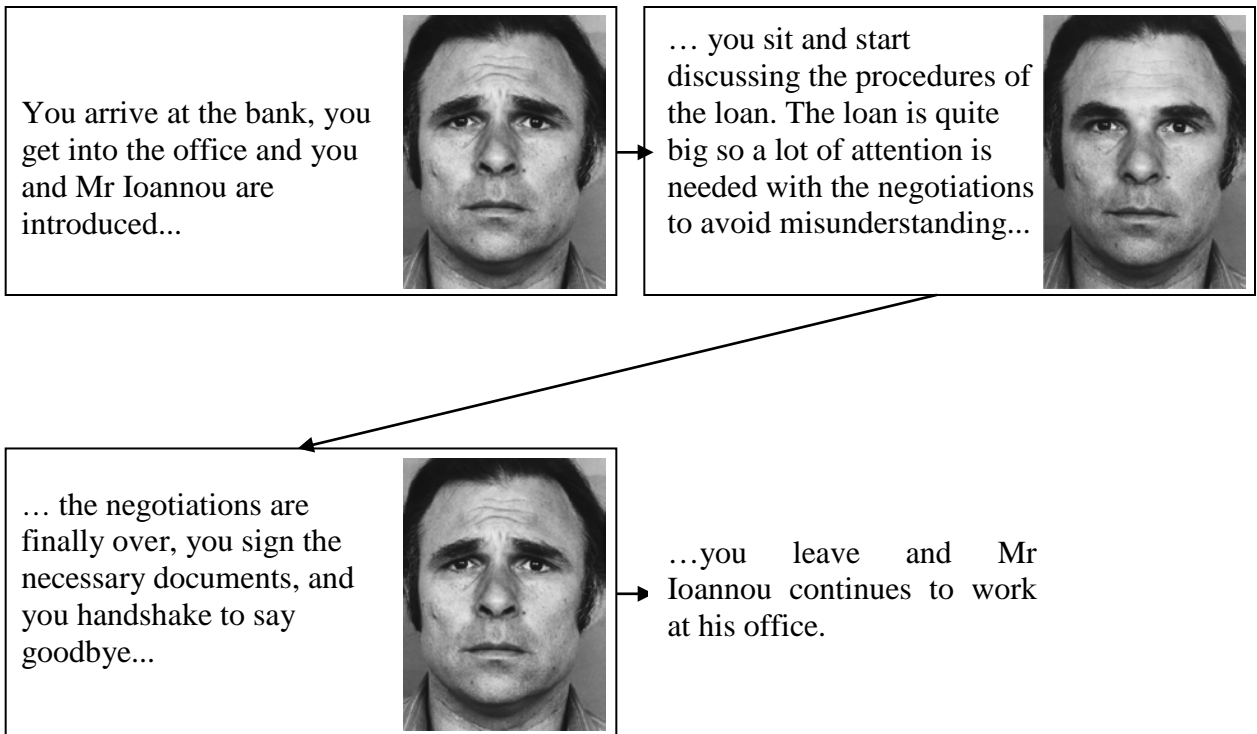
	Not at all Characteristic <span style="float: right;">→</span> Extremely Characteristic										
	0	1	2	3	4	5	6	7	8	9	10
Understanding											
Helpful											
Sensitive											
Warm											
Sympathetic											
Forgiving											
Sincere											
Credibility											
Honesty											
Trustworthy											
Uncertain											
Intelligent											
Knowledgeable											
Educated											
Wise											
Intellectual											
Competent											
Dedicated											
Hard-working											
Bold											
Dynamic											
Strong											
Energetic											
Charismatic											
Decisive											
Determined											
Confident											
Attractive											
Likeable											
Charming											
Extraverted											
Positive											
Sociable											
Outgoing											
Enthusiastic											
Antisocial											
Domineering											
Pushy											
Dominant											
Manipulative											
Selfish											
Loud											
Irritable											
Masculine											



**Part B7**

The man you will see at the story below works in a Cypriot bank. His name is Mr Ioannou.

A story will follow which represents a usual day at work. Imagine you are a new customer for that bank and you are meeting Mr Ioannou to arrange a loan. Photos with Mr Ioannou facial expressions will be appearing at particular times of the story:



1. Could that person be a business leader? Why?

.....  
.....  
.....

2. From a scale 0-10 with 10 being the maximum score what is the overall leadership score that you would give to that man by the information you saw above?

Score:

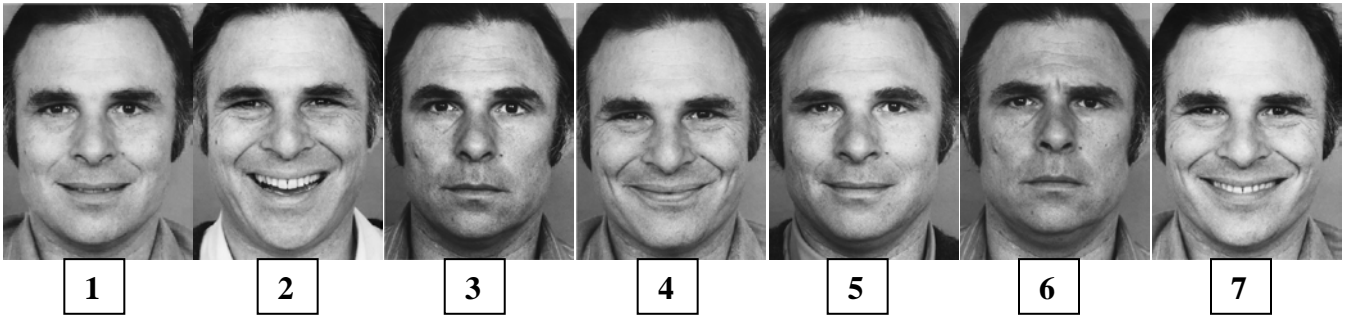
3. The man at the photo is one of the candidates to get the promotion of regional manager. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

	Not at all Characteristic <span style="float: right;">→</span> Extremely Characteristic										
	0	1	2	3	4	5	6	7	8	9	10
Understanding											
Helpful											
Sensitive											
Warm											
Sympathetic											
Forgiving											
Sincere											
Credibility											
Honesty											
Trustworthy											
Uncertain											
Intelligent											
Knowledgeable											
Educated											
Wise											
Intellectual											
Competent											
Dedicated											
Hard-working											
Bold											
Dynamic											
Strong											
Energetic											
Charismatic											
Decisive											
Determined											
Confident											
Attractive											
Likeable											
Charming											
Extraverted											
Positive											
Sociable											
Outgoing											
Enthusiastic											
Antisocial											
Domineering											
Pushy											
Dominant											
Manipulative											
Selfish											
Loud											
Irritable											
Masculine											

**Part C**

Imagine the same story. Pictures from the man's facial expression are given and numbered below. Which facial expression would you chose to put in each of the empty spots?

The man you will see at the story below is a business leader in a Cypriot bank.

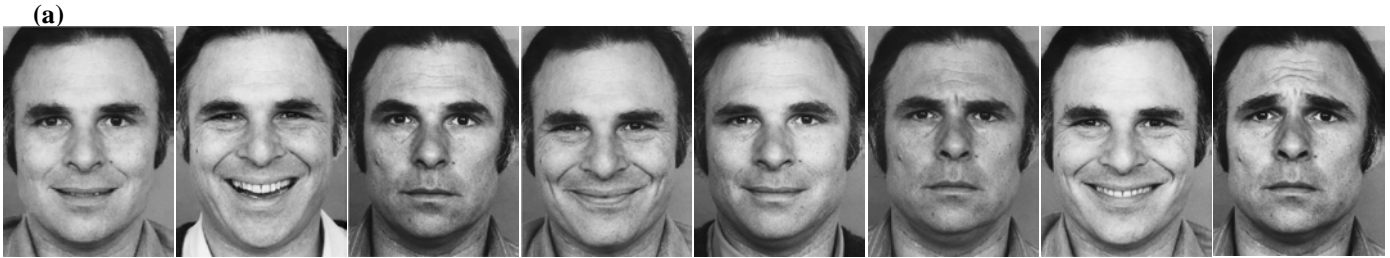


The customer eventually comes, he gets in to the office and they introduce...	Write the number of the picture that you believe best matches the situation in the box below: <input type="text"/>	...they sit and start discussing the procedures of the loan. The loan is quite big so they must be very careful with their negotiations to avoid misunderstanding...	Write the number of the picture that you believe best matches the situation in the box below: <input type="text"/>
... the negotiations are finally over, they sign the necessary documents, and they handshake to say goodbye...		...the customer leaves and the business leader continues to work at his office.	

Can you briefly justify your choices in the lines given below?



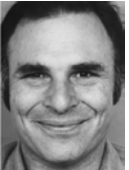


.....  
.....  
.....  
.....

**APPENDIX F**  
**FACS CODING: STUDY 2**



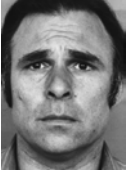


1
2
3
4
5
6
7
8

(b)

<b><u>Smile picture</u></b>					
<b><u>Smile quality</u></b>	Fake	Authentic	Authentic	Authentic	Authentic
<b><u>Smile FACS Coding</u></b>	12C+25B	12B	6D+7C+12E	6D+7C+12E+25B	6D+7C+12E+25D+26C
<b><u>Smile description</u></b>	teeth showing	low to medium lip corner raised and angled up obliquely	maximum intensity lip corners raised and angled up obliquely with eyes muscle activation	maximum intensity lip corners raised and angled up obliquely with eyes muscle activation and teeth showing	maximum intensity lip corners raised and angled up obliquely with eyes muscle activation and teeth showing and jaw drop

(c)

<b><u>Picture</u></b>			
<b><u>FACS Coding</u></b>	0	4D	1C+4C+38A
<b><u>Main movement</u></b>	---	high intensity brows lowering and pulling together	medium intensity brows raising and pulling together

## APPENDIX G

### ILTs INSTRUMENT MODIFICATION

Table G1: ILTs items that remained the same from in all studies

<i>ILTs Items: The core</i>		
Understanding	Intellectual	Domineering
Sincere	Dedicated	Pushy
Helpful	Hard-working	Dominant
Sensitive	Bold	Selfish
Warm	Dynamic	Loud
Forgiving	Strong	Credible
Intelligent	Energetic	Uncertain
Knowledgeable	Confident	Competent
Educated	Determined	Male
Wise	Charismatic	Masculine
Likeable	---	---

Table G2: ILTs items that went through changes during the primary studies

<i>Study 1</i>	<i>Study 2</i>	<i>Final version (studies 3, 4, 5)</i>
<b>Sympathetic</b>	Sympathetic	Compassionate
<b>Stressful</b>	---	Stressed
<b>Smiley</b>	---	Smiling
---	Manipulative	Manipulative
<b>Attractive</b>	---	Attractive
<b>Clever</b>	---	Clever
<b>Foxy</b>	---	---

Table G3: ILTs items excluded or added

<b>Study 1</b>	<b>Study 2</b>	<i>Final version (studies 3, 4, 5)</i>
<b>Extraverted</b>	Extraverted	---
<b>Expressiveness</b>	Attractive	---
<b>Sociable</b>	Sociable	---
<b>Outgoing</b>	Outgoing	---
<b>Enthusiastic</b>	Enthusiastic	---
<b>Antisocial</b>	Antisocial	---
<b>Positive</b>	Positive	---
<b>Irritable</b>	Irritable	---
<b>Decisive</b>	Decisive	---

<b>Honest</b>	Honesty	---
<b>Trustworthy</b>	Trustworthy	---
<b>Charming</b>	Charming	---
<b>Foxy</b>	---	---
---	---	Motivated
---	---	Conceited

Table G4: Final ILTs list

Understanding
Sincere
Compassionate
Helpful
Sensitive
Warm
Forgiving
Intelligent
Clever
Knowledgeable
Educated
Wise
Intellectual
Motivated
Dedicated
Hard-working
Bold
Dynamic
Strong
Energetic
Confident
Determined
Charismatic
Domineering
Pushy
Dominant
Manipulative
Conceited
Selfish
Loud
Credible
Stressed
Uncertain
Smiling
Likeable
Competent
Attractive
Male
Masculine

**APPENDIX H**  
**FACTOR LOADINGS FOR PRINCIPAL COMPONENT ANALYSIS OF THE 36**  
**ITEMS IN A 2-FACTOR SOLUTION USING VARIMAX WITH KAISER**  
**NORMALISATION ROTATION METHODS**

#	Statements/Items	Factors		h <sup>2</sup>
		I	II	
1	Clever	<b>0.65</b>		0.428
2	Energetic	<b>0.64</b>		0.419
3	Hardworking	<b>0.61</b>		0.377
4	Knowledgeable	<b>0.58</b>		0.34
5	Dynamic	<b>0.56</b>		0.322
6	Dedicated	<b>0.56</b>		0.315
7	Intelligent	<b>0.55</b>		0.307
8	Confident	<b>0.53</b>		0.285
9	Helpful	<b>0.51</b>		0.318
10	Wise	<b>0.51</b>		0.303
11	Intellectual	<b>0.49</b>		0.33
12	Forgiving	<b>0.48</b>		0.256
13	Educated	<b>0.48</b>		0.257
14	Motivated	<b>0.48</b>		0.231
15	Determined	<b>0.47</b>		0.223
16	Warm	<b>0.46</b>		0.213
17	Intense	<b>0.45</b>	<b>0.406</b>	0.368
18	Strong	<b>0.45</b>	0.308	0.297
19	Compassionate	<b>0.44</b>		0.213
20	Understanding	<b>0.41</b>		0.214
21	Smiling	<b>0.4</b>		0.159
22	Sensitive	<b>0.39</b>		0.151
23	Likeable	<b>0.38</b>		0.154
24	Sincere	<b>0.37</b>		0.214
25	Conceited		<b>0.805</b>	0.662
26	Selfish		<b>0.777</b>	0.613
27	Manipulative		<b>0.74</b>	0.557
28	Loud		<b>0.736</b>	0.551
29	Pushy		<b>0.674</b>	0.462
30	Domineering		<b>0.668</b>	0.452
31	Dominant		<b>0.624</b>	0.409
32	Uncertain		<b>0.57</b>	0.326
33	Stressed		<b>0.494</b>	0.245
34	Masculinity		<b>0.479</b>	0.238
35	Male		<b>0.476</b>	0.228
36	Attractive		<b>0.446</b>	0.229

Eigenvalues	4.668	3.8998
Percentage of variance	16.95	15.085
Cumulative percentage of variance	17	32.036

---

*Note.* Factor loadings > .35 are in boldface.  $h^2$  = communalities



**APPENDIX I**  
**QUESTIONNAIRES: STUDY 3**

**Part A**

*a. General information*

1. Gender:                    Male                     Female
2. Age range:    20-25    26-30    31-35    35-40    41-45    46-50    50-55    55-60
3. Nationality: .....
4. Occupation:.....
5. Education  
    Degree: .....
- Postgraduate studies: .....
- Knowledge on Communication in general or Nonverbal Communication (if yes  
    clarify                    as                    briefly                    as                    you                    can):  
    .....  
    .....

*b. Main subject*

In the current questionnaire, the word **business leader**, will refer to a person in a high organizational position who is successful on leading groups of people.

Which of the personality traits are characteristic to a successful business leader?

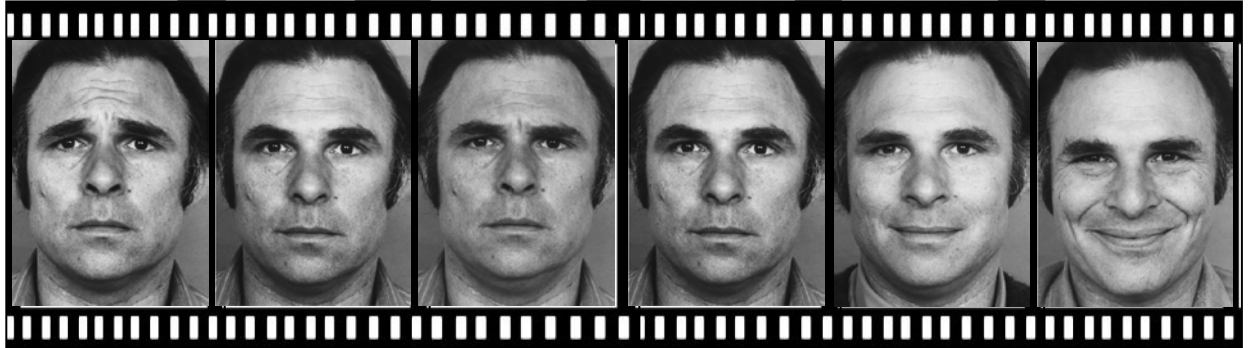
Tick the box that represents your opinion. The boxes range from 1-9 with 1 = “not at all characteristic” and 9 = “extremely characteristic”

Not at all  
Characteristic → Extremely  
Characteristic

Understanding	1	2	3	4	5	6	7	8	9
Sincere	1	2	3	4	5	6	7	8	9
Compassionate	1	2	3	4	5	6	7	8	9
Helpful	1	2	3	4	5	6	7	8	9
Sensitive	1	2	3	4	5	6	7	8	9
Warm	1	2	3	4	5	6	7	8	9
Forgiving	1	2	3	4	5	6	7	8	9
Intelligent	1	2	3	4	5	6	7	8	9
Clever	1	2	3	4	5	6	7	8	9
Knowledgeable	1	2	3	4	5	6	7	8	9
Educated	1	2	3	4	5	6	7	8	9
Wise	1	2	3	4	5	6	7	8	9
Intellectual	1	2	3	4	5	6	7	8	9
Motivated	1	2	3	4	5	6	7	8	9
Dedicated	1	2	3	4	5	6	7	8	9
Hard-working	1	2	3	4	5	6	7	8	9
Bold	1	2	3	4	5	6	7	8	9
Dynamic	1	2	3	4	5	6	7	8	9
Strong	1	2	3	4	5	6	7	8	9
Energetic	1	2	3	4	5	6	7	8	9
Confident	1	2	3	4	5	6	7	8	9
Determined	1	2	3	4	5	6	7	8	9
Charismatic	1	2	3	4	5	6	7	8	9
Domineering	1	2	3	4	5	6	7	8	9
Pushy	1	2	3	4	5	6	7	8	9
Dominant	1	2	3	4	5	6	7	8	9
Manipulative	1	2	3	4	5	6	7	8	9
Conceited	1	2	3	4	5	6	7	8	9
Selfish	1	2	3	4	5	6	7	8	9
Loud	1	2	3	4	5	6	7	8	9
Credible	1	2	3	4	5	6	7	8	9
Stressed	1	2	3	4	5	6	7	8	9
Uncertain	1	2	3	4	5	6	7	8	9
Smiling	1	2	3	4	5	6	7	8	9
Likeable	1	2	3	4	5	6	7	8	9
Competent	1	2	3	4	5	6	7	8	9
Attractive	1	2	3	4	5	6	7	8	9
Male	1	2	3	4	5	6	7	8	9
Masculine	1	2	3	4	5	6	7	8	9

**Part B1**

The man you will see below, Mr Ioannou, is a Branch manager in a Cypriot bank. The pictures you are going to see are extracted still frames from Mr Ioannou recorded interaction in a normal day at work. The frames are appearing with the same turn they appeared in the interactions.



1. Could that person be a business leader? Why?

.....  
.....  
.....

2. From a scale 1-9 with 9 being the maximum score what is the overall leadership score that you would give to that man by the information you saw above?

Score:

3. Describe how you imagine Mr Ioannou's character would be like based on the videotaped extracts you saw above.

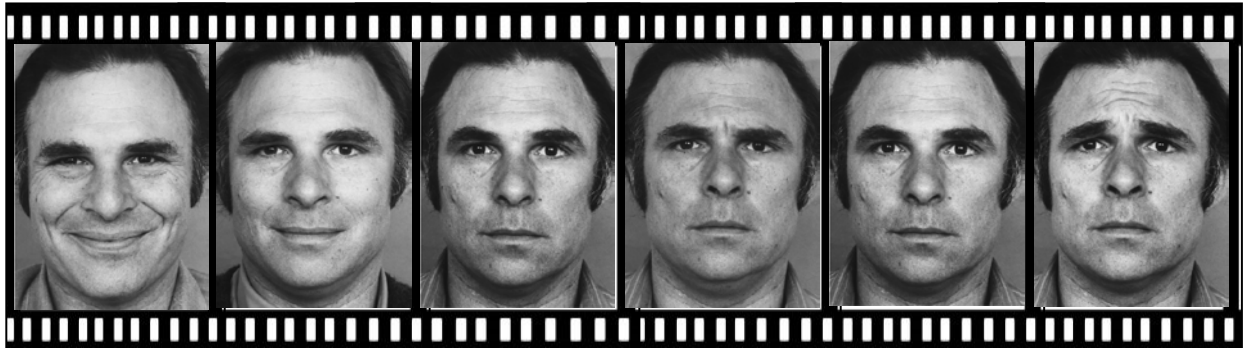
.....  
.....  
.....  
.....  
.....

