DETERMINING SUITABILITY OF PRO-AND ANTI-CULTURAL LITERARY TEXTS FOR A SPECIFIC INTERPRETIVE COMMUNITY USING HRV BIOFEEDBACK AT TAIBAH UNIVERSITY

IFTIKHAR YOUSAF

DOCTOR OF PHILOSOPHY
UNIVERSITI MALAYSIA PAHANG
SUPERVISOR’S DECLARATION

We hereby declare that we have checked this thesis/project* and in our opinion, this thesis is adequate in terms of scope and quality for the award of the degree of Doctor of Philosophy.

________________________________________
(Supervisor’s Signature)

Full Name: Dr. MUHAMMAD NUBLI BIN ABDUL WAHAB
Position: ASSOCIATE PROFESSOR
Date: 

________________________________________
(Co-Supervisor’s Signature)

Full Name: Dr NORASHIKIN ABDUL AZIZ
Position: SENIOR LECTURER
Date: 

*thesis/project
STUDENT’S DECLARATION

I hereby declare that the work in this thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at Universiti Malaysia Pahang or any other institutions.

_______________________________
(Student’s Signature)

Full Name : IFTIKHAR YOUSAF
ID Number : PBS 14003
Date :
DETERMINING SUITABILITY OF PRO-AND ANTI-CULTURAL LITERARY TEXTS FOR A SPECIFIC INTERPRETIVE COMMUNITY USING HRV BIOFEEDBACK AT TAIBAH UNIVERSITY

IFTIKHAR YOUSAF

Thesis submitted in fulfillment of the requirements for the award of the degree of Doctor of Philosophy

Centre for Modern Languages and Human Sciences

UNIVERSITI MALAYSIA PAHANG

March 2019
DEDICATION

“And We have not sent you, [O Muhammad], except as a mercy to the worlds.”

(Quran: 21:107)

DEDICATED TO RAHMAT-UL LIL-ALAMEEN (SAL-LAL-LAHO ALEHI WA ALIHI WASALLAM)
ACKNOWLEDGEMENTS

All praise is due to Allah, Lord of the worlds and peace and blessings be upon His Prophet Muhammad (S.W.). First of all, I would like to express my earnest gratitude to Prof. Ghulam Sarwar Qureshi, former Head of Post-Graduate Studies, Govt. Islamia College Civil Lines, Lahore, my mentor, who shook my academic slumber and gave me an idea to embark upon my Ph.D. journey. My special thanks are due to Dr. Muhammad Nubli Abdul Wahab, Dean CMLHS, UMP, who as my supervisor continuously supported me with his promising ideas in the completion of my doctoral dissertation and extended his incessant encouragement and insightful comments together with marvellous patience that was indeed unprecedented. The Final Defence panel, Dr. Najah Binti Osman, Prof. Dr. Ezhar Tamam, and Associate Professor Dr. Kassim Thuiman are worthy of my sincere thankfulness for their tough questions, valuable suggestions, and keen observations.

I would like to express my special gratitude to the administration of my parent institution, Taibah University, Madinah Munawwarah, Saudi Arabia, for extending every possible help to materialize this project. The ex-Chairmen of the Department of Languages and Translation, Dr. Hashim Noor, and Dr. Alaa Alghamadi, the present Chairmen Dr. Adil Alsubhi (Madinah Munawwarah Campus) and Dr. Abdullah Aljabari (Yanbu Campus), the Dean of College of Arts and Humanities, Yanbu Campus, Dr. Hassan Alzubayani, all supported me to continue this long journey. I feel special indebtedness to the ex-Presidents of Taibah University, His Excellency Dr. Adnan Almazrou and His Excellency Dr. Mehroos Ghabban for allowing me to continue my PhD studies and granting me leave to go to Malaysia whenever it was required. Without their help and support, the project would have been a dream.

This project would have remained an illusion had Prof. Muhammad Iqbal and Dr. Shahzad Farooqi from College of Education, Majmaah University, Saudi Arabia, not been there to help and cooperate with me on every step. Dr. Shahid Anwar, Universiti Malaysia Pahang, deserves my special thanks for his final check of formatting. Mr. Abdullah Saeed Almourai, my student at Department of Languages and Translation, Taibah University, deserves my sincere thanks for creating Google Docs for the online registration of the students to participate in data collection. And, I find no words to express my thanks to all the students at Taibah University who voluntarily participated in the data collection.