4. The man at the photo, Mr Ioannou, is one of the candidates to get the promotion of regional manager. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

	Not at all Characteristic							Extremely Characteristic	
	1	2	3	4	5	6	7	8	9
Understanding	1	2	3	4	5	6	7	8	9
Sincere	1	2	3	4	5	6	7	8	9
Compassionate	1	2	3	4	5	6	7	8	9
Helpful	1	2	3	4	5	6	7	8	9
Sensitive	1	2	3	4	5	6	7	8	9
Warm	1	2	3	4	5	6	7	8	9
Forgiving	1	2	3	4	5	6	7	8	9
Intelligent	1	2	3	4	5	6	7	8	9
Clever	1	2	3	4	5	6	7	8	9
Knowledgeable	1	2	3	4	5	6	7	8	9
Educated	1	2	3	4	5	6	7	8	9
Wise	1	2	3	4	5	6	7	8	9
Intellectual	1	2	3	4	5	6	7	8	9
Motivated	1	2	3	4	5	6	7	8	9
Dedicated	1	2	3	4	5	6	7	8	9
Hard-working	1	2	3	4	5	6	7	8	9
Bold	1	2	3	4	5	6	7	8	9
Dynamic	1	2	3	4	5	6	7	8	9
Strong	1	2	3	4	5	6	7	8	9
Energetic	1	2	3	4	5	6	7	8	9
Confident	1	2	3	4	5	6	7	8	9
Determined	1	2	3	4	5	6	7	8	9
Charismatic	1	2	3	4	5	6	7	8	9
Domineering	1	2	3	4	5	6	7	8	9
Pushy	1	2	3	4	5	6	7	8	9
Dominant	1	2	3	4	5	6	7	8	9
Manipulative	1	2	3	4	5	6	7	8	9
Conceited	1	2	3	4	5	6	7	8	9
Selfish	1	2	3	4	5	6	7	8	9
Loud	1	2	3	4	5	6	7	8	9
Credible	1	2	3	4	5	6	7	8	9
Stressed	1	2	3	4	5	6	7	8	9
Uncertain	1	2	3	4	5	6	7	8	9
Smiling	1	2	3	4	5	6	7	8	9
Likeable	1	2	3	4	5	6	7	8	9
Competent	1	2	3	4	5	6	7	8	9
Attractive	1	2	3	4	5	6	7	8	9
Masculine	1	2	3	4	5	6	7	8	9

**Part B2**

The man you will see below, Mr Ioannou, is a Branch manager in a Cypriot bank. The pictures you are going to see are extracted still frames from Mr Ioannou recorded interaction in a normal day at work. The frames are appearing with the same turn they appeared in the interactions.



1. Could that person be a business leader? Why?

.....  
.....  
.....

2. From a scale 1-9 with 9 being the maximum score what is the overall leadership score that you would give to that man by the information you saw above?

Score:

3. Describe how you imagine Mr Ioannou's character would be like based on the videotaped extracts you saw above.

.....  
.....  
.....  
.....  
.....

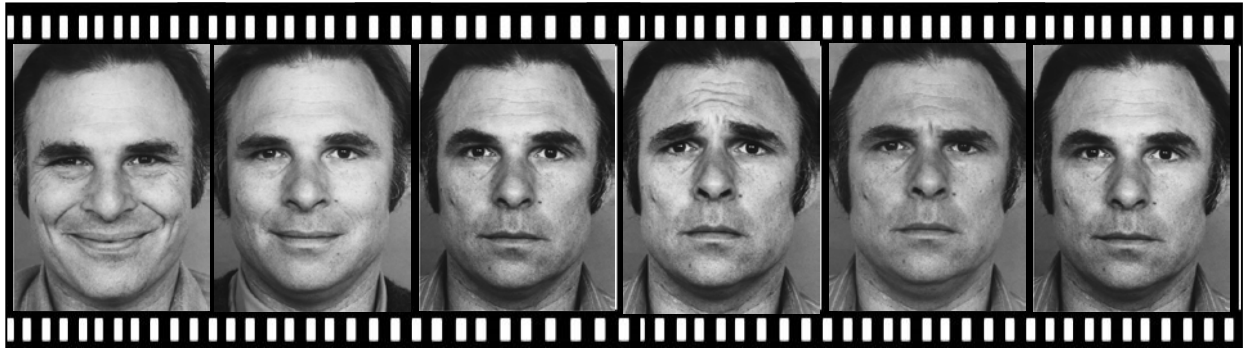
4. The man at the photo, Mr Ioannou, is one of the candidates to get the promotion of regional manager. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

Not at all  
Characteristic  Extremely  
Characteristic

Understanding	1	2	3	4	5	6	7	8	9
Sincere	1	2	3	4	5	6	7	8	9
Compassionate	1	2	3	4	5	6	7	8	9
Helpful	1	2	3	4	5	6	7	8	9
Sensitive	1	2	3	4	5	6	7	8	9
Warm	1	2	3	4	5	6	7	8	9
Forgiving	1	2	3	4	5	6	7	8	9
Intelligent	1	2	3	4	5	6	7	8	9
Clever	1	2	3	4	5	6	7	8	9
Knowledgeable	1	2	3	4	5	6	7	8	9
Educated	1	2	3	4	5	6	7	8	9
Wise	1	2	3	4	5	6	7	8	9
Intellectual	1	2	3	4	5	6	7	8	9
Motivated	1	2	3	4	5	6	7	8	9
Dedicated	1	2	3	4	5	6	7	8	9
Hard-working	1	2	3	4	5	6	7	8	9
Bold	1	2	3	4	5	6	7	8	9
Dynamic	1	2	3	4	5	6	7	8	9
Strong	1	2	3	4	5	6	7	8	9
Energetic	1	2	3	4	5	6	7	8	9
Confident	1	2	3	4	5	6	7	8	9
Determined	1	2	3	4	5	6	7	8	9
Charismatic	1	2	3	4	5	6	7	8	9
Domineering	1	2	3	4	5	6	7	8	9
Pushy	1	2	3	4	5	6	7	8	9
Dominant	1	2	3	4	5	6	7	8	9
Manipulative	1	2	3	4	5	6	7	8	9
Conceited	1	2	3	4	5	6	7	8	9
Selfish	1	2	3	4	5	6	7	8	9
Loud	1	2	3	4	5	6	7	8	9
Credible	1	2	3	4	5	6	7	8	9
Stressed	1	2	3	4	5	6	7	8	9
Uncertain	1	2	3	4	5	6	7	8	9
Smiling	1	2	3	4	5	6	7	8	9
Likeable	1	2	3	4	5	6	7	8	9
Competent	1	2	3	4	5	6	7	8	9
Attractive	1	2	3	4	5	6	7	8	9
Masculine	1	2	3	4	5	6	7	8	9

**Part B3**

The man you will see below, Mr Ioannou, is a Branch manager in a Cypriot bank. The pictures you are going to see are extracted still frames from Mr Ioannou recorded interaction in a normal day at work. The frames are appearing with the same turn they appeared in the interactions.



1. Could that person be a business leader? Why?

.....  
.....  
.....

2. From a scale 1-9 with 9 being the maximum score what is the overall leadership score that you would give to that man by the information you saw above?

Score:

3. Describe how you imagine Mr Ioannou's character would be like based on the videotaped extracts you saw above.

.....  
.....  
.....  
.....  
.....

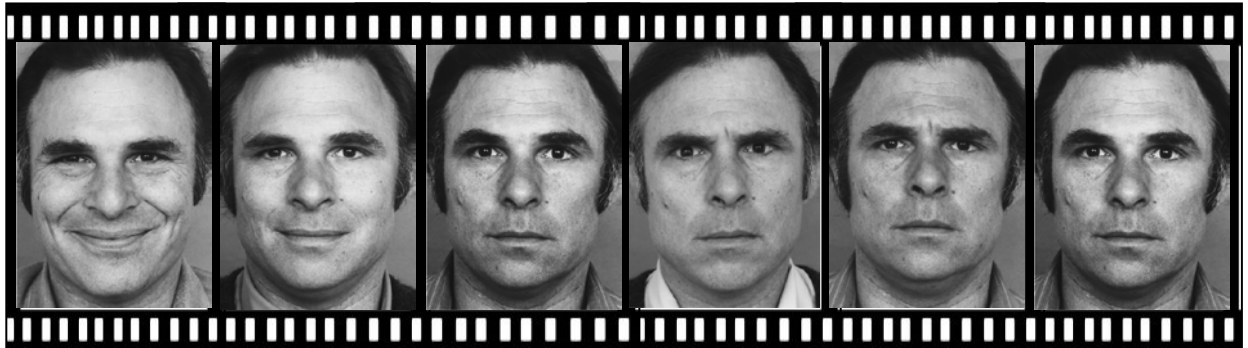
4. The man at the photo, Mr Ioannou, is one of the candidates to get the promotion of regional manager. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

	Not at all Characteristic				Extremely Characteristic				
	1	2	3	4	5	6	7	8	9
Understanding	1	2	3	4	5	6	7	8	9
Sincere	1	2	3	4	5	6	7	8	9
Compassionate	1	2	3	4	5	6	7	8	9
Helpful	1	2	3	4	5	6	7	8	9
Sensitive	1	2	3	4	5	6	7	8	9
Warm	1	2	3	4	5	6	7	8	9
Forgiving	1	2	3	4	5	6	7	8	9
Intelligent	1	2	3	4	5	6	7	8	9
Clever	1	2	3	4	5	6	7	8	9
Knowledgeable	1	2	3	4	5	6	7	8	9
Educated	1	2	3	4	5	6	7	8	9
Wise	1	2	3	4	5	6	7	8	9
Intellectual	1	2	3	4	5	6	7	8	9
Motivated	1	2	3	4	5	6	7	8	9
Dedicated	1	2	3	4	5	6	7	8	9
Hard-working	1	2	3	4	5	6	7	8	9
Bold	1	2	3	4	5	6	7	8	9
Dynamic	1	2	3	4	5	6	7	8	9
Strong	1	2	3	4	5	6	7	8	9
Energetic	1	2	3	4	5	6	7	8	9
Confident	1	2	3	4	5	6	7	8	9
Determined	1	2	3	4	5	6	7	8	9
Charismatic	1	2	3	4	5	6	7	8	9
Domineering	1	2	3	4	5	6	7	8	9
Pushy	1	2	3	4	5	6	7	8	9
Dominant	1	2	3	4	5	6	7	8	9
Manipulative	1	2	3	4	5	6	7	8	9
Conceited	1	2	3	4	5	6	7	8	9
Selfish	1	2	3	4	5	6	7	8	9
Loud	1	2	3	4	5	6	7	8	9
Credible	1	2	3	4	5	6	7	8	9
Stressed	1	2	3	4	5	6	7	8	9
Uncertain	1	2	3	4	5	6	7	8	9
Smiling	1	2	3	4	5	6	7	8	9
Likeable	1	2	3	4	5	6	7	8	9
Competent	1	2	3	4	5	6	7	8	9
Attractive	1	2	3	4	5	6	7	8	9
Masculine	1	2	3	4	5	6	7	8	9



**Part B4**

The man you will see below, Mr Ioannou, is a Branch manager in a Cypriot bank. The pictures you are going to see are extracted still frames from Mr Ioannou recorded interaction in a normal day at work. The frames are appearing with the same turn they appeared in the interactions.



1. Could that person be a business leader? Why?

.....  
.....  
.....

2. From a scale 1-9 with 9 being the maximum score what is the overall leadership score that you would give to that man by the information you saw above?

Score:

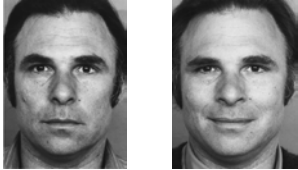




3. Describe how you imagine Mr Ioannou's character would be like based on the videotaped extracts you saw above.

.....  
.....  
.....  
.....  
.....

4. The man at the photo, Mr Ioannou, is one of the candidates to get the promotion of regional manager. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

	Not at all Characteristic				Extremely Characteristic				
	1	2	3	4	5	6	7	8	9
Understanding	1	2	3	4	5	6	7	8	9
Sincere	1	2	3	4	5	6	7	8	9
Compassionate	1	2	3	4	5	6	7	8	9
Helpful	1	2	3	4	5	6	7	8	9
Sensitive	1	2	3	4	5	6	7	8	9
Warm	1	2	3	4	5	6	7	8	9
Forgiving	1	2	3	4	5	6	7	8	9
Intelligent	1	2	3	4	5	6	7	8	9
Clever	1	2	3	4	5	6	7	8	9
Knowledgeable	1	2	3	4	5	6	7	8	9
Educated	1	2	3	4	5	6	7	8	9
Wise	1	2	3	4	5	6	7	8	9
Intellectual	1	2	3	4	5	6	7	8	9
Motivated	1	2	3	4	5	6	7	8	9
Dedicated	1	2	3	4	5	6	7	8	9
Hard-working	1	2	3	4	5	6	7	8	9
Bold	1	2	3	4	5	6	7	8	9
Dynamic	1	2	3	4	5	6	7	8	9
Strong	1	2	3	4	5	6	7	8	9
Energetic	1	2	3	4	5	6	7	8	9
Confident	1	2	3	4	5	6	7	8	9
Determined	1	2	3	4	5	6	7	8	9
Charismatic	1	2	3	4	5	6	7	8	9
Domineering	1	2	3	4	5	6	7	8	9
Pushy	1	2	3	4	5	6	7	8	9
Dominant	1	2	3	4	5	6	7	8	9
Manipulative	1	2	3	4	5	6	7	8	9
Conceited	1	2	3	4	5	6	7	8	9
Selfish	1	2	3	4	5	6	7	8	9
Loud	1	2	3	4	5	6	7	8	9
Credible	1	2	3	4	5	6	7	8	9
Stressed	1	2	3	4	5	6	7	8	9
Uncertain	1	2	3	4	5	6	7	8	9
Smiling	1	2	3	4	5	6	7	8	9
Likeable	1	2	3	4	5	6	7	8	9
Competent	1	2	3	4	5	6	7	8	9
Attractive	1	2	3	4	5	6	7	8	9
Masculine	1	2	3	4	5	6	7	8	9

**APPENDIX J**  
**FACS CODING: STUDY 3**

<b><u>Picture</u></b>						
<b><u>FACS Coding</u></b>	0	12B	6D+7C+12E	4D	4C+5C	1C+4C+38A
<b><u>Main movement</u></b>	<p align="center">---      low      to                           medium lip                           corner raised                           and angled                           up                           obliquely</p>		<p>maximum          intensity lip          corners          raised and          angled up          obliquely          with eyes          muscle          activation</p>	<p>high          intensity          brows          lowering and          pulling          together</p>	<p>medium          intensity of          eyebrow          lowering and          pulling          together          with eyelid          opening</p>	<p>medium          intensity          brows          raising and          puling          together</p>

## APPENDIX K

### “YES” AND “NO” FIGURES AND TABLES: STUDY 3

Figure K1 (variation 1): Participants ratings separately for those who accepted the actor as a potential leader and those who did not

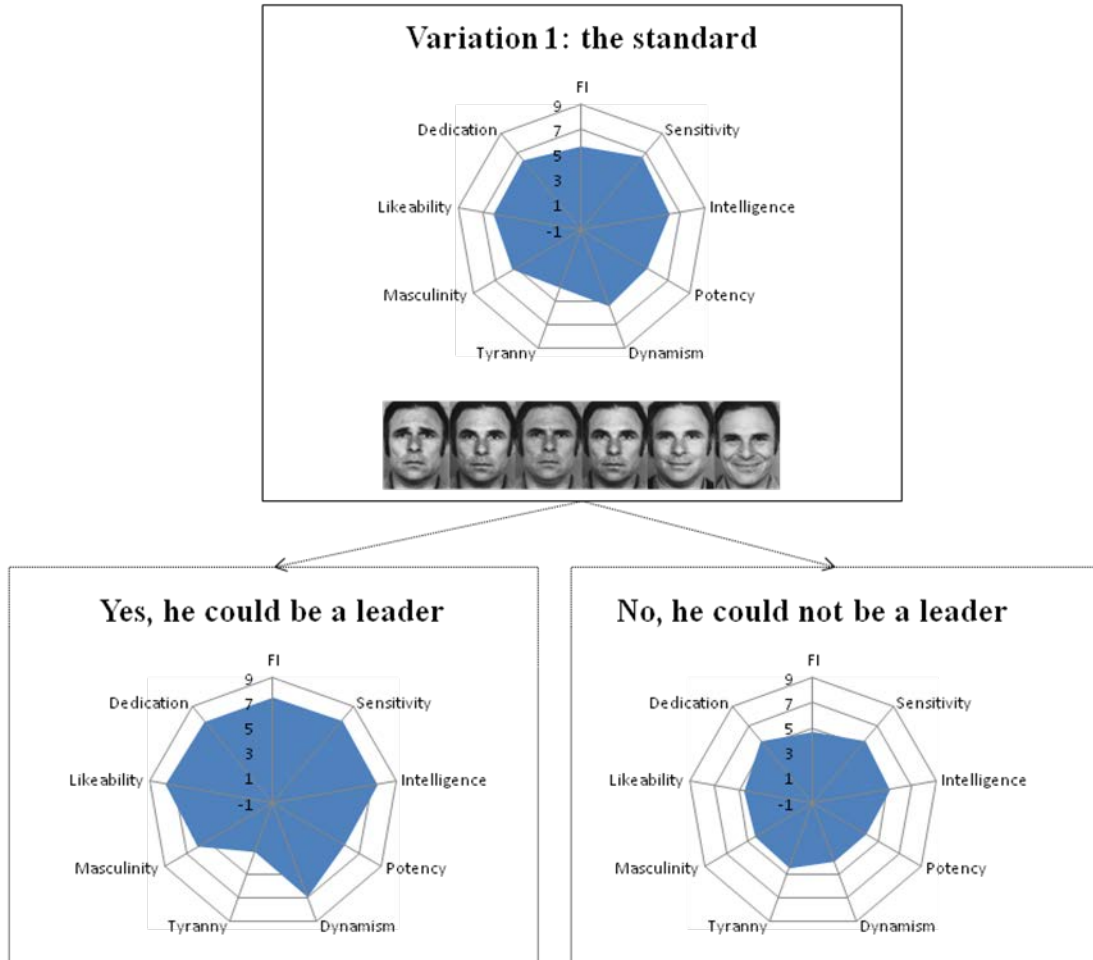


Figure K2 (variation 2): Participants ratings separately for those who accepted the actor as a potential leader and those who did not

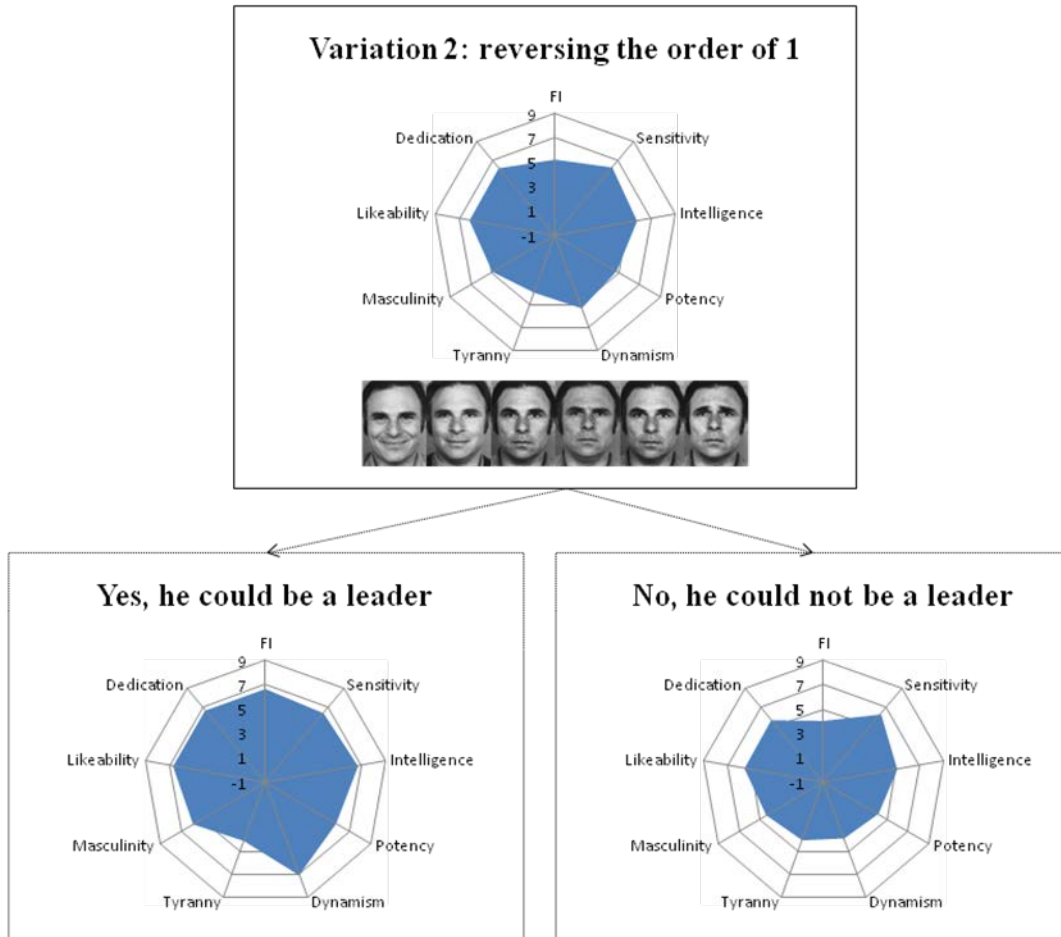


Figure K3 (variation 3): Participants ratings separately for those who accepted the actor as a potential leader and those who did not

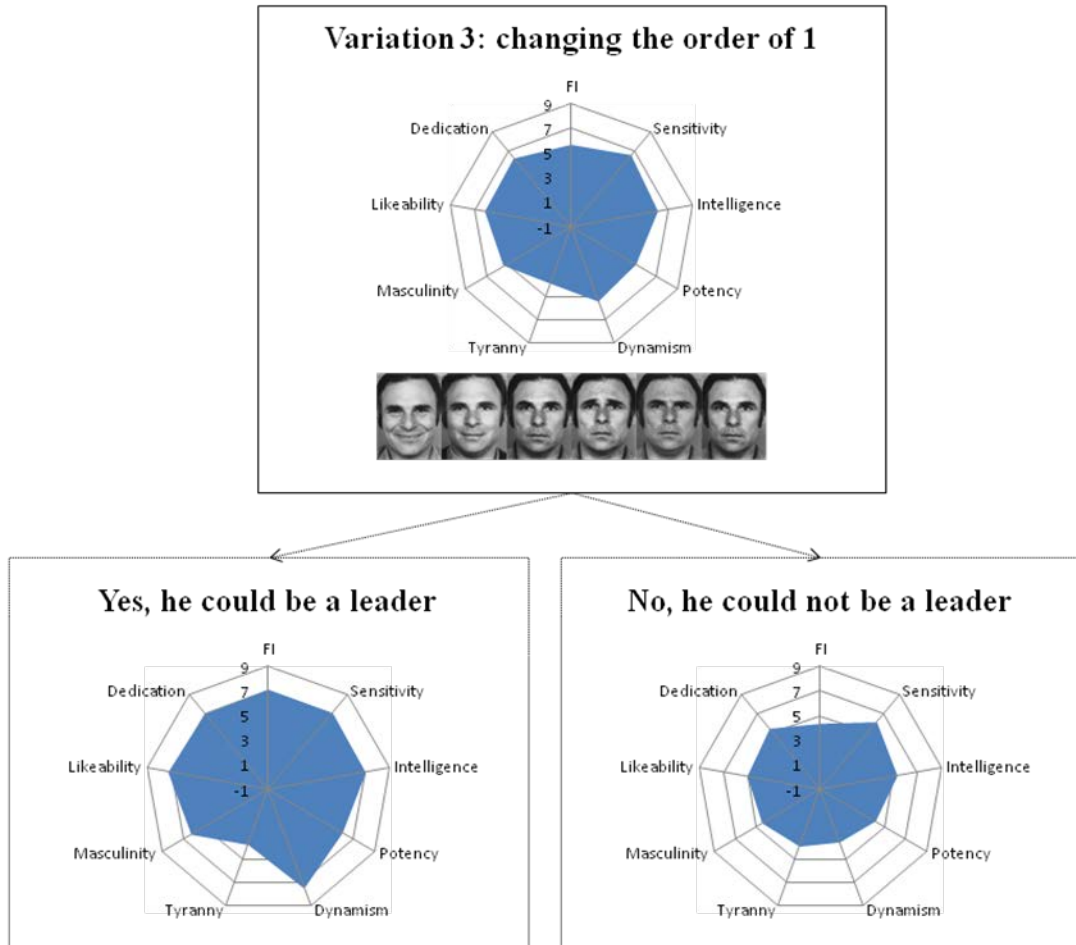
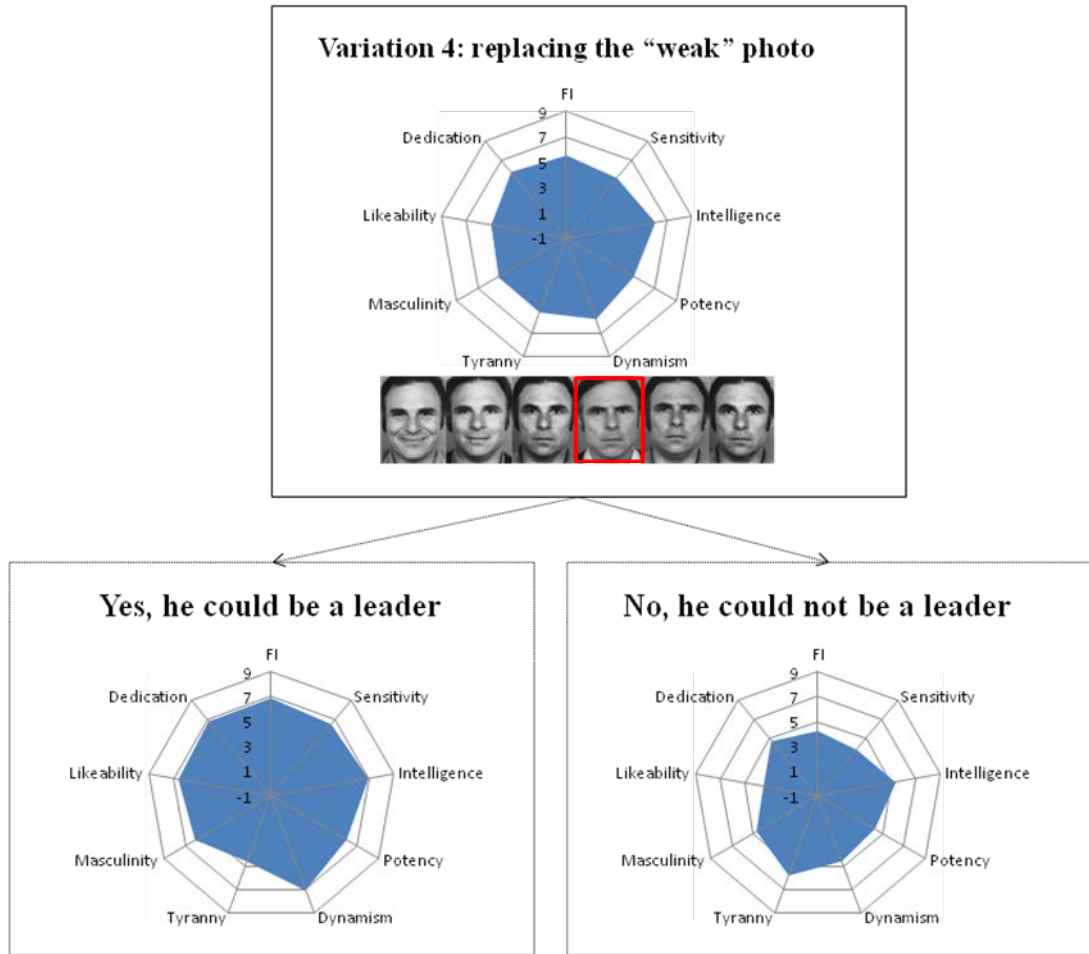


Figure K4 (variation 4): Participants ratings separately for those who accepted the actor as a potential leader and those who did not



Tables K1-4: Significant differences between participants' responses for groups "yes he could be a leader" and "no he could not be a leader"

(K1) Comparison of yes and no variation 1

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		t	df	Sig. (2- tailed)
				F	Sig.			
FI	Yes	7.46	0.91	1.986	0.17	8.063	36	0.000
	No	4.69	1.10					
Sensitivity	Yes	7.59	0.82	9.661	0	4.482	36	0.000
	No	5.47	1.69					
Intelligence	Yes	7.43	1.23	0.107	0.75	4.964	36	0.000
	No	5.20	1.41					
Potency	Yes	5.6	1.46	0.403	0.53	3.382	36	0.002
	No	3.86	1.58					
Dynamism	Yes	7.01	1.50	0.093	0.76	5.788	36	0.000
	No	3.90	1.69					
Tyranny	Yes	3.17	1.41	4.739	0.04	2.347	36	0.025
	No	4.46	1.80					
Masculinity	Yes	5.93	1.72	0.983	0.33	2.663	36	0.012
	No	4.30	1.91					
Likeability	Yes	7.66	1.20	0.693	0.41	6.563	36	0.000
	No	4.56	1.54					



Dedication	Yes	7.48	1.26	0.127	0.72	5.159	36	0.000
	No	5.46	1.12					

(K2) Comparison of yes and no variation 2

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		t	df	Sig. (2-tailed)
				F	Sig.			
FI	Yes	6.68	0.60	2.363	0.133	9.285	34	0.000
	No	4.05	0.99					
Sensitivity	Yes	6.43	1.07	2.083	0.158	0.415	34	0.681
	No	6.27	1.19					
Intelligence	Yes	6.73	0.90	0.941	0.339	4.287	34	0.000
	No	5.08	1.30					
Potency	Yes	5.71	1.49	3.538	0.069	3.889	34	0.000
	No	4.16	0.88					
Dynamism	Yes	7.09	0.94	0.252	0.619	9.124	34	0.000
	No	3.9	1.11					
Tyranny	Yes	4.10	1.62	0.85	0.363	0.056	34	0.956
	No	4.07	1.21					
Masculinity	Yes	5.84	1.69	1.211	0.279	2.895	34	0.007
	No	4.4	1.30					
Likeability	Yes	6.68	1.15	5.21	0.029	2.134	34	0.04
	No	5.55	1.86					

Dedication	Yes	6.70	1.17	0.011	0.916	2.641	34	0.012
	No	5.65	1.21					

(K3) Comparison of yes and no variation 3

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		t	df	Sig. (2-tailed)
				F	Sig.			
FI	Yes	7.13	0.51	22.7	0	5.984	30	0.000
	No	4.35	1.73					
Sensitivity	Yes	7.14	0.89	6.385	0.017	1.809	30	0.08
	No	6.14	1.96					
Intelligence	Yes	7.03	0.90	8.483	0.007	3.226	30	0.003
	No	5.36	1.81					
Potency	Yes	5.96	1.07	1.998	0.168	3.713	30	0.001
	No	4.19	1.55					
Dynamism	Yes	7.5	0.78	9.163	0.005	8.48	30	0.000
	No	3.58	1.62					
Tyranny	Yes	3.74	1.30	0	0.986	0.474	30	0.639
	No	3.96	1.31					
Masculinity	Yes	6.23	1.47	0.025	0.875	3.171	30	0.003
	No	4.5	1.60					
	Yes	7.26	1.38					

Likeability	No	5.05	1.80	0.413	0.525	3.844	30	0.001
	Yes	7.04	1.14					
Dedication	No	5.45	1.88	5.03	0.032	2.844	30	0.008

(K4) Comparison of yes and no variation 4

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances			df	Sig. (2- tailed)
				F	Sig.	t		
FI	Yes	6.85	0.99	3.21	0.081	6.954	39	0.000
	No	4.24	1.37					
Sensitivity	Yes	6.53	1.09	1.76	0.193	6.104	39	0.000
	No	3.85	1.65					
Intelligence	Yes	6.96	1.05	4.53	0.04	3.767	39	0.001
	No	5.32	1.66					
Potency	Yes	6.04	1.09	0.33	0.568	5.158	39	0.000
	No	4.26	1.11					
Dynamism	Yes	7.1	1.32	1.38	0.247	5.51	39	0.000
	No	4.58	1.59					
Tyranny	Yes	4.62	1.45	0.88	0.353	2.538	39	0.015
	No	5.79	1.51					
Masculinity	Yes	6.08	1.43	0.69	0.412	3.441	39	0.001
	No	4.64	1.24					

Likeability	Yes	6.58	1.44	1.33	0.257	6.386	39	0.000
	No	3.4	1.71					
Dedication	Yes	6.82	1.32	1.24	0.272	4.68	39	0.000
	No	4.76	1.48					

---

**APPENDIX L**  
**QUESTIONNAIRES: STUDY 4**

**Part A**

*a. General information*

1. Gender:                      Male                       Female
2. Age range:    20-25    26-30    31-35    35-40    41-45    46-50    50-55    55-60
3. Nationality: .....
4. Occupation:.....
5. Education  
    Degree: .....
- Postgraduate studies: .....

*b. Main subject*

In the current questionnaire, the word **business leader**, will refer to a person in an organizational position who is successful on leading groups of people.

Which of the personality traits are characteristic to a successful **business leader**?

Tick the box that represents your opinion. The boxes range from 1-9 with 1 = “not at all characteristic” and 9 = “extremely characteristic”

	Not at all Characteristic								Extremely Characteristic
	1	2	3	4	5	6	7	8	9
Understanding	1	2	3	4	5	6	7	8	9
Sincere	1	2	3	4	5	6	7	8	9
Compassionate	1	2	3	4	5	6	7	8	9
Helpful	1	2	3	4	5	6	7	8	9
Sensitive	1	2	3	4	5	6	7	8	9
Warm	1	2	3	4	5	6	7	8	9
Forgiving	1	2	3	4	5	6	7	8	9
Intelligent	1	2	3	4	5	6	7	8	9
Clever	1	2	3	4	5	6	7	8	9
Knowledgeable	1	2	3	4	5	6	7	8	9
Educated	1	2	3	4	5	6	7	8	9
Wise	1	2	3	4	5	6	7	8	9
Intellectual	1	2	3	4	5	6	7	8	9
Motivated	1	2	3	4	5	6	7	8	9
Dedicated	1	2	3	4	5	6	7	8	9
Hard-working	1	2	3	4	5	6	7	8	9
Bold	1	2	3	4	5	6	7	8	9
Dynamic	1	2	3	4	5	6	7	8	9
Strong	1	2	3	4	5	6	7	8	9
Energetic	1	2	3	4	5	6	7	8	9
Confident	1	2	3	4	5	6	7	8	9
Determined	1	2	3	4	5	6	7	8	9
Charismatic	1	2	3	4	5	6	7	8	9
Domineering	1	2	3	4	5	6	7	8	9
Pushy	1	2	3	4	5	6	7	8	9
Dominant	1	2	3	4	5	6	7	8	9
Manipulative	1	2	3	4	5	6	7	8	9
Conceited	1	2	3	4	5	6	7	8	9
Selfish	1	2	3	4	5	6	7	8	9
Loud	1	2	3	4	5	6	7	8	9
Credible	1	2	3	4	5	6	7	8	9
Stressed	1	2	3	4	5	6	7	8	9
Uncertain	1	2	3	4	5	6	7	8	9
Smiling	1	2	3	4	5	6	7	8	9
Likeable	1	2	3	4	5	6	7	8	9
Competent	1	2	3	4	5	6	7	8	9
Attractive	1	2	3	4	5	6	7	8	9
Masculine	1	2	3	4	5	6	7	8	9

**Part B1**

The man you are going to see in this part is the head of research team of the HRM department in one of the banks in Cyprus and his name is Mr Ioannou. Mr Ioannou is , currently, abroad for business matters. The research group who is leading are trying to resolve a problem that came up. They decide to call Mr Ioannou in a video-call to help with the problem. You are now going to watch a 14-second extract from the specific video-call without the sound seeing only Mr Ioannou.

The video-call starts with Mr Ioannou saying hi to the HRM team. He then listens to the problem and he gives a solution.

**--- VIDEOCALL EXTRACT 1 ---**

1. Could that person be a leader? Why?

.....  
.....  
.....

2. From a scale 1-9 with 9 being the maximum score what is the overall leadership score that you would give to that man by the information you saw above?

Score:

3. Describe how you imagine Mr Ioannou's character would be like based on the videotaped extracts you saw above.

.....  
.....  
.....  
.....  
.....

4. The man at the photo, Mr Ioannou, is one of the candidates to get promoted. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

	<div style="display: flex; justify-content: space-between; align-items: center;"> <span>Not at all Characteristic</span> <span>Extremely Characteristic</span> </div> <div style="text-align: center; margin-top: 5px;"> </div>								
	1	2	3	4	5	6	7	8	9
Understanding	1	2	3	4	5	6	7	8	9
Sincere	1	2	3	4	5	6	7	8	9
Compassionate	1	2	3	4	5	6	7	8	9
Helpful	1	2	3	4	5	6	7	8	9
Sensitive	1	2	3	4	5	6	7	8	9
Warm	1	2	3	4	5	6	7	8	9
Forgiving	1	2	3	4	5	6	7	8	9
Intelligent	1	2	3	4	5	6	7	8	9
Clever	1	2	3	4	5	6	7	8	9
Knowledgeable	1	2	3	4	5	6	7	8	9
Educated	1	2	3	4	5	6	7	8	9
Wise	1	2	3	4	5	6	7	8	9
Intellectual	1	2	3	4	5	6	7	8	9
Motivated	1	2	3	4	5	6	7	8	9
Dedicated	1	2	3	4	5	6	7	8	9
Hard-working	1	2	3	4	5	6	7	8	9
Bold	1	2	3	4	5	6	7	8	9
Dynamic	1	2	3	4	5	6	7	8	9
Strong	1	2	3	4	5	6	7	8	9
Energetic	1	2	3	4	5	6	7	8	9
Confident	1	2	3	4	5	6	7	8	9
Determined	1	2	3	4	5	6	7	8	9
Charismatic	1	2	3	4	5	6	7	8	9
Domineering	1	2	3	4	5	6	7	8	9
Pushy	1	2	3	4	5	6	7	8	9
Dominant	1	2	3	4	5	6	7	8	9
Manipulative	1	2	3	4	5	6	7	8	9
Conceited	1	2	3	4	5	6	7	8	9
Selfish	1	2	3	4	5	6	7	8	9
Loud	1	2	3	4	5	6	7	8	9
Credible	1	2	3	4	5	6	7	8	9
Stressed	1	2	3	4	5	6	7	8	9
Uncertain	1	2	3	4	5	6	7	8	9
Smiling	1	2	3	4	5	6	7	8	9
Likeable	1	2	3	4	5	6	7	8	9
Competent	1	2	3	4	5	6	7	8	9
Attractive	1	2	3	4	5	6	7	8	9
Masculine	1	2	3	4	5	6	7	8	9



**Part B2**

The man you are going to see in this part is the head of research team of the HRM department in one of the banks in Cyprus and his name is Mr Ioannou. Mr Ioannou is , currently, abroad for business matters. The research group who is leading are trying to resolve a problem that came up. They decide to call Mr Ioannou in a video-call to help with the problem. You are now going to watch a 14-second extract from the specific video-call without the sound seeing only Mr Ioannou.

The video-call starts with Mr Ioannou saying hi to the HRM team. He then listens to the problem and he gives a solution.

**--- VIDEOCALL EXTRACT 2 ---**

1. Could that person be a leader? Why?

.....  
.....  
.....

2. From a scale 1-9 with 9 being the maximum score what is the overall leadership score that you would give to that man by the information you saw above?

Score:

3. Describe how you imagine Mr Ioannou's character would be like based on the videotaped extracts you saw above.

.....  
.....  
.....  
.....  
.....