Finally, I would acknowledge my profound indebtedness to my family, especially my late father, Prof. Mohammad Yousaf who was my teacher, colleague, friend and a source of inspiration; my mother whose affectionate prayers and backing kept me going through all ordeals; and to my wife who tenaciously rendered all the internal and external responsibilities in my periodical absence for the consummation of this huge task. My beloved sons and daughters deserve a real recognition for their sacrifice, patience, and understanding which were inevitable to make this work possible.
ABSTRAK

This study deals with the measurement of comparative impact of the two selected texts “Doctor Faustus” and “Waiting for Godot” on the readers’ emotions by means of Biofeedback. This research aims at checking the viability of biofeedback as a tool to measure emotions of readers generated by the reading of a piece of literature. Embedded within the theoretical background of interpretive communities, the research scientifically evaluates the suitability of texts within cultural perspective. It will help in adopting a particular text for a particular community for teaching and learning purpose in EFL setting. The thesis describes in detail the antithetical themes of the two texts, the link between emotions and literature, the traditional and modern techniques used to measure emotions, and the functions of biofeedback technology to be used in measuring the physiological changes that occur in the reader while reading pro-cultural and anti-cultural texts. A comprehensive literature review of all the elements has been presented which are integral to this research. Since this study is an amalgam of technology and literature, a mixed mode has been used as a method to ensure the validity and reliability of the research process. The antithetical themes have been examined qualitatively while emotions have been measured scientifically in quantitative terms. From the results, it is observed that antithetical themes do exist in both the plays which bring out their pro-cultural and anti-cultural nature within Saudi perspective. Moreover, the opposing texts have an impact on the HRV Power Spectrum Score of the readers, and there is a correlation between the effects of the opposing themes of “Doctor Faustus” and “Waiting for Godot” towards emotional performance, very low frequency (VLF) and high frequency (HF) of coherence score of the readers which vary from text to text. From the findings, a conclusion is derived that HRV Biofeedback may be used as a viable tool to determine the suitability of a text to be prescribed for a specific interpretive community. Based on this conclusion, it is recommended for a smooth process of learning English as a foreign language or a second language to make use of biofeedback technology while prescribing text books devoid of cultural irritants that demotivate the students in Arab culture.
# TABLE OF CONTENT

| DECLARATION | i |
| TITLE PAGE | |
| DEDICATION | ii |
| ACKNOWLEDGEMENTS | iii |
| ABSTRAK | iv |
| ABSTRACT | |
| TABLE OF CONTENT | v |
| LIST OF TABLES | xii |
| LIST OF FIGURES | xv |
| LIST OF ABBREVIATIONS | xvii |

## CHAPTER 1 INTRODUCTION | 1

1.1 Introduction | 1
1.2 Background of the Study | 1
1.3 Statement of the Problem | 6
1.4 Objectives of the Research | 9
1.5 Research Hypotheses | 9
1.6 Significance of the Research | 10
1.7 Scope of the Research | 11
1.8 Definition of Terms | 13
  1.8.1 Comparative Impact | 13
  1.8.2 “Doctor Faustus” | 13
  1.8.3 “Waiting for Godot” | 14
1.8.4 Reader’s Emotions 14
1.8.5 Heart Rate Variability Power Spectrum 14
1.8.6 Very Low Frequency 14
1.8.7 Low Frequency 14
1.8.8 High Frequency 15
1.8.9 Accumulated Coherence Score 15
1.8.10 Emotional Performance 15
1.9 Overview of the Thesis 15
1.10 Summary 16

CHAPTER 2 LITERATURE REVIEW 17

2.1 Introduction 17
2.2 Conceptual Framework 18
2.3 Texts and Meaning, Context and Interpretation 18
  2.3.1 Reader-Response Theory 20
  2.3.2 Interpretive Communities 22
  2.3.3 Interpreting the Variorum 25
  2.3.4 Fish and the Postmodern Society 27
  2.3.5 Saudi Students as an “Interpretive Community” 28
  2.3.6 Concept of God in Muslim Interpretive Community 30
  2.3.7 Emotions and Allah in Muslim Interpretive Community 31
  2.3.8 Conclusive Remarks 31
  2.3.9 Earlier Empirical Studies to Test a Literary Concept 35
2.4 Literature and Emotions 37
  2.4.1 Attributes of Good Literature in Relation to Emotions 39
  2.4.2 Readers Interaction with Character and Emotions 40
3.5 Methods: Objective 2 -- Quantitative
  3.5.1 Demographic Status of the Sample
  3.5.2 Demographic Characteristics
  3.5.3 Sampling
  3.5.4 Research Instruments
  3.5.5 Tools
  3.5.6 Procedural Protocol