4. The man at the photo, Mr Ioannou, is one of the candidates to get promoted. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

	Not at all Characteristic								Extremely Characteristic
	----->								
Understanding	1	2	3	4	5	6	7	8	9
Sincere	1	2	3	4	5	6	7	8	9
Compassionate	1	2	3	4	5	6	7	8	9
Helpful	1	2	3	4	5	6	7	8	9
Sensitive	1	2	3	4	5	6	7	8	9
Warm	1	2	3	4	5	6	7	8	9
Forgiving	1	2	3	4	5	6	7	8	9
Intelligent	1	2	3	4	5	6	7	8	9
Clever	1	2	3	4	5	6	7	8	9
Knowledgeable	1	2	3	4	5	6	7	8	9
Educated	1	2	3	4	5	6	7	8	9
Wise	1	2	3	4	5	6	7	8	9
Intellectual	1	2	3	4	5	6	7	8	9
Motivated	1	2	3	4	5	6	7	8	9
Dedicated	1	2	3	4	5	6	7	8	9
Hard-working	1	2	3	4	5	6	7	8	9
Bold	1	2	3	4	5	6	7	8	9
Dynamic	1	2	3	4	5	6	7	8	9
Strong	1	2	3	4	5	6	7	8	9
Energetic	1	2	3	4	5	6	7	8	9
Confident	1	2	3	4	5	6	7	8	9
Determined	1	2	3	4	5	6	7	8	9
Charismatic	1	2	3	4	5	6	7	8	9
Domineering	1	2	3	4	5	6	7	8	9
Pushy	1	2	3	4	5	6	7	8	9
Dominant	1	2	3	4	5	6	7	8	9
Manipulative	1	2	3	4	5	6	7	8	9
Conceited	1	2	3	4	5	6	7	8	9
Selfish	1	2	3	4	5	6	7	8	9
Loud	1	2	3	4	5	6	7	8	9
Credible	1	2	3	4	5	6	7	8	9
Stressed	1	2	3	4	5	6	7	8	9
Uncertain	1	2	3	4	5	6	7	8	9
Smiling	1	2	3	4	5	6	7	8	9
Likeable	1	2	3	4	5	6	7	8	9
Competent	1	2	3	4	5	6	7	8	9
Attractive	1	2	3	4	5	6	7	8	9
Masculine	1	2	3	4	5	6	7	8	9

**Part B3**

The man you are going to see in this part is the head of research team of the HRM department in one of the banks in Cyprus and his name is Mr Ioannou. Mr Ioannou is , currently, abroad for business matters. The research group who is leading are trying to resolve a problem that came up. They decide to call Mr Ioannou in a video-call to help with the problem. You are now going to watch a 14-second extract from the specific video-call without the sound seeing only Mr Ioannou.

The video-call starts with Mr Ioannou saying hi to the HRM team. He then listens to the problem and he gives a solution.

**--- VIDEOCALL EXTRACT 3 ---**

1. Could that person be a leader? Why?

.....  
.....  
.....

2. From a scale 1-9 with 9 being the maximum score what is the overall leadership score that you would give to that man by the information you saw above?

Score:





3. Describe how you imagine Mr Ioannou's character would be like based on the videotaped extracts you saw above.



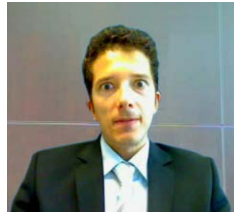

.....  
.....  
.....  
.....  
.....

4. The man at the photo, Mr Ioannou, is one of the candidates to get promoted. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

	Not at all Characteristic								Extremely Characteristic
	----->								
Understanding	1	2	3	4	5	6	7	8	9
Sincere	1	2	3	4	5	6	7	8	9
Compassionate	1	2	3	4	5	6	7	8	9
Helpful	1	2	3	4	5	6	7	8	9
Sensitive	1	2	3	4	5	6	7	8	9
Warm	1	2	3	4	5	6	7	8	9
Forgiving	1	2	3	4	5	6	7	8	9
Intelligent	1	2	3	4	5	6	7	8	9
Clever	1	2	3	4	5	6	7	8	9
Knowledgeable	1	2	3	4	5	6	7	8	9
Educated	1	2	3	4	5	6	7	8	9
Wise	1	2	3	4	5	6	7	8	9
Intellectual	1	2	3	4	5	6	7	8	9
Motivated	1	2	3	4	5	6	7	8	9
Dedicated	1	2	3	4	5	6	7	8	9
Hard-working	1	2	3	4	5	6	7	8	9
Bold	1	2	3	4	5	6	7	8	9
Dynamic	1	2	3	4	5	6	7	8	9
Strong	1	2	3	4	5	6	7	8	9
Energetic	1	2	3	4	5	6	7	8	9
Confident	1	2	3	4	5	6	7	8	9
Determined	1	2	3	4	5	6	7	8	9
Charismatic	1	2	3	4	5	6	7	8	9
Domineering	1	2	3	4	5	6	7	8	9
Pushy	1	2	3	4	5	6	7	8	9
Dominant	1	2	3	4	5	6	7	8	9
Manipulative	1	2	3	4	5	6	7	8	9
Conceited	1	2	3	4	5	6	7	8	9
Selfish	1	2	3	4	5	6	7	8	9
Loud	1	2	3	4	5	6	7	8	9
Credible	1	2	3	4	5	6	7	8	9
Stressed	1	2	3	4	5	6	7	8	9
Uncertain	1	2	3	4	5	6	7	8	9
Smiling	1	2	3	4	5	6	7	8	9
Likeable	1	2	3	4	5	6	7	8	9
Competent	1	2	3	4	5	6	7	8	9
Attractive	1	2	3	4	5	6	7	8	9
Masculine	1	2	3	4	5	6	7	8	9

**APPENDIX M**  
**FACS CODING: STUDIES 4 AND 5**

<b><u>Picture</u></b>				
<b><u>FACS Coding</u></b>	0	6B+12D+25D	1B+4D+7C+12A +85	12C+50
<b><u>Main movement</u></b>	Neutral	smile with teeth showing and eye muscle activation	eye lowered together and eye lids tightening, nodding, with a light smile	smile with teeth showing during speech without eye muscle activation

<b><u>Picture</u></b>				
<b><u>FACS Coding</u></b>	1E+4D+6E+7E+11B+50	11A+14C+23B+43D+56B+38C+50	1B+2A+5D+7A+14C+23B+38B+50	1D+2D+12C+25B+43A
<b><u>Main movement</u></b>	eye brow raise and pull together with cheek raise and eyelids tightening during speech	dimpler with eye closure, nostril flair, lips tightening, slight head tilt during speaking (not a clear peak)	eye lowered together and upper eye lid raiser and eye lids tightening	smile without eye muscle activation with eye brow raise

**APPENDIX N**  
HYPOTHETICAL CONVERSATION OF THE LEADER WITH THE MEMBER OF  
HRM GROUP

Member of HRM group: *Mr Ioannou, hi!*

Mr Ioannou: *hi*

Member of HRM group: *we are just calling to tell you that we are having a problem with the new software, if you could help...*

Mr Ioannou: *(thinking)*

Mr Ioannou: *yes, basically it is very simple. You just need to follow step to step what regulation P3 suggests...*

**APPENDIX O**  
**INTERRATER RELIABILITY FOR FACS CODING: STUDIES 4 AND 5**

	basic		Manipulation				
	smiling	pondering	smiling	Nervous	angry	angry with AU: 10	smiling with eyebrow raise
Coder 1	6B+12 D+25D	1B+4D+7 C+12A+85	12C+5 0	1E+4D+ 6E+7E+1 1B+50	11A+14 C+23B+ 43D+56 B+38C+ 50	1B+2A+5D +7A+14C+2 3B+38B+50	1D+2D+12 C+25B+43 A
Coder 2	6B+12 D+25D	1B+4C+7 C+12B+29 A+85	12C+5 0	1C+4D+ 6D+7E+ 50	14C+23 B+43C+ 56B+38 C+50	5D+14B+23 B+38B+50	1D+2D+12 C+25B+43 A
Agreement	1	0.81	1	0.72	0.72	0.76	1

*Note.* Only item frequencies  $\geq 5$  are included in the tables. FACS formula agreement statistic: (exact number of agreement for the two coders) X2/all the scorings from both coders.

**Overall agreement index: 0.86**

**APPENDIX P**

**“YES” AND “NO” FIGURES AND TABLES: STUDY 4**

Figure P1 (variation 1): Participants ratings separately for those who accepted the actor as a potential leader and those who did not.

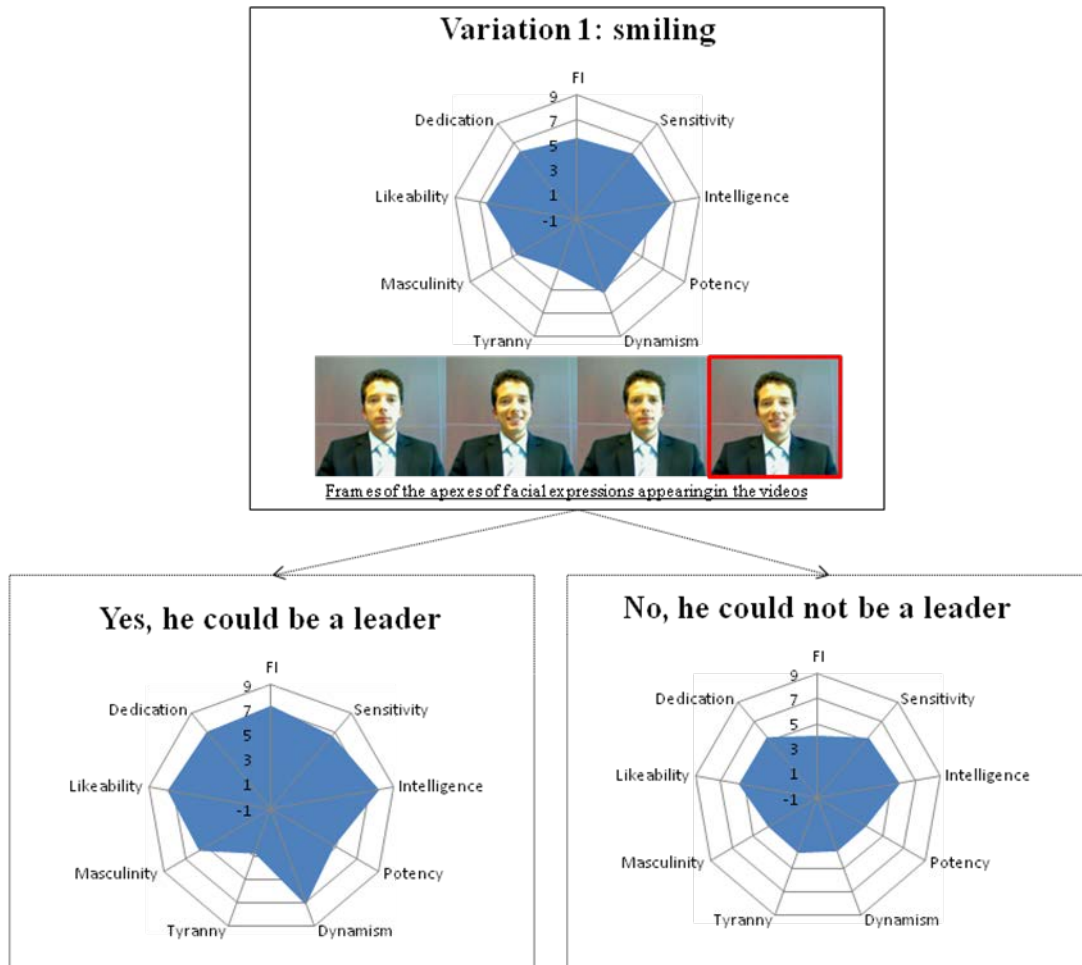


Table 1: Significant differences between participants’ responses for groups “yes he could be a leader” and “no he could not be a leader” for variation 1

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances				Sig. (2-tailed)
				F	Sig.	t	df	
FI	Yes	4	1.13	0.056	0.814	11.823	61	0.000
	No	7.29	1.07					
	Yes	5.30	1.59					



Sensitivity	No	6.68	1.18	5.032	0.029	-3.892	61	0.000
	Yes	5.64	1.47					
Intelligence	No	7.85	1.05	5.496	0.022	-6.838	61	0.000
	Yes	3.46	1.36					
Potency	No	4.88	1.81	3.592	0.063	-3.514	61	0.001
	Yes	3.53	1.55					
Dynamism	No	7.17	1.29	2.51	0.118	10.102	61	0.000
	Yes	3.68	1.23					
Tyranny	No	2.79	1.34	0.201	0.655	2.72	61	0.008
	Yes	3.59	1.60					
Masculinity	No	5.69	1.98	2.174	0.145	-4.618	61	0.000
	Yes	5.43	2.17					
Likeability	No	7.48	1.38	7.729	0.007	-4.439	61	0.000
	Yes	5.37	1.56					
Dedication	No	7.07	2.00	0.352	0.555	-3.761	61	0.000

---

**APPENDIX Q**  
**QUESTIONNAIRES: STUDY 5**

**Part B4**

The man you are going to see in this part is the head of research team of the HRM department in one of the banks in Cyprus and his name is Mr Ioannou. Mr Ioannou is, currently, abroad for business matters. The research group who is leading are trying to resolve a problem that came up. They decide to call Mr Ioannou in a video-call to help with the problem. You are now going to see still photo extracts from the specific video-call, seeing only Mr Ioannou.

The video-call starts with Mr Ioannou saying hi to the HRM team. He then listens to the problem and he gives a solution.



1. Could that person be a leader? Why?

.....  
.....  
.....

2. From a scale 1-9 with 9 being the maximum score what is the overall leadership score that you would give to that man by the information you saw above?

Score:

3. Describe how you imagine Mr Ioannou's character would be like based on the videotaped extracts you saw above.

.....  
.....  
.....  
.....  
.....

4. The man at the photo, Mr Ioannou, is one of the candidates to get promoted. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

	Not at all Characteristic								Extremely Characteristic
	----->								
Understanding	1	2	3	4	5	6	7	8	9
Sincere	1	2	3	4	5	6	7	8	9
Compassionate	1	2	3	4	5	6	7	8	9
Helpful	1	2	3	4	5	6	7	8	9
Sensitive	1	2	3	4	5	6	7	8	9
Warm	1	2	3	4	5	6	7	8	9
Forgiving	1	2	3	4	5	6	7	8	9
Intelligent	1	2	3	4	5	6	7	8	9
Clever	1	2	3	4	5	6	7	8	9
Knowledgeable	1	2	3	4	5	6	7	8	9
Educated	1	2	3	4	5	6	7	8	9
Wise	1	2	3	4	5	6	7	8	9
Intellectual	1	2	3	4	5	6	7	8	9
Motivated	1	2	3	4	5	6	7	8	9
Dedicated	1	2	3	4	5	6	7	8	9
Hard-working	1	2	3	4	5	6	7	8	9
Bold	1	2	3	4	5	6	7	8	9
Dynamic	1	2	3	4	5	6	7	8	9
Strong	1	2	3	4	5	6	7	8	9
Energetic	1	2	3	4	5	6	7	8	9
Confident	1	2	3	4	5	6	7	8	9
Determined	1	2	3	4	5	6	7	8	9
Charismatic	1	2	3	4	5	6	7	8	9
Domineering	1	2	3	4	5	6	7	8	9
Pushy	1	2	3	4	5	6	7	8	9
Dominant	1	2	3	4	5	6	7	8	9
Manipulative	1	2	3	4	5	6	7	8	9
Conceited	1	2	3	4	5	6	7	8	9
Selfish	1	2	3	4	5	6	7	8	9
Loud	1	2	3	4	5	6	7	8	9
Credible	1	2	3	4	5	6	7	8	9
Stressed	1	2	3	4	5	6	7	8	9
Uncertain	1	2	3	4	5	6	7	8	9
Smiling	1	2	3	4	5	6	7	8	9
Likeable	1	2	3	4	5	6	7	8	9
Competent	1	2	3	4	5	6	7	8	9
Attractive	1	2	3	4	5	6	7	8	9
Masculine	1	2	3	4	5	6	7	8	9

**Part B5**

The man you are going to see in this part is the head of research team of the HRM department in one of the banks in Cyprus and his name is Mr Ioannou. Mr Ioannou is, currently, abroad for business matters. The research group who is leading are trying to resolve a problem that came up. They decide to call Mr Ioannou in a video-call to help with the problem. You are now going to see still photo extracts from the specific video-call, seeing only Mr Ioannou.

The video-call starts with Mr Ioannou saying hi to the HRM team. He then listens to the problem and he gives a solution.



1. Could that person be a leader? Why?

.....  
.....  
.....

2. From a scale 1-9 with 9 being the maximum score what is the overall leadership score that you would give to that man by the information you saw above?

Score:

3. Describe how you imagine Mr Ioannou's character would be like based on the videotaped extracts you saw above.

.....  
.....  
.....  
.....  
.....

4. The man at the photo, Mr Ioannou, is one of the candidates to get promoted. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

	<div style="display: flex; justify-content: space-between; align-items: center;"> <span>Not at all Characteristic</span> <span>Extremely Characteristic</span> </div> <div style="text-align: center; margin-top: 5px;"> </div>								
	1	2	3	4	5	6	7	8	9
Understanding	1	2	3	4	5	6	7	8	9
Sincere	1	2	3	4	5	6	7	8	9
Compassionate	1	2	3	4	5	6	7	8	9
Helpful	1	2	3	4	5	6	7	8	9
Sensitive	1	2	3	4	5	6	7	8	9
Warm	1	2	3	4	5	6	7	8	9
Forgiving	1	2	3	4	5	6	7	8	9
Intelligent	1	2	3	4	5	6	7	8	9
Clever	1	2	3	4	5	6	7	8	9
Knowledgeable	1	2	3	4	5	6	7	8	9
Educated	1	2	3	4	5	6	7	8	9
Wise	1	2	3	4	5	6	7	8	9
Intellectual	1	2	3	4	5	6	7	8	9
Motivated	1	2	3	4	5	6	7	8	9
Dedicated	1	2	3	4	5	6	7	8	9
Hard-working	1	2	3	4	5	6	7	8	9
Bold	1	2	3	4	5	6	7	8	9
Dynamic	1	2	3	4	5	6	7	8	9
Strong	1	2	3	4	5	6	7	8	9
Energetic	1	2	3	4	5	6	7	8	9
Confident	1	2	3	4	5	6	7	8	9
Determined	1	2	3	4	5	6	7	8	9
Charismatic	1	2	3	4	5	6	7	8	9
Domineering	1	2	3	4	5	6	7	8	9
Pushy	1	2	3	4	5	6	7	8	9
Dominant	1	2	3	4	5	6	7	8	9
Manipulative	1	2	3	4	5	6	7	8	9
Conceited	1	2	3	4	5	6	7	8	9
Selfish	1	2	3	4	5	6	7	8	9
Loud	1	2	3	4	5	6	7	8	9
Credible	1	2	3	4	5	6	7	8	9
Stressed	1	2	3	4	5	6	7	8	9
Uncertain	1	2	3	4	5	6	7	8	9
Smiling	1	2	3	4	5	6	7	8	9
Likeable	1	2	3	4	5	6	7	8	9
Competent	1	2	3	4	5	6	7	8	9
Attractive	1	2	3	4	5	6	7	8	9
Masculine	1	2	3	4	5	6	7	8	9

**Part B6**

The man you are going to see in this part is the head of research team of the HRM department in one of the banks in Cyprus and his name is Mr Ioannou. Mr Ioannou is, currently, abroad for business matters. The research group who is leading are trying to resolve a problem that came up. They decide to call Mr Ioannou in a video-call to help with the problem. You are now going to see still photo extracts from the specific video-call, seeing only Mr Ioannou.

The video-call starts with Mr Ioannou saying hi to the HRM team. He then listens to the problem and he gives a solution.



1. Could that person be a leader? Why?

.....  
.....  
.....

2. From a scale 1-9 with 9 being the maximum score what is the overall leadership score that you would give to that man by the information you saw above?

Score:

3. Describe how you imagine Mr Ioannou's character would be like based on the videotaped extracts you saw above.

.....  
.....  
.....  
.....

4. The man at the photo, Mr Ioannou, is one of the candidates to get promoted. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

	<div style="display: flex; justify-content: space-between; align-items: center;"> <span>Not at all Characteristic</span> <span>Extremely Characteristic</span> </div> <div style="text-align: center; margin-top: 5px;"> </div>								
	1	2	3	4	5	6	7	8	9
Understanding	1	2	3	4	5	6	7	8	9
Sincere	1	2	3	4	5	6	7	8	9
Compassionate	1	2	3	4	5	6	7	8	9
Helpful	1	2	3	4	5	6	7	8	9
Sensitive	1	2	3	4	5	6	7	8	9
Warm	1	2	3	4	5	6	7	8	9
Forgiving	1	2	3	4	5	6	7	8	9
Intelligent	1	2	3	4	5	6	7	8	9
Clever	1	2	3	4	5	6	7	8	9
Knowledgeable	1	2	3	4	5	6	7	8	9
Educated	1	2	3	4	5	6	7	8	9
Wise	1	2	3	4	5	6	7	8	9
Intellectual	1	2	3	4	5	6	7	8	9
Motivated	1	2	3	4	5	6	7	8	9
Dedicated	1	2	3	4	5	6	7	8	9
Hard-working	1	2	3	4	5	6	7	8	9
Bold	1	2	3	4	5	6	7	8	9
Dynamic	1	2	3	4	5	6	7	8	9
Strong	1	2	3	4	5	6	7	8	9
Energetic	1	2	3	4	5	6	7	8	9
Confident	1	2	3	4	5	6	7	8	9
Determined	1	2	3	4	5	6	7	8	9
Charismatic	1	2	3	4	5	6	7	8	9
Domineering	1	2	3	4	5	6	7	8	9
Pushy	1	2	3	4	5	6	7	8	9
Dominant	1	2	3	4	5	6	7	8	9
Manipulative	1	2	3	4	5	6	7	8	9
Conceited	1	2	3	4	5	6	7	8	9
Selfish	1	2	3	4	5	6	7	8	9
Loud	1	2	3	4	5	6	7	8	9
Credible	1	2	3	4	5	6	7	8	9
Stressed	1	2	3	4	5	6	7	8	9
Uncertain	1	2	3	4	5	6	7	8	9
Smiling	1	2	3	4	5	6	7	8	9
Likeable	1	2	3	4	5	6	7	8	9
Competent	1	2	3	4	5	6	7	8	9
Attractive	1	2	3	4	5	6	7	8	9
Masculine	1	2	3	4	5	6	7	8	9

**Part B7**

The man you are going to see in this part is the head of research team of the HRM department in one of the banks in Cyprus and his name is Mr Ioannou. Mr Ioannou is, currently, abroad for business matters. The research group who is leading are trying to resolve a problem that came up. They decide to call Mr Ioannou in a video-call to help with the problem. You are now going to see still photo extracts from the specific video-call, seeing only Mr Ioannou.

The video-call starts with Mr Ioannou saying hi to the HRM team. He then listens to the problem and he gives a solution.



1. Could that person be a leader? Why?

.....  
.....  
.....

2. From a scale 1-9 with 9 being the maximum score what is the overall leadership score that you would give to that man by the information you saw above?

Score:

3. Describe how you imagine Mr Ioannou's character would be like based on the videotaped extracts you saw above.

.....  
.....  
.....  
.....  
.....



4. The man at the photo, Mr Ioannou, is one of the candidates to get promoted. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

	Not at all Characteristic								Extremely Characteristic
	----->								
Understanding	1	2	3	4	5	6	7	8	9
Sincere	1	2	3	4	5	6	7	8	9
Compassionate	1	2	3	4	5	6	7	8	9
Helpful	1	2	3	4	5	6	7	8	9
Sensitive	1	2	3	4	5	6	7	8	9
Warm	1	2	3	4	5	6	7	8	9
Forgiving	1	2	3	4	5	6	7	8	9
Intelligent	1	2	3	4	5	6	7	8	9
Clever	1	2	3	4	5	6	7	8	9
Knowledgeable	1	2	3	4	5	6	7	8	9
Educated	1	2	3	4	5	6	7	8	9
Wise	1	2	3	4	5	6	7	8	9
Intellectual	1	2	3	4	5	6	7	8	9
Motivated	1	2	3	4	5	6	7	8	9
Dedicated	1	2	3	4	5	6	7	8	9
Hard-working	1	2	3	4	5	6	7	8	9
Bold	1	2	3	4	5	6	7	8	9
Dynamic	1	2	3	4	5	6	7	8	9
Strong	1	2	3	4	5	6	7	8	9
Energetic	1	2	3	4	5	6	7	8	9
Confident	1	2	3	4	5	6	7	8	9
Determined	1	2	3	4	5	6	7	8	9
Charismatic	1	2	3	4	5	6	7	8	9
Domineering	1	2	3	4	5	6	7	8	9
Pushy	1	2	3	4	5	6	7	8	9
Dominant	1	2	3	4	5	6	7	8	9
Manipulative	1	2	3	4	5	6	7	8	9
Conceited	1	2	3	4	5	6	7	8	9
Selfish	1	2	3	4	5	6	7	8	9
Loud	1	2	3	4	5	6	7	8	9
Credible	1	2	3	4	5	6	7	8	9
Stressed	1	2	3	4	5	6	7	8	9
Uncertain	1	2	3	4	5	6	7	8	9
Smiling	1	2	3	4	5	6	7	8	9
Likeable	1	2	3	4	5	6	7	8	9
Competent	1	2	3	4	5	6	7	8	9
Attractive	1	2	3	4	5	6	7	8	9
Masculine	1	2	3	4	5	6	7	8	9

**Part B8**

The man you are going to see in this part is the head of research team of the HRM department in one of the banks in Cyprus and his name is Mr Ioannou. Research has shown that people are surprisingly accurate from drawing trait inferences from people's faces. Furthermore you are going to be asked to answer questions regarding how would you imagine Mr Ioannou's character.



1. Could that person be a leader? Why?

.....  
.....  
.....

2. From a scale 1-9 with 9 being the maximum score what is the overall leadership score that you would give to that man by the information you saw above?

Score:

3. Describe how you imagine Mr Ioannou's character would be like based on the videotaped extracts you saw above.

.....  
.....  
.....  
.....  
.....

4. The man at the photo, Mr Ioannou, is one of the candidates to get promoted. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

	Not at all Characteristic <span style="float: right;">Extremely Characteristic</span> ----->								
	1	2	3	4	5	6	7	8	9
Understanding	1	2	3	4	5	6	7	8	9
Sincere	1	2	3	4	5	6	7	8	9
Compassionate	1	2	3	4	5	6	7	8	9
Helpful	1	2	3	4	5	6	7	8	9
Sensitive	1	2	3	4	5	6	7	8	9
Warm	1	2	3	4	5	6	7	8	9
Forgiving	1	2	3	4	5	6	7	8	9
Intelligent	1	2	3	4	5	6	7	8	9
Clever	1	2	3	4	5	6	7	8	9
Knowledgeable	1	2	3	4	5	6	7	8	9
Educated	1	2	3	4	5	6	7	8	9
Wise	1	2	3	4	5	6	7	8	9
Intellectual	1	2	3	4	5	6	7	8	9
Motivated	1	2	3	4	5	6	7	8	9
Dedicated	1	2	3	4	5	6	7	8	9
Hard-working	1	2	3	4	5	6	7	8	9
Bold	1	2	3	4	5	6	7	8	9
Dynamic	1	2	3	4	5	6	7	8	9
Strong	1	2	3	4	5	6	7	8	9
Energetic	1	2	3	4	5	6	7	8	9
Confident	1	2	3	4	5	6	7	8	9
Determined	1	2	3	4	5	6	7	8	9
Charismatic	1	2	3	4	5	6	7	8	9
Domineering	1	2	3	4	5	6	7	8	9
Pushy	1	2	3	4	5	6	7	8	9
Dominant	1	2	3	4	5	6	7	8	9
Manipulative	1	2	3	4	5	6	7	8	9
Conceited	1	2	3	4	5	6	7	8	9
Selfish	1	2	3	4	5	6	7	8	9
Loud	1	2	3	4	5	6	7	8	9
Credible	1	2	3	4	5	6	7	8	9
Stressed	1	2	3	4	5	6	7	8	9
Uncertain	1	2	3	4	5	6	7	8	9
Smiling	1	2	3	4	5	6	7	8	9
Likeable	1	2	3	4	5	6	7	8	9
Competent	1	2	3	4	5	6	7	8	9
Attractive	1	2	3	4	5	6	7	8	9
Masculine	1	2	3	4	5	6	7	8	9

**Part B9**

The man you are going to see in this part is the head of research team of the HRM department in one of the banks in Cyprus and his name is Mr Ioannou. Mr Ioannou is, currently, abroad for business matters. The research group who is leading are trying to resolve a problem that came up. They decide to call Mr Ioannou in a video-call to help with the problem. You are now going to see still photo extracts from the specific video-call, seeing only Mr Ioannou.

The video-call starts with Mr Ioannou saying hi to the HRM team. He then listens to the problem and he gives a solution.



1. Could that person be a leader? Why?

.....  
.....  
.....

2. From a scale 1-9 with 9 being the maximum score what is the overall leadership score that you would give to that man by the information you saw above?

Score:

3. Describe how you imagine Mr Ioannou's character would be like based on the videotaped extracts you saw above.

.....  
.....  
.....  
.....  
.....

4. The man at the photo, Mr Ioannou, is one of the candidates to get promoted. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

	<div style="display: flex; justify-content: space-between; align-items: center;"> <span>Not at all Characteristic</span> <span>Extremely Characteristic</span> </div> <div style="text-align: center; margin-top: 5px;"> </div>								
	1	2	3	4	5	6	7	8	9
Understanding	1	2	3	4	5	6	7	8	9
Sincere	1	2	3	4	5	6	7	8	9
Compassionate	1	2	3	4	5	6	7	8	9
Helpful	1	2	3	4	5	6	7	8	9
Sensitive	1	2	3	4	5	6	7	8	9
Warm	1	2	3	4	5	6	7	8	9
Forgiving	1	2	3	4	5	6	7	8	9
Intelligent	1	2	3	4	5	6	7	8	9
Clever	1	2	3	4	5	6	7	8	9
Knowledgeable	1	2	3	4	5	6	7	8	9
Educated	1	2	3	4	5	6	7	8	9
Wise	1	2	3	4	5	6	7	8	9
Intellectual	1	2	3	4	5	6	7	8	9
Motivated	1	2	3	4	5	6	7	8	9
Dedicated	1	2	3	4	5	6	7	8	9
Hard-working	1	2	3	4	5	6	7	8	9
Bold	1	2	3	4	5	6	7	8	9
Dynamic	1	2	3	4	5	6	7	8	9
Strong	1	2	3	4	5	6	7	8	9
Energetic	1	2	3	4	5	6	7	8	9
Confident	1	2	3	4	5	6	7	8	9
Determined	1	2	3	4	5	6	7	8	9
Charismatic	1	2	3	4	5	6	7	8	9
Domineering	1	2	3	4	5	6	7	8	9
Pushy	1	2	3	4	5	6	7	8	9
Dominant	1	2	3	4	5	6	7	8	9
Manipulative	1	2	3	4	5	6	7	8	9
Conceited	1	2	3	4	5	6	7	8	9
Selfish	1	2	3	4	5	6	7	8	9
Loud	1	2	3	4	5	6	7	8	9
Credible	1	2	3	4	5	6	7	8	9
Stressed	1	2	3	4	5	6	7	8	9
Uncertain	1	2	3	4	5	6	7	8	9
Smiling	1	2	3	4	5	6	7	8	9
Likeable	1	2	3	4	5	6	7	8	9
Competent	1	2	3	4	5	6	7	8	9
Attractive	1	2	3	4	5	6	7	8	9
Masculine	1	2	3	4	5	6	7	8	9

**Part B10**

The man you are going to see in this part is the head of research team of the HRM department in one of the banks in Cyprus and his name is Mr Ioannou. Mr Ioannou is, currently, abroad for business matters. The research group who is leading are trying to resolve a problem that came up. They decide to call Mr Ioannou in a video-call to help with the problem. You are now going to see still photo extracts from the specific video-call, seeing only Mr Ioannou.

The video-call starts with Mr Ioannou saying hi to the HRM team. He then listens to the problem and he gives a solution.



1. Could that person be a leader? Why?

.....  
.....  
.....

2. From a scale 1-9 with 9 being the maximum score what is the overall leadership score that you would give to that man by the information you saw above?

Score:

3. Describe how you imagine Mr Ioannou's character would be like based on the videotaped extracts you saw above.

.....  
.....  
.....  
.....  
.....

4. The man at the photo, Mr Ioannou, is one of the candidates to get promoted. The abilities required for the position fit the “profile” of a business leader. The assessment group must evaluate the candidates in several areas. One of them is leadership abilities (the same list that you have completed in part A). What do you think that the score for that person will be?

	<div style="display: flex; justify-content: space-between; align-items: center;"> <span>Not at all Characteristic</span> <span>Extremely Characteristic</span> </div> <div style="text-align: center; margin-top: 5px;"> </div>								
	1	2	3	4	5	6	7	8	9
Understanding	1	2	3	4	5	6	7	8	9
Sincere	1	2	3	4	5	6	7	8	9
Compassionate	1	2	3	4	5	6	7	8	9
Helpful	1	2	3	4	5	6	7	8	9
Sensitive	1	2	3	4	5	6	7	8	9
Warm	1	2	3	4	5	6	7	8	9
Forgiving	1	2	3	4	5	6	7	8	9
Intelligent	1	2	3	4	5	6	7	8	9
Clever	1	2	3	4	5	6	7	8	9
Knowledgeable	1	2	3	4	5	6	7	8	9
Educated	1	2	3	4	5	6	7	8	9
Wise	1	2	3	4	5	6	7	8	9
Intellectual	1	2	3	4	5	6	7	8	9
Motivated	1	2	3	4	5	6	7	8	9
Dedicated	1	2	3	4	5	6	7	8	9
Hard-working	1	2	3	4	5	6	7	8	9
Bold	1	2	3	4	5	6	7	8	9
Dynamic	1	2	3	4	5	6	7	8	9
Strong	1	2	3	4	5	6	7	8	9
Energetic	1	2	3	4	5	6	7	8	9
Confident	1	2	3	4	5	6	7	8	9
Determined	1	2	3	4	5	6	7	8	9
Charismatic	1	2	3	4	5	6	7	8	9
Domineering	1	2	3	4	5	6	7	8	9
Pushy	1	2	3	4	5	6	7	8	9
Dominant	1	2	3	4	5	6	7	8	9
Manipulative	1	2	3	4	5	6	7	8	9
Conceited	1	2	3	4	5	6	7	8	9
Selfish	1	2	3	4	5	6	7	8	9
Loud	1	2	3	4	5	6	7	8	9
Credible	1	2	3	4	5	6	7	8	9
Stressed	1	2	3	4	5	6	7	8	9
Uncertain	1	2	3	4	5	6	7	8	9
Smiling	1	2	3	4	5	6	7	8	9
Likeable	1	2	3	4	5	6	7	8	9
Competent	1	2	3	4	5	6	7	8	9
Attractive	1	2	3	4	5	6	7	8	9
Masculine	1	2	3	4	5	6	7	8	9

Extra variation, B11 : identifying underlying emotions

**Part A**

*a. General information*


1. Gender:                      Male                      Female
2. Age range:    20-25    26-30    31-35    35-40    41-45    46-50    50-55    55-60
3. Nationality: .....
4. Occupation: .....
5. Education  
Degree: .....  
Postgraduate studies: .....

The man you are going to see in this part is the head of research team of the HRM department in one of the banks in Cyprus and his name is Mr Ioannou. You can see Mr Ioannou in the picture below.



Facial expression is a strong indicator of a person’s underlying emotions. Below, you are going to see extracted frames from a computer-to-computer video conference with Mr Ioannou facial expressions. Furthermore you are going to be asked to describe the emotions you think Mr Ioannou was experiencing at the time.

**(1)**



Briefly describe what emotion you think Mr Ioannou is experiencing in picture 1.

.....

.....

.....

.....



(2)



Briefly describe what emotion you think Mr Ioannou is experiencing in picture 2.

.....

.....

.....

.....

(3)



Briefly describe what emotion you think Mr Ioannou is experiencing in picture 3.

.....

.....

.....

.....

(4)



Briefly describe what emotion you think Mr Ioannou is experiencing in picture 4.

.....

.....

.....

.....

(5)



Briefly describe what emotion you think Mr Ioannou is experiencing in picture 5.

.....

.....

.....

.....

(6)



Briefly describe what emotion you think Mr Ioannou is experiencing in picture 6.

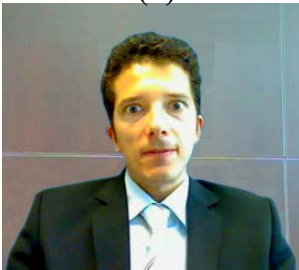
.....

.....

.....

.....

(7)



Briefly describe what emotion you think Mr Ioannou is experiencing in picture 7.

.....

.....

.....

.....

**APPENDIX R**

**“YES” AND “NO” FIGURES AND TABLES: STUDY 5**

Figure R1 (variation 4): Participants ratings separately for those who accepted the actor as a potential leader and those who did not.

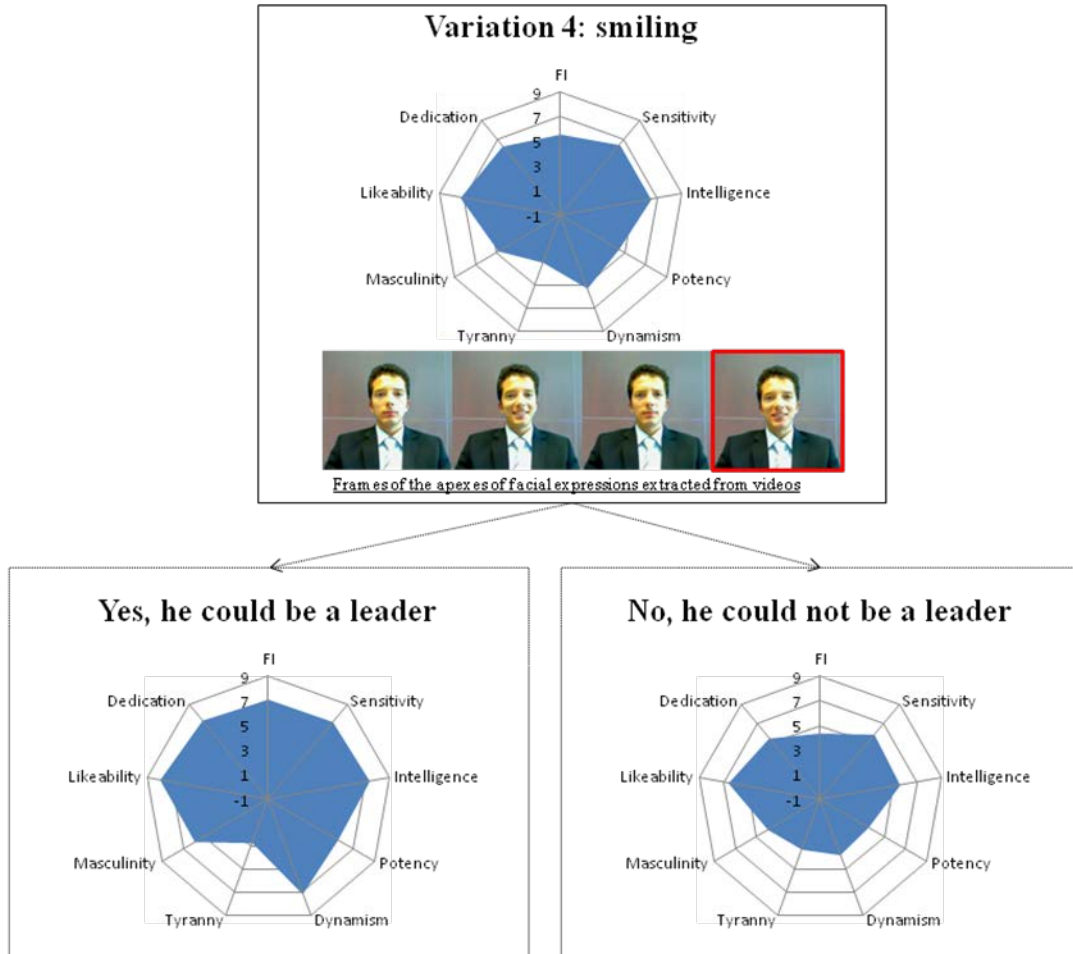


Table R1: Significant differences between participants’ responses for groups “yes he could be a leader” and “no he could not be a leader” for variation 4

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances				Sig. (2-tailed)
				F	Sig.	t	df	
FI	Yes	4.38	1.29	4.041	0.05	8.741	56	0.000
	No	7.06	0.98					
	Yes	5.89	1.82					

Sensitivity	No	7.17	0.97	10.41	0	3.227	56	0.002
	Yes	5.63	1.68					
Intelligence	No	7.39	0.99	7.608	0.01	4.709	56	0.000
	Yes	3.57	1.44					
Potency	No	5.57	1.64	0.356	0.55	4.929	56	0.000
	Yes	3.82	1.53					
Dynamism	No	7.18	1.34	1.174	0.28	8.793	56	0.000
	Yes	3.34	1.39					
Tyranny	No	2.77	1.41	0.02	0.89	1.543	56	0.128
	Yes	3.92	1.74					
Masculinity	No	5.9	2.12	2.675	0.11	3.913	56	0.000
	Yes	6.59	1.63					
Likeability	No	7.94	0.98	8.6	0.01	3.706	56	0.000
	Yes	5.48	1.82					
Dedication	No	7.32	0.89	14.11	0	-4.71	56	0.000

Figure R2 (variation 6): Participants ratings separately for those who accepted the actor as a potential leader and those who did not.