3.6 Method: Objective 3 -- Quantitative
  3.6.1 Procedural Framework for Objective 3
  3.6.2 Procedure for Survey

3.7 Data Processing and Analysis

3.8 Reliability and Validity

3.9 Ethical Considerations

3.10 Summary

CHAPTER 4 RESULTS AND DISCUSSION

4.1 Introduction

4.2 Statistical Results of Pilot Study
  4.2.1 Descriptive Results of HRV
  4.2.2 Baseline Very Low Frequency (VLF)
  4.2.3 Baseline High Frequency (HF)
  4.2.4 Baseline Low Frequency (LF)
  4.2.5 Very Low Frequency (VLF)
  4.2.6 High Frequency (HF)
  4.2.7 Low Frequency (LF)
  4.2.8 Coherence Score for Script 1 and Script 2
4.2.9 Average Heart Rate for Script 1 and Script 2 114
4.2.10 Reading Period for Script 1 and Script 2 115
4.2.11 Comparisons 115
4.2.12 Correlations 116
4.2.13 Discussion 120

4.3 The Qualitative Part – Objective 1 121
4.3.1 Results and Findings: Appendix A (Doctor Faustus) 121
4.3.2 Results and Findings: Appendix B: (Waiting for Godot) 124
4.3.3 Faculty Interview Results 128
4.3.4 Discussions 130
4.3.5 Conclusion 133

4.4 The Nijmegen Test 134

4.5 The State-Trait Anxiety Inventory 135
4.5.1 Form Y-1 and Y-2 Scores 135
4.5.2 Group 1 (Original Text) 135
4.5.3 Group 2 (Paraphrase) 135
4.5.4 Group 3 (Arabic Translation) 136

4.6 The Quantitative Part – Objective 2—Results and Findings 136
4.6.1 Group 1 (Original Text) 137
4.6.2 Group 2 (Paraphrase) 137
4.6.3 Group 3 (Arabic Translation) 137
4.6.4 Average Heart Rate for Script 1 and Script 2 138
4.6.5 Coherence Score for Script 1 and Script 2 139
4.6.6 Achievement Score for Script 1 and Script 2 140
4.6.7 Very Low Frequency (VLF) 141
4.6.8 High Frequency (HF) 142
4.6.9 Low Frequency (LF) 144
4.6.10 LF/HF Ratio 145
4.6.11 Discussion 146

4.7 The Quantitative Part – Objective 3-- Results and Findings 149
4.7.1 Comparison of Average Heart Rate for Script 1 and Script 2 150
4.7.2 Comparison of Coherence Score Script 1 and Script 2 151
4.7.3 Comparison of Achievement Score for Script 1 & Script 2 152
4.7.4 Comparison of VLF for Script 1 and Script 2 155
4.7.5 Comparison of LF for Script 1 and Script 2 156
4.7.6 Comparison of HF for Script 1 and Script 2 158
4.7.7 Comparison of LF/HF Ratio for Script 1 and Script 2 159
4.7.8 Correlations 162
4.7.9 Survey Results 172
4.7.10 Discussion 180

4.8 Hypotheses 185
4.8.1 Hypothesis 1 185
4.8.2 Hypothesis 2 186
4.8.3 Hypothesis 3 187

4.9 Summary 188

CHAPTER 5 CONCLUSION 190

5.1 Introduction 190
5.2 Conclusions 190
5.2.1 Contribution of the Study 192
5.2.2 Limitations of the Study 194
5.3 Recommendations for Future Research 195
5.4 Implications of the Study

REFERENCES

APPENDIX A

APPENDIX B

APPENDIX C

APPENDIX D

APPENDIX E

APPENDIX F

APPENDIX G

APPENDIX H

APPENDIX I

APPENDIX J

APPENDIX K

APPENDIX L

APPENDIX M

APPENDIX N

APPENDIX O

APPENDIX P

APPENDIX Q

APPENDIX R

APPENDIX S

APPENDIX T

APPENDIX U

APPENDIX V

APPENDIX Y

APPENDIX Z
<table>
<thead>
<tr>
<th>APPENDIX A1</th>
<th>300</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPENDIX A2</td>
<td>301</td>
</tr>
</tbody>
</table>
**LIST OF TABLES**