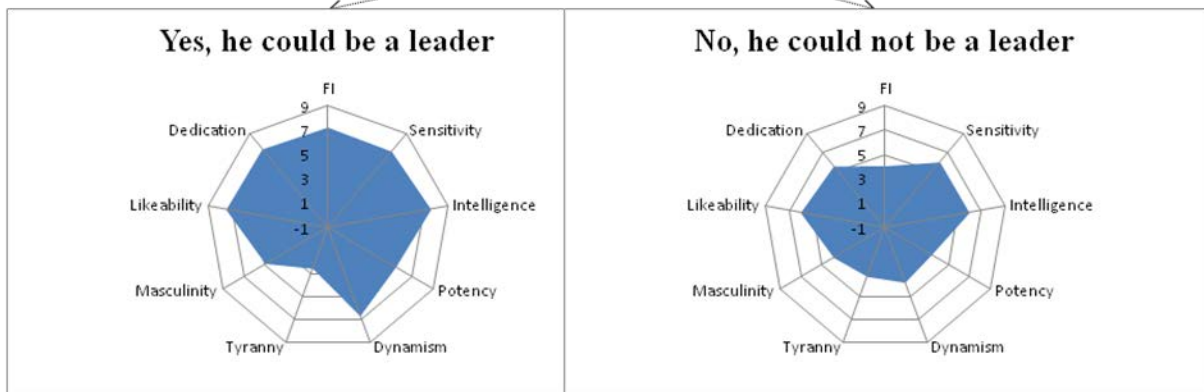
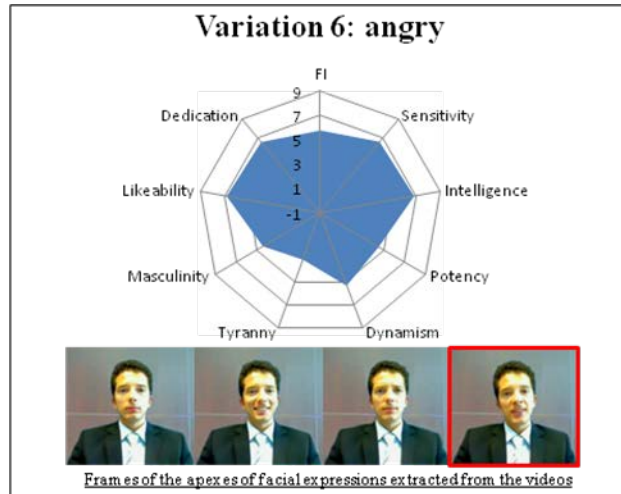


Table R2: Significant differences between participants' responses for groups "yes he could be a leader" and "no he could not be a leader" for variation 6

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		t	df	Sig. (2-tailed)
				F	Sig.			
FI	Yes	4.05	1.39	15.327	.000	10.163	44	0.000
	No	7.21	0.58					
Sensitivity	Yes	6.01	1.45	3.99	0.05	3.133	44	0.003
	No	7.13	0.94					

Intelligence	Yes	6.02	1.32	3.282	0.08	-4.53	44	0.000
	No	7.58	1.00					
Potency	Yes	3.42	1.50	7.531	0.01	5.336	44	0.000
	No	5.45	1.04					
Dynamism	Yes	3.78	1.43	0.061	0.81	6.836	44	0.000
	No	6.72	1.47					
Tyranny	Yes	3.27	1.1	1.474	0.23	1.87	44	0.068
	No	2.58	1.37					
Masculinity	Yes	3.89	1.93	0.292	0.59	-1.64	44	0.108
	No	4.92	2.28					
Likeability	Yes	6.05	1.43	1.818	0.18	3.839	44	0.000
	No	7.46	1.04					
Dedication	Yes	5.58	1.89	9.831	0	4.149	44	0.000
	No	7.38	0.92					

Figure R3 (variation 7): Participants ratings separately for those who accepted the actor as a potential leader and those who did not.

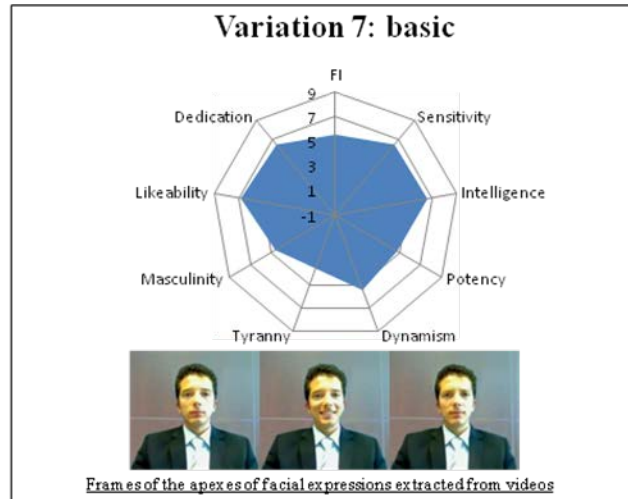


Table R3: Significant differences between participants' responses for groups "yes he could be a leader" and "no he could not be a leader" for variation 7

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances				Sig. (2-tailed)
				F	Sig.	t	df	
FI	Yes	4.08	1.2	7.48	0.01	-10.8	49	0.000
	No	7.04	0.68					
Sensitivity	Yes	5.95	1.98	22.2	0	-2.34	49	0.023
	No	6.97	0.93					

Intelligence	Yes	5.91	1.58					
	No	7.43	0.73	7.61	0.01	-4.36	49	0.000
Potency	Yes	3.8	1.2					
	No	5.83	1.22	0	0.99	-5.99	49	0.000
Dynamism	Yes	3.9	1.4					
	No	7.12	0.88	3.64	0.06	-9.76	49	0.000
Tyranny	Yes	3.62	1.31					
	No	3.5	1.27	0.16	0.7	0.349	49	0.728
Masculinity	Yes	4.12	1.95					
	No	5.12	2.05	0.02	0.89	-1.79	49	0.079
Likeability	Yes	5.98	2.06					
	No	7.68	1.01	9.88	0	-3.72	49	0.001
Dedication	Yes	5.67	1.49					
	No	7.32	0.99	2.2	0.15	-4.65	49	0.000

Figure R4 (variation 10): Participants ratings separately for those who accepted the actor as a potential leader and those who did not.



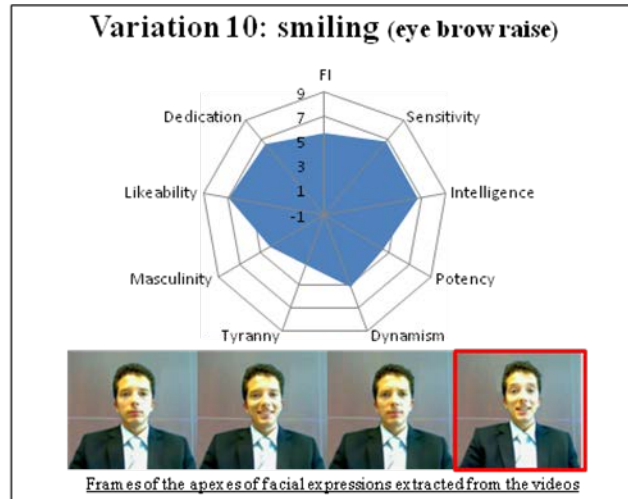


Table R4: Significant differences between participants' responses for groups "yes he could be a leader" and "no he could not be a leader" for variation 10

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances			df	Sig. (2-tailed)
				F	Sig.	t		
FI	Yes	4.22	1.58	7.43	0.01	-8.14	46	0.000
	No	7.29	0.78					
Sensitivity	Yes	6.35	1.55	6.46	0.01	-2.83	46	0.007
	No	7.44	0.93					
	Yes	6.13	1.4					

Intelligence	No	7.55	0.89	3.07	0.09	-4.04	46	0.000
	Yes	3.66	1.54					
Potency	No	5.33	1.59	0.57	0.45	-3.69	46	0.001
	Yes	4.09	1.83					
Dynamism	No	6.4	1.2	2.56	0.12	-5.02	46	0.000
	Yes	3.44	1.49					
Tyranny	No	2.92	1.44	0	0.97	1.207	46	0.234
	Yes	3.43	2.16					
Masculinity	No	4.9	2.08	0.24	0.63	-2.39	46	0.021
	Yes	6.28	1.95					
Likeability	No	7.93	0.91	5.72	0.02	-3.58	46	0.001
	Yes	5.77	1.78					
Dedication	No	7.46	0.99	5.56	0.02	-3.91	46	0.000

---

**APPENDIX S**  
**COMPARISONS OF VARIATION7 (BASIC) WITH THE REST OF THE STATIC VARIATIONS**

Figure S1 (variations 7,4): participants' perceptions of leadership in variation 7 with variation 4

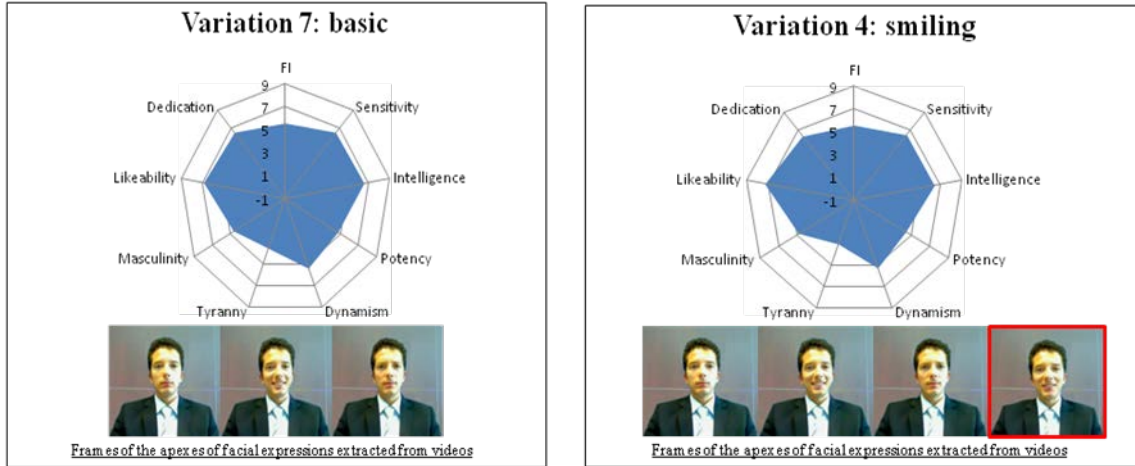


Table S1: Significant differences between participants' responses in variation 7 (basic) with variation 4 (smiling)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances			df	Sig. (2-tailed)
				F	Sig.	t		
FI	Variation 7	5.51	1.74	0.001	0.97	0.178	110	0.859
	Variation 4	5.57	1.77					
Sensitivity	Variation 7	6.45	1.58	0.001	0.97	0.026	110	0.979
	Variation 4	6.46	1.61					
Intelligence	Variation 7	6.60	1.44	1.646	0.2	0.609	110	0.544
	Variation 4							

	Variation 4	6.42	1.65					
	Variation 7	4.79	1.53					
Potency	Variation 4	4.46	1.82	2.868	0.09	1.036	110	0.303
	Variation 7	5.43	1.95					
Dynamism	Variation 4	5.32	2.21	1.268	0.26	0.284	110	0.777
	Variation 7	3.59	1.28					
Tyranny	Variation 4	3.08	1.41	1.111	0.29	1.979	110	0.05
	Variation 7	4.63	2.02					
Masculinity	Variation 4	4.81	2.14	0.09	0.76	0.434	110	0.665
	Variation 7	6.81	1.77					
Likeability	Variation 4	7.19	1.52	0.474	0.49	1.228	110	0.222
	Variation 7	6.45	1.47					
Dedication	Variation 4	6.30	1.73	2.273	0.14	0.499	110	0.619

---

Figure S2 (variations 7,5): participants' perceptions of leadership in variation 7 with variation 5

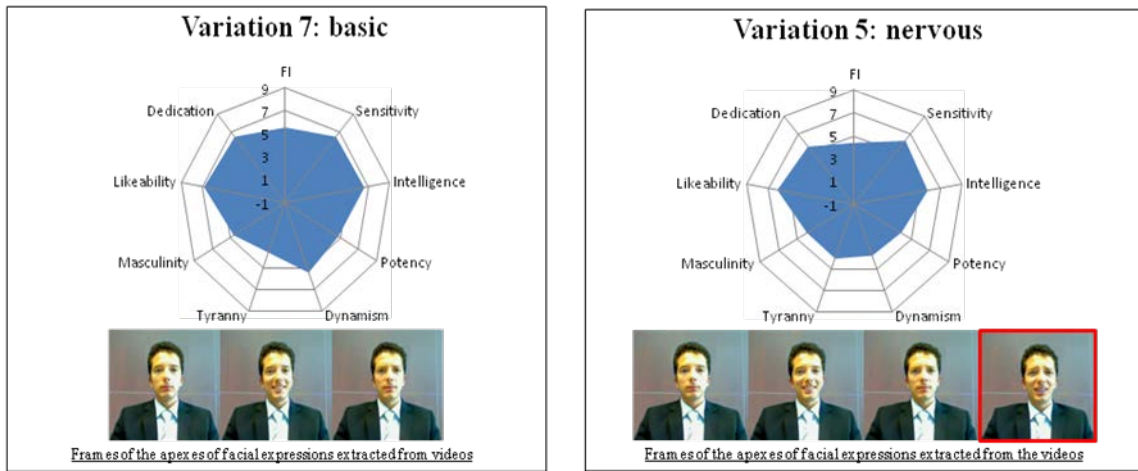


Table S2: Significant differences between participants' responses in variation 7 (basic) with variation 5 (nervous)

Characteristic	Group	Mea n	SD	Levene's Test for Equality of Variances		t	df	Sig. (2- tailed)
				F	Sig.			
FI	Variation 7	5.51	1.74	5.692	0.019	3.739	100	0.000
	Variation 5	4.35	1.34					
Sensitivity	Variation 7	6.45	1.58	0.401	0.528	0.794	100	0.429
	Variation 5	6.21	1.45					
Intelligence	Variation 7	6.60	1.44	0.425	0.516	2.874	100	0.005
	Variation 5	5.75	1.53					
	Variation 7	4.79	1.53					

Potency	Variation 5	3.93	1.60	0.517	0.474	2.76	100	0.007
	Variation 7	5.43	1.95					
Dynamism	Variation 5	3.78	1.75	0.921	0.34	4.479	100	0.000
	Variation 7	3.59	1.28					
Tyranny	Variation 5	4.07	1.43	0.656	0.42	1.781	100	0.078
	Variation 7	4.63	2.02					
Masculinity	Variation 5	3.97	1.93	0.565	0.454	1.677	100	0.097
	Variation 7	6.81	1.77					
Likeability	Variation 5	6.08	1.69	0.015	0.904	2.117	100	0.037
	Variation 7	6.45	1.47					
Dedication	Variation 5	5.55	1.80	2.945	0.089	2.779	100	0.007

---

Figure S3 (variations 7,6): participants' perceptions of leadership in variation 7 with variation 6

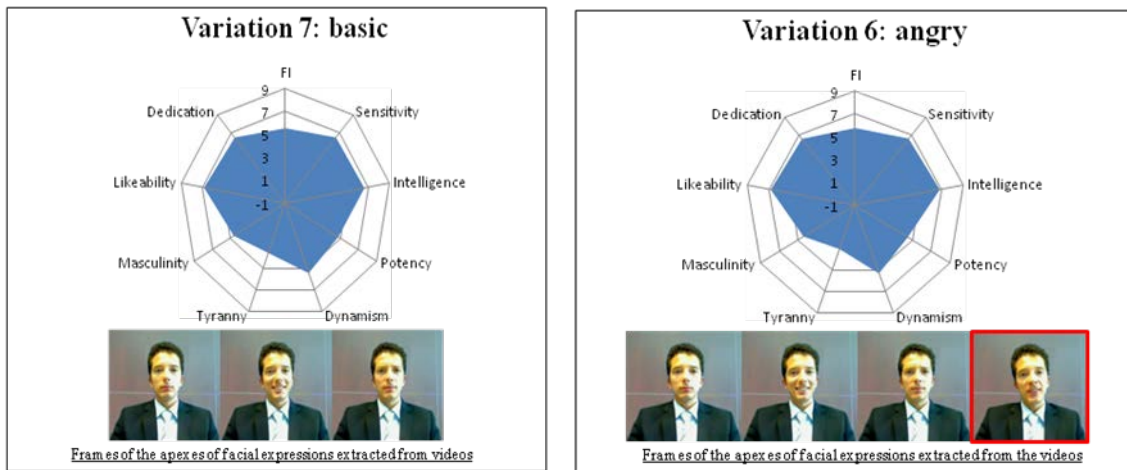


Table S3: Significant differences between participants' responses in variation 7 (basic) with variation 6 (angry)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances				Sig. (2-tailed)
				F	Sig.	t	df	
FI	Variation 7	5.51	1.74	0.318	0.574	0.628	102	0.531
	Variation 6	5.74	1.85					
Sensitivity	Variation 7	6.45	1.58	2.588	0.111	-0.48	102	0.633
	Variation 6	6.59	1.29					
Intelligence	Variation 7	6.60	1.44	0.054	0.817	0.912	102	0.364
	Variation 6	6.85	1.38					

Potency	Variation 7	4.79	1.53	1.645	0.203	0.749	102	0.456
	Variation 6	4.56	1.68					
Dynamism	Variation 7	5.44	1.95	0.12	0.73	0.252	102	0.802
	Variation 6	5.34	2.08					
Tyranny	Variation 7	3.59	1.28	0.66	0.418	1.955	102	0.053
	Variation 6	3.08	1.37					
Masculinity	Variation 7	4.63	2.02	0.03	0.863	0.441	102	0.66
	Variation 6	4.46	2.11					
Likeability	Variation 7	6.81	1.77	2.147	0.146	0.048	102	0.962
	Variation 6	6.83	1.40					
Dedication	Variation 7	6.45	1.47	0.328	0.568	0.378	102	0.706
	Variation 6	6.57	1.67					

---



Figure S4 (variations 7,9): participants' perceptions of leadership in variation 7 with variation 9

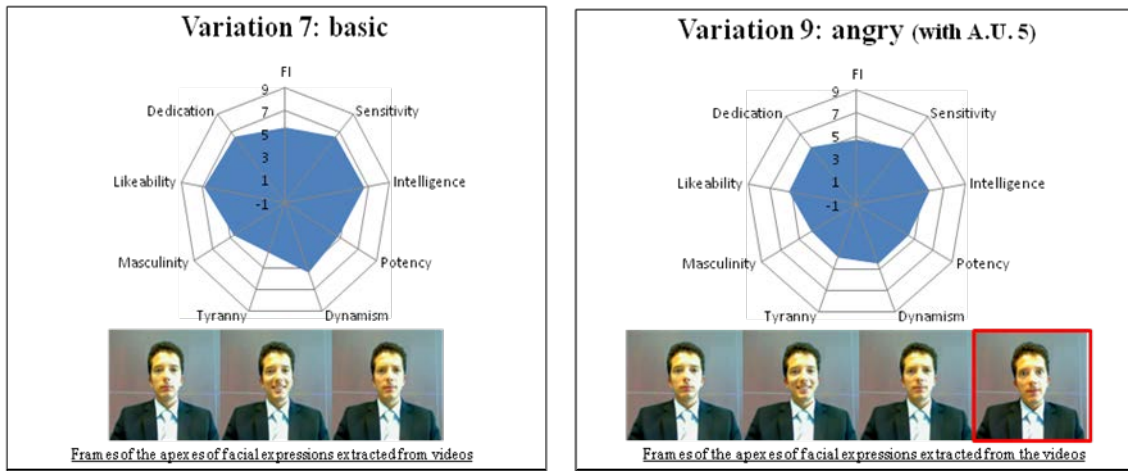


Table S4: Significant differences between participants' responses in variation 7 (basic) with variation 9 (angry with AU: 5)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances			df	Sig. (2-tailed)
				F	Sig.	t		
FI	Variation 7	5.52	1.75	0.36	0.552	2.492	111	0.014
	Variation 9	4.66	1.9					
Sensitivity	Variation 7	6.46	1.58	2.72	0.102	3.309	111	0.001
	Variation 9	5.37	1.87					
Intelligence	Variation 7	6.6	1.44	6.72	0.011	2.838	111	0.005
	Variation 9	5.67	1.98					
	Variation 7	4.8	1.53					

Potency	Variation 9	4.4	2.02	5.68	0.019	1.159	111	0.249
Dynamism	Variation 7	5.44	1.95					
	Variation 9	4.56	2.42	3.88	0.051	2.108	111	0.037
Tyranny	Variation 7	3.59	1.28					
	Variation 9	3.99	1.64	2.98	0.087	1.436	111	0.154
Masculinity	Variation 7	4.64	2.02					
	Variation 9	3.79	2.19	1.17	0.281	2.139	111	0.035
Likeability	Variation 7	6.81	1.78					
	Variation 9	5.29	2.18	3.67	0.058	4.059	111	0.000
Dedication	Variation 7	6.46	1.47					
	Variation 9	5.53	2.02	9.14	0.003	2.764	111	0.007

---

Figure S5 (variations 7,10): participants' perceptions of leadership in variation 7 with variation 10

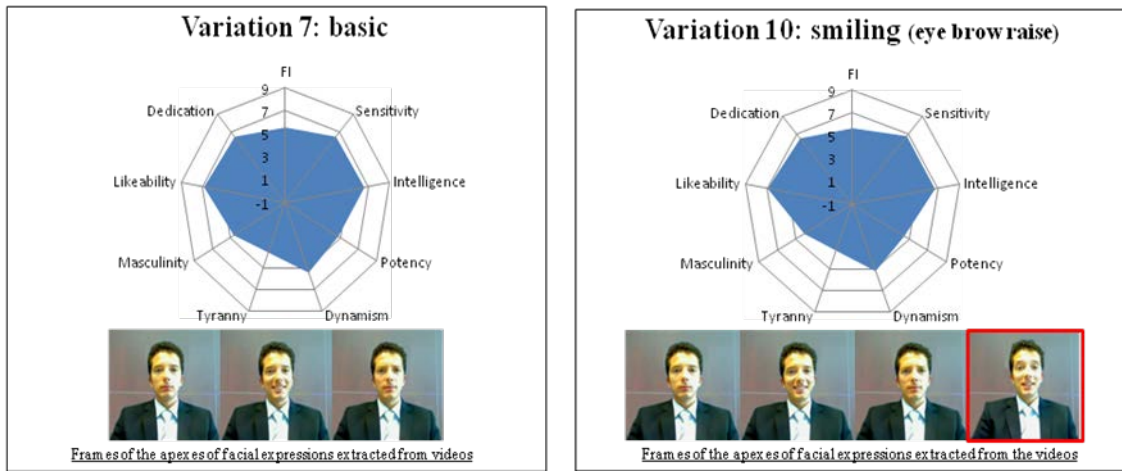


Table S5: Significant differences between participants' responses in variation 7 (basic) with variation 10 (smiling with eyebrow raise)

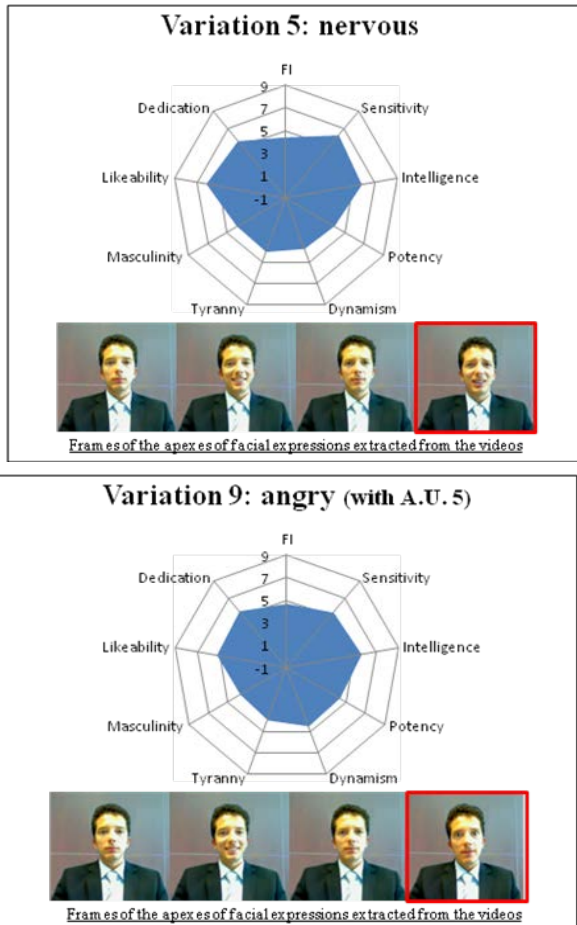
Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		t	df	Sig. (2-tailed)
				F	Sig.			
FI	Variation 7	5.52	1.75	0.618	0.434	0.324	104	0.747
	Variation 10	5.63	1.94					
Sensitivity	Variation 7	6.46	1.58	0.279	0.598	1.094	104	0.276
	Variation 10	6.78	1.42					
Intelligence	Variation 7	6.6	1.44	0.013	0.91	0.487	104	0.628
	Variation 10	6.74	1.39					
Potency	Variation 7	4.8	1.53	2.873	0.093	0.859	104	0.392
	Variation 10	4.52	1.78					

	10							
Dynamism	Variation 7	5.44	1.95					
	Variation 10	5.19	1.97	0.022	0.883	0.65	104	0.517
Tyranny	Variation 7	3.59	1.28					
	Variation 10	3.31	1.52	1.705	0.195	1.05	104	0.296
Masculinity	Variation 7	4.64	2.02					
	Variation 10	4.13	2.24	0.641	0.425	1.218	104	0.226
Likeability	Variation 7	6.81	1.78					
	Variation 10	6.96	1.76	0.178	0.674	0.426	104	0.671
Dedication	Variation 7	6.46	1.47					
	Variation 10	6.52	1.68	1.725	0.192	0.204	104	0.839

---

**APPENDIX T**  
**COMPARISONS OF VARIATION 9 (ANGRY WITH AU: 5) AND VARIATION 10 (SMILING WITH EYEBROW RAISE) WITH VARIATION 5 (NERVOUS)**

Figure T1 (variations 5,9): Participants' perceptions of leadership in variation 5 with variation 9



The two figures above show that variation 5 (nervous) differed perceptually from variation 9 (angry with AU: 5). Table T1 below, shows the results of t-tests between the participants evaluations in leadership dimensions and the first impression score (FI) for variation 5 (nervous) and variation 9 (angry with AU: 5).

Table T1: Significant differences between participants' responses in variation 5 (nervous)  
with variation 9 (angry with AU: 5)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		t	df	Sig. (2- tailed)
				F	Sig.			
FI	Variation 5	4.35	1.34	8.111	0.01	-	105	0.348
	Variation 9	4.66	1.9			0.943		
Sensitivity	Variation 5	6.22	1.46	5.092	0.03	2.557	105	0.012
	Variation 9	5.37	1.87					
Intelligence	Variation 5	5.76	1.53	3.695	0.06	0.246	105	0.806
	Variation 9	5.67	1.98					
Potency	Variation 5	3.94	1.61	2.834	0.1	-	105	0.198
	Variation 9	4.4	2.02			1.296		
Dynamism	Variation 5	3.79	1.75	7.998	0.01	-	105	0.065
	Variation 9	4.56	2.42			1.864		
Tyranny	Variation 5	4.07	1.44	0.769	0.38	0.265	105	0.792
	Variation 9	3.99	1.64					
Masculinity	Variation 5	3.98	1.94	3.211	0.08	0.473	105	0.637
	Variation 9	3.79	2.19					
Likeability	Variation 5	6.08	1.7	4.15	0.04	2.068	105	0.041
	Variation 9	5.29	2.18					

Dedication	Variation 5	5.56	1.8	1.356	0.25	0.065	105	0.948
	Variation 9	5.53	2.02					

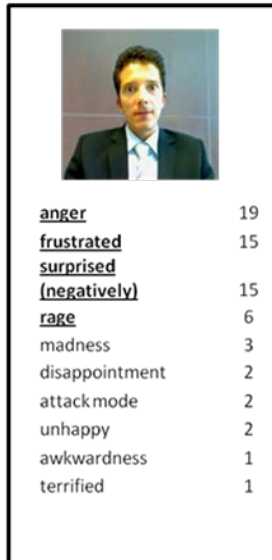
It can be seen from the data in Table T1 that significant differences occurred between the two variations in only two leader dimensions: sensitivity and likeability. Particularly, variation 5 (nervous) was perceived as significantly more sensitive, and likeable than variation 9 (angry with AU: 5). Figures T2 (a,b) represent participants' descriptions of underlying emotions for the static facial expression (manipulation photos) representing apexes of the video scenarios, which are then further discussed.

Figures T2 (a,b): Descriptions of underlying emotions for the static facial expression representing apexes of the video scenarios.

(a) **“nervous” frame**



(b) **“angry with AU: 5” frame**

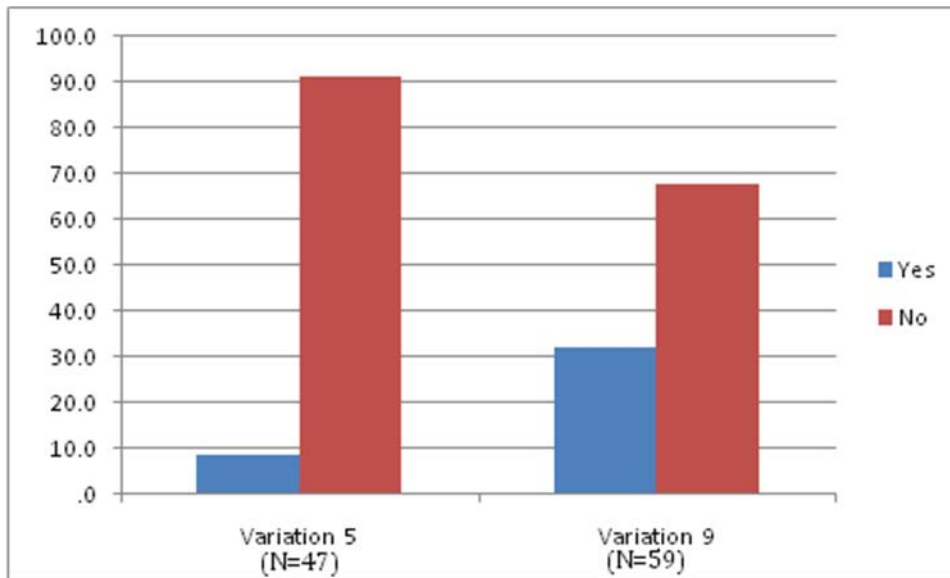


Comparing the figures, it appears that the two frames were perceived much differently. Specifically, “angry with AU: 5” frame’s comments convert to trait descriptions which reveal anger and frustration. The comments on “nervous” gave also a negative impression, with descriptions such as disappointment, wondering, sadness, stress, disagreement and frustration.

Proceeding with the comparisons between the two variations, Figure T3 represents participants’ “yes” and “no” responses, in percentages, regarding their acceptance of the actor as a potential leader.

Figure T3: Acceptance of the actor as a potential leader: “yes” and “no” percentages





The “yes” and “no” percentages for variation 5 (nervous) and variation 9 (angry with AU: 5) illustrated in Figure T3 show noticeable differences, as expected. To be more precise, chi squares analysis revealed significant differences between variations 5 and 9 ( $\chi^2_{(1,106)} = 7.305, p < .01$ ). Participants’ responses revealed a negative leader-likeness consensus for both variations but this was stronger for variation 5 (nervous) than for variation 9 (angry with AU: 5), showing that the nervous facial expression elicited a stronger negative response than the angry expression.

This finding was further explored by qualitative analysis. Table T2 below, shows the most used trait descriptions (sorted by frequency) from participants’ qualitative responses grouped in “yes, he could be a leader” and “no, he could not be a leader”.

Table T2: Most used trait descriptions (sorted by frequency) from participants’ qualitative responses grouped in “yes, he could be a leader” and “no, he could not be a leader”

Variation	Yes, he could be a leader	No, he could not be a leader
	0	Uncertain: 23
		Stressed: 23
		Not determined: 17
Variation 5		Not confident: 15
		Not dynamic: 11
		Inexperienced: 7
		Understanding: 5
		Too young: 5
	Intelligent: 6	Uncertain: 10
	Honest: 5	Stressed: 9
		Not confident: 8
Variation 9		Too expressive: 7
		Scared: 6
		Not serious: 6
		Not trustworthy: 5

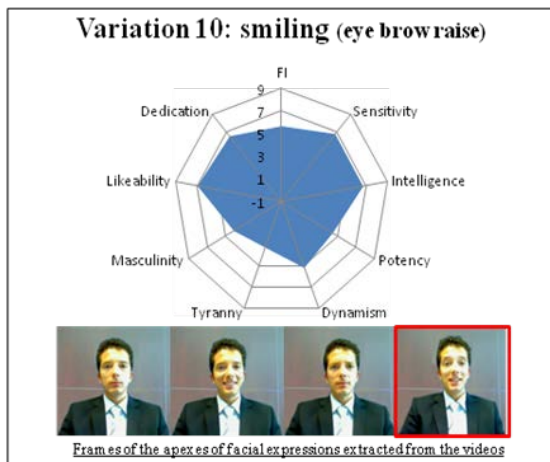
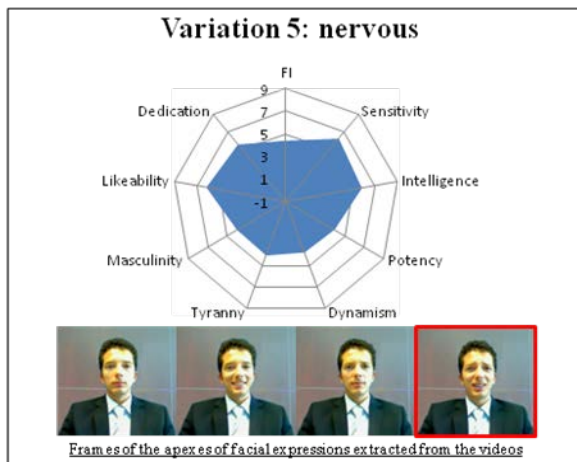
*Note.* Only item frequencies  $\geq 5$  are included in the tables.

It can be seen from the data in Table T2 that the two variations received very different qualitative comments. Variation 5 (nervous) included only negative responses. These tended to describe a person who is uncertain, stressed, not determined, not confident, inexperienced, understanding, and too young. The “yes”-participants in

variation 9 (angry with AU: 5) described the actor as intelligent and honest while “no”-participants described the actor as uncertain, stressed, not confident, too expressive, scared, not serious, and not trustworthy.

Variation 5 (nervous) was then compared with variation 10 (smiling with eyebrow raise). Figures T4 (variations 5, 10) represent the participants’ quantitative evaluations of the two variations in the leader dimensions.

Figures T4 (variations 5, 10): Quantitative evaluations in leadership dimensions for each variation.



The two charts show that variation 5 (nervous) and 10 (smiling with eyebrow raise) had differences in perceived leadership dimensions and first impression score (FI). Statistical tests were employed to facilitate the comparisons of the two variations. Table T3 below, shows the results of t-tests between the participants evaluations in leadership dimensions and the first impression score (FI) for variation 5 (nervous) and 10 (smiling with eyebrow raise).

Table T3: Significant differences between participants' perceptions (variations 5, 10)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		t	df	Sig. (2- tailed)
				F	Sig.			
FI	Variation 5	4.35	1.34	8.882	0	-	98	0.000
	Variation 10	5.63	1.94					
Sensitivity	Variation 5	6.22	1.45	0.026	0.87	-	98	0.054
	Variation 10	6.78	1.41					
Intelligence	Variation 5	5.76	1.53	0.612	0.44	-	98	0.001
	Variation 10	6.74	1.38					
Potency	Variation 5	3.94	1.60	0.948	0.33	-1.71	98	0.09
	Variation 10	4.52	1.78					
	Variation 5	3.79	1.75					

Dynamism				0.588	0.45	-	98	0.000
	Variation 10	5.19	1.97			3.759		
Tyranny	Variation 5	4.07	1.43	0.215	0.64	2.582	98	0.011
	Variation 10	3.31	1.52					
Masculinity	Variation 5	3.98	1.93	2.096	0.15	-0.37	98	0.712
	Variation 10	4.13	2.23					
Likeability	Variation 5	6.08	1.69	0.097	0.76	-	98	0.013
	Variation 10	6.96	1.76			2.533		
Dedication	Variation 5	5.56	1.80	0.219	0.64	-	98	0.007
	Variation 10	6.52	1.67			2.771		

---

The statistical comparisons show that the participants generally perceived variation 10 (smiling with eyebrow raise) more favourably than variation 5 (nervous). Comparing the former with the latter, apart from perceived sensitivity and masculinity, all dimensions, revealed statistically significant differences. This means that the leader/actor in the “smiling with eyebrow raise” photo-sequence extracted a higher first impression score (FI) and was perceived as more intelligent, potent, dynamic, likeable, dedicated, and less tyrannical than the leader/actor in the “nervous” photo sequence.

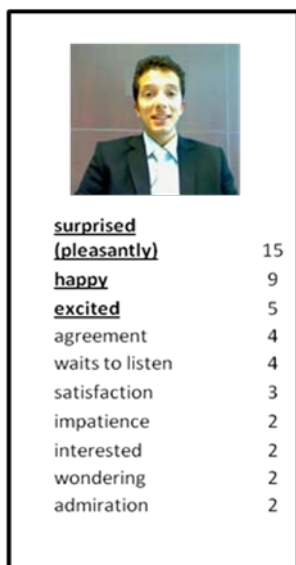
The data from the perceived underlying emotions aided interpretation of the results. Figures T5 (a, b) represent participants’ descriptions of underlying emotions for the static facial expression (manipulation photos) representing apexes of the video scenarios.

Figures T5 (a,b): Descriptions of underlying emotions for the static facial expression (manipulation photos) representing apexes of the video scenarios.