| Table 2.1 | List of emotions categorized into a short tree structure | 45 |
| Table 2.2 | Heart Rate Variability measures | 59 |
| Table 2.3 | Thematic comparison of Dr. Faustus and Waiting for Godot | 75 |
| Table 3.1 | Description of demographic characteristics | 87 |
| Table 3.2 | Comparison of script 1 “Waiting for Godot” and script 2 “Dr. Faustus” | 100 |
| Table 4.1 | Descriptive analysis of the data of the pilot study | 113 |
| Table 4.2 | Inferential analysis of the data of the pilot study | 116 |
| Table 4.3 | A comparative statement of antithetical Themes in “Dr. Faustus” and “Waiting for Godot” | 134 |
| Table 4.4 | Nijmegen score of the sample | 134 |
| Table 4.5 | Results for STAI Y-1 & STAI Y-2 | 136 |
| Table 4.6 | Results of reading period | 138 |
| Table 4.7 | Results of average heart rate | 139 |
| Table 4.8 | Results of coherence score | 140 |
| Table 4.9 | Results of HRV | 144 |
| Table 4.10 | Overall results (comparison of average heart rate for script 1 & script 2) | 150 |
| Table 4.11 | Intra group results (comparison of average heart rate for script 1 & script 2) | 150 |
| Table 4.12 | Inter group results (comparison of average heart rate for script 1 & script 2) | 150 |
| Table 4.13 | Overall results (comparison of coherence score script 1 and script 2) | 151 |
| Table 4.14 | Intra group results (comparison of coherence score script 1 and script 2) | 151 |
| Table 4.15 | Inter group results (comparison of coherence score script 1 and script 2) | 151 |
| Table 4.16 | Overall results (comparison of achievement score for script 1 & script 2) | 152 |
| Table 4.17 | Intra group (comparison of achievement score for script 1 & script 2) | 153 |
| Table 4.18 | Inter group (comparison of achievement score for script 1 & script 2) | 153 |
| Table 4.19 | Overall results (comparison of VLF for script 1 and script 2) | 155 |
| Table 4.20 | Intra group results (comparison of VLF for script 1 and script 2) | 155 |
| Table 4.21 | Inter group results (comparison of VLF for script 1 and script 2) | 155 |
| Table 4.22 | Overall results (comparison of Lf for script 1 and script 2) | 156 |
| Table 4.23 | Intra group results (comparison of Lf for script 1 and script 2) | 156 |
| Table 4.24 | Inter group results (comparison of LF for script 1 and script 2) | 157 |
| Table 4.25 | Overall results (comparison of HF for script 1 and script 2) | 158 |
| Table 4.26 | Intra group results (comparison of HF for script 1 and script 2) | 158 |
| Table 4.27 | Inter group results (comparison of HF for script 1 and script 2) | 158 |
| Table 4.28 | Overall results (comparison of LF/HF ratio for script 1 and script 2) | 159 |
| Table 4.29 | Intra group (comparison of LF/HF ratio for script 1 and script 2) | 159 |
| Table 4.30 | Inter group results (comparison of LF/HF ratio for script 1 and script 2) | 160 |
| Table 4.31 | Correlations | 162 |
| Table 4.32 | Survey results “Waiting for Godot” | 173 |
| Table 4.33 | Survey results “Dr. Faustus” | 177 |
# LIST OF FIGURES