(a) **“nervous” frame**



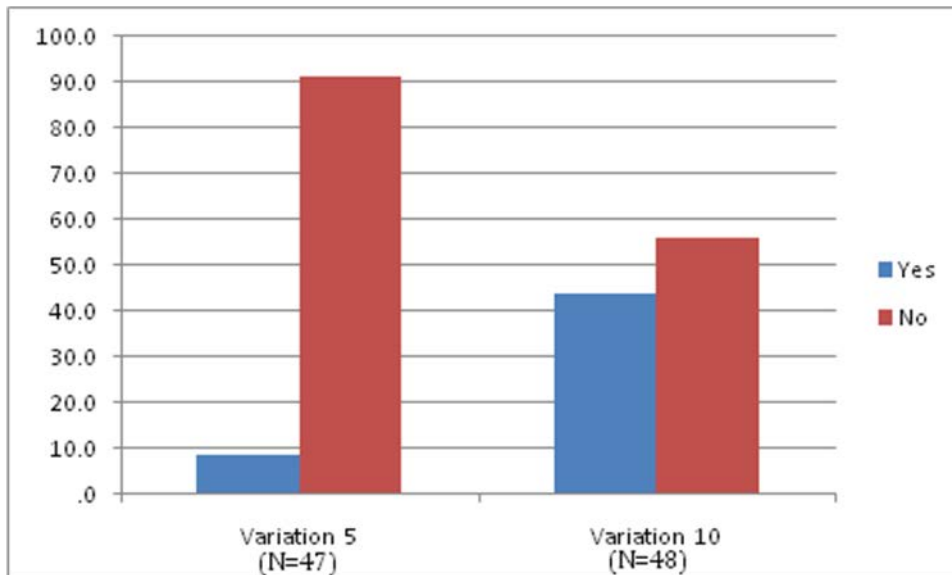
(b) **“happy with eyebrow raise” frame**



As can be seen in Figures T5, both the “nervous” and “happy with eyebrow raise” frames caused a relative consensus of participants’ descriptions when presented in still photos (static facial expression). The general impression for “nervous” frame was negative, with descriptions such as disappointment, wondering, sadness, stress, disagreement and frustration. In contrast, the “happy with eyebrow raise” frame gave a positive impression including descriptions such as pleasantly surprised, happy, and excited.

The participants’ “yes” and “no” responses to whether or not they would imagine the depicted person/actor could be a leader are presented next. Figure T6 represents the participants’ “yes” and “no” responses, in percentages, regarding their acceptance of the actor as a potential leader.

Figure T6: Acceptance of the actor as a potential leader: “yes” and “no” percentages



Chi squares analysis revealed significant differences between variations 5 and 10 ( $\chi^2_{(1,95)} = 13.445, p < .001$ ). It is apparent from Figure T6 that for variation 5 (nervous) participants' responses revealed a negative consensus. On the contrary, for variation 10 (smiling with eyebrow raise) "yes" and "no"-participants were very close. That shows that the facial expressions sequence caused a stronger negative leader-likeness consensus for variation 5 (nervous) than for 10 (smiling with eyebrow raise)

Furthermore, the qualitative analysis for variation 5 (nervous) and variation 10 (smiling with eyebrow raise) presented in Table T4 below, shows the most used trait descriptions (sorted by frequency) from participants' qualitative responses grouped in "yes, he could be a leader" and "no, he could not be a leader".

Table T4: Most used trait descriptions (sorted by frequency) from participants' qualitative responses grouped in "yes, he could be a leader" and "no, he could not be a leader"

<b>Variation</b>	<b>Yes, he could be a leader</b>	<b>No, he could not be a leader</b>
Variation 5	0	Uncertain: 23 Stressed: 23 Not determined: 17 Not confident: 15 Not dynamic: 11 Inexperienced: 7



---

		Understanding: 5
		Too young: 5
	Smiling: 14	Not dynamic: 14
	Good listener: 8	Not confident: 10
	Understanding: 6	Uncertain: 11
Variation 10	Pleasant: 6	Stressed: 8
	Honest: 6	Smiling: 7
	Confident: 6	Not determined: 5
	Likeable: 5	

---

*Note.* Only item frequencies  $\geq 5$  are included in the tables.

As mentioned in earlier sections, variation 5 (nervous) included only negative participants' responses such as uncertain, stressed, not determined, not confident, inexperienced, understanding, and too young. Regarding variation 10 (smiling with eyebrow raise), "yes"-participants used trait characteristics from leader dimensions of "sensitivity" (understanding, honest), "likeability" (smiling, likeable), and "dynamism" (confident) to describe the actor. The "no"-participants gave trait descriptions such as not dynamic, not confident, uncertain, stressed, smiling, and not determined.

**APPENDIX U**  
**T-TESTS REGARDING GENDER DIFFERENCES FOR ALL VARIATIONS IN**  
**STUDIES 3, 4 AND 5**

*Study 3*

Table U1: Variation 1 (the standard)

<b>Characteristic</b>	<b>Group</b>	<b>Mean</b>	<b>SD</b>	<b>Levene's Test for Equality of Variances</b>		<b>t</b>	<b>df</b>	<b>Sig. (2- tailed)</b>
				<b>F</b>	<b>Sig.</b>			
FI	Males	6.16	1.58	0.382	0.54	0.748	42	0.458
	Females	5.75	1.66					
Sensitivity	Males	6.15	1.70	0.026	0.87	- 0.213	42	0.833
	Females	6.27	1.69					
Intelligence	Males	6.04	2.08	2.434	0.13	- 0.143	42	0.887
	Females	6.12	1.56					
Potency	Males	4.72	1.65	0.008	0.93	0.182	42	0.857
	Females	4.62	1.70					
Dynamism	Males	5.95	2.04	0.351	0.56	1.259	42	0.215
	Females	5.04	2.17					
Tyranny	Males	4.39	1.64	0.121	0.73	0.965	42	0.34
	Females	3.85	1.68					
Masculinity	Males	4.16	1.93	0.227	0.64	- 1.443	42	0.156
	Females	5.12	1.97					
Likeability	Males	5.41	2.21	0.347	0.56	- 0.781	42	0.439

	Females	5.95	1.96					
	Males	6.61	1.60					
Dedication				0.129	0.72	0.951	42	0.347
	Females	6.11	1.52					

**Table U2: Variation 2 (reversing the order of 1)**

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		t	df	Sig. (2-tailed)
				F	Sig.			
FI	Males	5.27	1.48					
	Females	5.2	1.60	0.28	0.6	0.154	36	0.878
Sensitivity	Males	6.47	0.96					
	Females	6.14	1.30	2.856	0.1	0.884	36	0.382
Intelligence	Males	5.59	1.38					
	Females	6.05	1.34	0.555	0.461	1.022	36	0.314
Potency	Males	4.91	1.51					
	Females	4.76	1.31	1.1	0.301	0.336	36	0.739
Dynamism	Males	5.33	1.91					
	Females	5.4	2.01	0.008	0.929	0.104	36	0.918
Tyranny	Males	4.15	1.27					
	Females	3.86	1.53	0.179	0.675	0.623	36	0.537

Masculinity	Males	5.05	1.81	1.368	0.25	0.33	36	0.744	
	Females	4.87	1.56						
Likeability	Males	5.88	1.76	0.002	0.961	-	0.895	36	0.377
	Females	6.37	1.58						
Dedication	Males	6.16	1.15	1.222	0.276	-	0.188	36	0.852
	Females	6.25	1.52						

Table U3: Variation 3 (changing the order of 1)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances			df	Sig. (2-tailed)	
				F	Sig.	t			
FI	Males	6.54	1.05	9.37	0.01	2.282	31	0.029	
	Females	5.1	2.1						
Sensitivity	Males	6.46	1.2	1.81	0.19	-	0.415	31	0.681
	Females	6.7	1.83						
Intelligence	Males	6.37	1.1	6.87	0.01	0.487	31	0.63	
	Females	6.08	1.95						
Potency	Males	5.58	1.45	1.16	0.29	1.271	31	0.213	
	Females	4.83	1.78						
Dynamism	Males	6.46	1.99	2.01	0.17	1.938	31	0.062	

	Females	4.89	2.44					
	Males	4.28	1.04					
Tyranny				2.7	0.11	1.176	31	0.248
	Females	3.72	1.51					
	Males	5.92	1.86					
Masculinity				0.12	0.73	1.565	31	0.128
	Females	4.98	1.59					
	Males	6.42	1.66					
Likeability				0.63	0.43	0.76	31	0.453
	Females	5.9	2.09					
	Males	6.62	1.51					
Dedication				0.58	0.45	0.99	31	0.33
	Females	6	1.88					

Table U4: Variation 4 (replacing the “weak” photo)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances				Sig. (2-tailed)
				F	Sig.	t	df	
FI	Males	6.05	1.60					
	Females	5.08	1.74	0.37	0.546	1.899	42	0.065
Sensitivity	Males	5.62	1.91					
	Females	4.83	1.85	0.621	0.435	1.386	42	0.173
Intelligence	Males	6.33	1.72					
	Females	5.95	1.44	0.053	0.819	0.795	42	0.431
Potency	Males	5.61	1.45					
				0.161	0.69	2.194	42	0.034

Dynamism	Females	4.72	1.22	0.409	0.526	1.246	42	0.22
	Males	6.2	1.96					
Tyranny	Females	5.49	1.81	0.051	0.823	0.328	42	0.745
	Males	5.16	1.60					
Masculinity	Females	5.31	1.48	1.212	0.277	2.75	42	0.009
	Males	5.9	1.58					
Likeability	Females	4.66	1.38	0.817	0.371	1.534	42	0.133
	Males	5.62	1.98					
Dedication	Females	4.60	2.35	0.015	0.905	1.216	42	0.231
	Males	6.18	1.71					
	Females	5.54	1.76					

*Study 4*

Table U5: Variation 1 (dynamic-smiling)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances				Sig. (2-tailed)
				F	Sig.	t	df	
FI	Males	5.88	1.99	0.453	0.5	1.141	61	0.258
	Females	5.31	1.96					
	Males	6.04	1.44					

Sensitivity	Females	5.91	1.71	1.624	0.21	0.316	61	0.753
	Males	6.76	1.74	0.182	0.67	0.174	61	0.863
Intelligence	Females	6.68	1.66	0.786	0.38	1.401	61	0.166
	Males	4.44	1.61	1.083	0.3	1.562	61	0.124
Potency	Females	3.83	1.85	0.251	0.62	-	61	0.949
	Males	5.74	2.16	3.146	0.08	2.149	61	0.036
Dynamism	Females	4.83	2.44	2.365	0.13	1.39	61	0.17
	Males	3.23	1.43	2.421	0.13	1.844	61	0.07
Tyranny	Females	3.26	1.28					
	Males	5.13	1.78					
Masculinity	Females	4.03	2.26					
	Males	6.77	1.72					
Likeability	Females	6.05	2.41					
	Males	6.62	1.65					
Dedication	Females	5.72	2.22					

Table U6: Variation 2 (dynamic-nervous)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		t	df	Sig. (2-tailed)
				F	Sig.			
FI	Males	3.74	1.54	1.005	0.321	-	55	0.627
	Females	3.95	1.67					
Sensitivity	Males	4.64	1.59	0.787	0.379	0.109	55	0.914
	Females	4.59	1.95					
Intelligence	Males	5.35	1.43	1.247	0.269	0.122	55	0.903
	Females	5.30	1.63					
Potency	Males	3.87	1.26	1.575	0.215	0.772	55	0.443
	Females	3.59	1.51					
Dynamism	Males	3.59	1.8	2.634	0.11	-0.1	55	0.921
	Females	3.64	2.31					
Tyranny	Males	4.21	1.49	0.362	0.55	2.547	55	0.014
	Females	3.24	1.25					
Masculinity	Males	3.6	1.75	1.91	0.173	1.555	55	0.126
	Females	2.90	1.4					
Likeability	Males	4.31	2.0	0.313	0.578	0.23	55	0.819
	Females	4.1818	2.23					
Dedication	Males	5.13	1.93	0.082	0.775	-	55	0.98
	Females	5.15	1.94					



Table U7: Variation 3 (dynamic-angry)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		t	df	Sig. (2-tailed)
				F	Sig.			
FI	Males	3.61	1.59	2.95	0.091	-	64	0.47
	Females	3.93	1.96			0.728		
Sensitivity	Males	3.63	1.89	0.858	0.358	0.223	64	0.824
	Females	3.53	1.69					
Intelligence	Males	5.41	1.76	0.45	0.505	1.452	64	0.151
	Females	4.75	1.94					
Potency	Males	3.74	1.60	0.059	0.808	-	64	0.721
	Females	3.88	1.56			0.358		
Dynamism	Males	4.45	2.21	0.056	0.814	0.958	64	0.342
	Females	3.93	2.17					
Tyranny	Males	4.29	1.94	1.672	0.201	-	64	0.395
	Females	4.68	1.71			0.856		
Masculinity	Males	3.30	2.11	2.812	0.098	2.057	64	0.044
	Females	2.34	1.64					
	Males	3.39	1.96					

Likeability	Males	3.07	1.53	3.66	0.06	0.733	64	0.466
	Females	4.62	1.92					
Dedication	Males	4.41	2.11	0.985	0.325	0.424	64	0.673
	Females							

*Study 5*

Table U8: Variation 4 (static-smiling)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances			df	Sig. (2-tailed)
				F	Sig.	t		
FI	Males	5	1.68	3.41	0.07	-	56	0.184
	Females	5.74	1.78					
Sensitivity	Males	6.3	1.78	0.05	0.83	-	56	0.673
	Females	6.51	1.59					
Intelligence	Males	6.38	1.57	0.43	0.52	-	56	0.927
	Females	6.43	1.7					
Potency	Males	3.98	1.62	0.4	0.53	-	56	0.28
	Females	4.61	1.87					
Dynamism	Males	4.92	2.09	0.36	0.55	-	56	0.46
	Females	5.44	2.26					

Tyranny	Males	3.59	1.14	0.56	0.46	1.464	56	0.149	
	Females	2.94	1.47						
Masculinity	Males	4.65	1.59	3.13	0.08	-	0.296	56	0.768
	Females	4.86	2.3						
Likeability	Males	7.35	1.78	0.28	0.6	0.394	56	0.695	
	Females	7.16	1.46						
Dedication	Males	6.05	1.77	0.03	0.87	-	0.595	56	0.555
	Females	6.38	1.74						

**Table U9: Variation 5 (static-nervous)**

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances			df	Sig. (2-tailed)	
				F	Sig.	t			
FI	Males	4.25	1.61	3.613	0.064	-	0.376	46	0.709
	Females	4.41	1.21						
Sensitivity	Males	6.69	1.67	1.54	0.221	1.607	46	0.115	
	Females	5.98	1.3						
Intelligence	Males	6.03	1.76	0.709	0.404	0.88	46	0.383	
	Females	5.62	1.42						
Potency	Males	4.03	1.98	4.69	0.036	0.283	46	0.778	
	Females	3.89	1.42						

Dynamism	Males	3.86	2.09	1.568	0.217	0.202	46	0.841
	Females	3.75	1.59					
Tyranny	Males	4.09	1.72	3.214	0.08	0.055	46	0.957
	Females	4.07	1.3					
Masculinity	Males	4.53	1.64	1.638	0.207	1.412	46	0.165
	Females	3.7	2.04					
Likeability	Males	6.47	1.55	0.663	0.42	1.114	46	0.271
	Females	5.89	1.76					
Dedication	Males	5.77	1.72	0.058	0.811	0.581	46	0.564
	Females	5.45	1.86					

Table U10: Variation 6 (static-angry)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances			df	Sig. (2-tailed)
				F	Sig.	t		
FI	Males	6.2	1.61	0.698	0.41	0.998	47	0.323
	Females	5.65	1.86					
Sensitivity	Males	6.54	1.3	1.44	0.24	-	47	0.6
	Females	6.74	1.12					
Intelligence	Males	7.15	1.35	0.048	0.83	0.856	47	0.396
	Females	6.79	1.38					
Potency	Males	5.17	1.77	0.474	0.49	1.601	47	0.116

	Females	4.35	1.6					
	Males	6.08	2.01					
Dynamism				0.107	0.75	1.547	47	0.129
	Females	5.12	2.01					
	Males	3.34	1.67					
Tyranny				2.764	0.1	0.752	47	0.456
	Females	3.02	1.23					
	Males	5.3	1.96					
Masculinity				0.717	0.4	1.796	47	0.079
	Females	4.15	2.12					
	Males	7.1	1					
Likeability				2.562	0.12	0.721	47	0.475
	Females	6.79	1.5					
	Males	6.98	1.24					
Dedication				0.878	0.35	0.931	47	0.357
	Females	6.53	1.67					

Table U11: Variation 7 (basic)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances			df	Sig. (2-tailed)
				F	Sig.	t		
FI	Males	5.46	1.89			-		
	Females	5.54	1.71	0.65	0.42	0.134	52	0.894
Sensitivity	Males	6.64	1.54					
	Females	6.4	1.61	0	0.97	0.466	52	0.643
Intelligence	Males	6.9	1.28					
	Females	6.51	1.49	0.47	0.5	0.865	52	0.391
	Males	4.71	1.42					

Potency				0.11	0.74	-	52	0.822
	Females	4.82	1.58					
	Males	5.5	1.65					
Dynamism				0.68	0.41	0.126	52	0.9
	Females	5.42	2.05					
	Males	3.28	1.52					
Tyranny				0.87	0.35	-	52	0.318
	Females	3.69	1.20					
	Males	5.5	1.87					
Masculinity				1.38	0.25	1.797	52	0.078
	Females	4.37	2.01					
	Males	6.58	2.08					
Likeability				3.12	0.08	-0.55	52	0.585
	Females	6.89	1.69					
	Males	6.56	1.70					
Dedication				0.24	0.63	0.299	52	0.766
	Females	6.42	1.41					

Table U12: Variation 8 (physiognomy)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances			df	Sig. (2-tailed)
				F	Sig.	t		
FI	Males	4.85	1.53			-		
	Females	5.77	1.06	4.84	0.03	2.555	49	0.014
Sensitivity	Males	6.11	1.28					
	Females	5.89	1.5	0.78	0.38	0.523	49	0.603
Intelligence	Males	6.7	1.12			-		
	Females	7.02	1.43	0.97	0.33	0.838	49	0.406

Potency	Males	4.26	1.26	0.15	0.7	-	1.479	49	0.146
	Females	4.85	1.48						
Dynamism	Males	4.28	1.81	0.38	0.54	-	1.381	49	0.174
	Females	5.07	2.13						
Tyranny	Males	3.86	1.1	0.18	0.67	-	0.309	49	0.759
	Females	3.76	1.1						
Masculinity	Males	3.55	1.91	0.28	0.6	-	0.441	49	0.661
	Females	3.32	1.72						
Likeability	Males	3.6	1.54	1.61	0.21	-	1.823	49	0.074
	Females	4.56	2.02						
Dedication	Males	6.25	1.28	0.02	0.9	-	1.977	49	0.054
	Females	7	1.35						

Table U13: Variation 9 (angry with AU: 5)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances				Sig. (2-tailed)
				F	Sig.	t	df	
FI	Males	5.35	1.9	0.12	0.73	2.05	57	0.045
	Females	4.31	1.82					
Sensitivity	Males	6.29	1.52	0.96	0.33	2.866	57	0.006
	Females	4.9	1.88					
	Males	6.31	1.62					

Intelligence	Females	5.34	2.08	3.8	0.06	1.82	57	0.074
	Males	5.26	1.65					
Potency	Females	3.96	2.07	1.27	0.27	2.441	57	0.018
	Males	5.56	2.43					
Dynamism	Females	4.05	2.27	0.16	0.69	2.362	57	0.022
	Males	4.11	1.6					
Tyranny	Females	3.93	1.67	0.11	0.75	0.39	57	0.698
	Males	4.53	1.91					
Masculinity	Females	3.41	2.25	3.57	0.06	1.892	57	0.064
	Males	5.63	1.95					
Likeability	Females	5.12	2.29	0.89	0.35	0.849	57	0.4
	Males	5.9	1.77					
Dedication	Females	5.34	2.13	2.28	0.14	1.006	57	0.319

Table U14: Variation 10 (smiling with eyebrow raise)

Characteristic	Group	Mean	SD	Levene's Test for Equality of Variances		t	df	Sig. (2-tailed)
				F	Sig.			
FI	Males	5.54	1.51			-		
	Females	5.67	2.08	2.12	0.15	0.204	50	0.839
Sensitivity	Males	6.2	1.37			-		
	Females	6.97	1.39	0.55	0.46	1.738	50	0.088



Intelligence	Males	6.85	1.09	1.38	0.25	0.329	50	0.743	
	Females	6.7	1.48						
Potency	Males	4.87	1.58	1.39	0.24	0.807	50	0.424	
	Females	4.4	1.85						
Dynamism	Males	5.27	2.07	0.02	0.9	0.161	50	0.873	
	Females	5.17	1.96						
Tyranny	Males	4.14	1.45	0	0.99	2.364	50	0.022	
	Females	3.03	1.46						
Masculinity	Males	4.69	2.15	0.14	0.71	1.039	50	0.304	
	Females	3.95	2.26						
Likeability	Males	6.04	2.22	4.43	0.04	-	2.267	50	0.028
	Females	7.27	1.49						
Dedication	Males	6.56	1.55	0.27	0.6	0.11	50	0.913	
	Females	6.5	1.74						

---