| Figure 2.1 | Flow chart of the conceptual framework of the study | 18 |
| Figure 2.2 | Roman Jakobson’s factors of communication | 19 |
| Figure 2.3 | Context, Experiential, Social, Cultural, and Psychological lenses of the reader/ text/ context transaction, | 22 |
| Figure 2.4 | Faircloygh’s 3-dimensional model | 34 |
| Figure 2.5 | Principles of biofeedback | 52 |
| Figure 2.6 | Heart Rate Variability | 57 |
| Figure 2.7 | Power spectrum of the HRV waveform | 59 |
| Figure 2.8 | Relationship between nervous system and the heart and brain | 60 |
| Figure 2.9 | Comparative Impact of ‘Dr. Faustus’ and ‘Waiting for Godot’ on the Muslim Readers’ Emotions | 77 |
| Figure 3.1 | Methodology flow chart of pilot study | 82 |
| Figure 3.2 | Methodology flow chart for objective 1 | 82 |
| Figure 3.3 | Flow Chart of identification of the antithetical themes from the texts | 85 |
| Figure 3.4 | Photoplethysmograph ear sensor | 89 |
| Figure 3.5 | emWave’s USB key with the pulse sensor plugged in | 89 |
| Figure 3.6 | emWave’s clip-on ear sensor | 90 |
| Figure 3.7 | Screen shot while taking data | 91 |
| Figure 3.8 | Screen shot showing coherence ratio | 91 |
| Figure 3.9 | Difference in coherence ratio | 93 |
| Figure 3.10 | Coherence light panel | 93 |
| Figure 3.11 | Automatically saved record of the sessions with the sample | 94 |
| Figure 3.12 | Target area on screen | 95 |
| Figure 3.13 | Split HRV wave | 96 |
| Figure 3.14 | The power spectrum of HRV | 97 |
| Figure 3.15 | Reading of script 1 “Waiting for Godot” | 103 |
| Figure 3.16 | Relaxing 2 between reading of script 1 “Waiting for Godot” and script 2 “Dr. Faustus” | 103 |
| Figure 3.17 | Reading of script 2 “Dr. Faustus” | 104 |
| Figure 3.18 | HRV record of the first sample | 105 |
| Figure 3.19 | Methodology flow chart for objective 2 | 106 |
| Figure 3.20 | Methodology flow chart for objective 3 | 107 |
| Figure 4.1 | Response of the faculty for Samuel Beckett’s play “Waiting for Godot” | 129 |
Figure 4.2  Response of the faculty for Christopher Marlowe’s play “Dr. Faustus”  
Figure 4.3  Comparison of achievement score  
Figure 4.4  Comparison of LF  
Figure 4.5  Comparison of LF/HF Ratio  
Figure 4.6  Correlation between script 1 VLF and script 1 LF  
Figure 4.7  Correlation between script 1 LF/HF ratio and script 1 LF  
Figure 4.8  Correlation between script 2 VLF and script 2 LF  
Figure 4.9  Correlation between script 2 VLF and script 2 coherence  
Figure 4.10 Correlation between script 2 achievement and script 2 coherence  
Figure 4.11 Correlation question 1 “waiting for godot”  
Figure 4.12 Correlation question 2 “waiting for godot”  
Figure 4.13 Correlation question 3 “waiting for godot”  
Figure 4.14 Correlation question 4 “waiting for godot”  
Figure 4.15 Correlation question 5 “waiting for godot”  
Figure 4.16 Correlation question 1 “Dr. Faustus”  
Figure 4.17 Correlation question 2 “Dr. Faustus”  
Figure 4.18 Correlation question 3 “Dr. Faustus”  
Figure 4.19 Correlation question 4 “Dr. Faustus”  
Figure 4.20 Correlation Question 5 “Dr. Faustus”
## LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HR</td>
<td>Heart Rate</td>
</tr>
<tr>
<td>HRV</td>
<td>Heart Rate Variability</td>
</tr>
<tr>
<td>ANS</td>
<td>Autonomic Nervous System</td>
</tr>
<tr>
<td>CNS</td>
<td>Central Nervous System</td>
</tr>
<tr>
<td>LF</td>
<td>Low Frequency</td>
</tr>
<tr>
<td>VLF</td>
<td>Very Low Frequency</td>
</tr>
<tr>
<td>HF</td>
<td>High Frequency</td>
</tr>
<tr>
<td>SDDN</td>
<td>Standard Deviation N-N Interval</td>
</tr>
<tr>
<td>IBI</td>
<td>Inter Beat Interval</td>
</tr>
<tr>
<td>RFT</td>
<td>Resonant Frequency Training</td>
</tr>
<tr>
<td>EEG</td>
<td>Electroencephalography</td>
</tr>
<tr>
<td>EMG</td>
<td>Electromyography</td>
</tr>
<tr>
<td>ECG</td>
<td>Electrocardiography</td>
</tr>
<tr>
<td>r2</td>
<td>Square of Pearson Correlation</td>
</tr>
</tbody>
</table>
REFERENCES


Green, M. C., Garst, J., & Brock, T. C. (2004). The power of fiction: Determinants and boundaries. *The psychology of entertainment media: Blurring the lines between entertainment and persuasion, 161-176*.


Povey, J. F. (1967). Literature in the English as a second language (ESL) program, problems of language and culture.ERIC


Purves, A. C., & Beach, R. (1972). Literature and the reader: Research in response to literature, reading interests, and the teaching of literature.ERIC


Valsson, J. (2012). Godot is Dead: Nietzsche and Beckett on Salvation and Suffering in a Godless Universe. Student Thesis. Stockholm University, Faculty of Humanities, Department of English


