EXPLORING AVATAR FACIAL FIDELITY AND EMOTIONAL EXPRESSİONS ON OBSERVER PERCEPTIONS OF THE UNCANNY VALLEY

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by

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ABSTRACT

Avatars have been a traditional mainstay of game based interactive entertainment, where they aim to enhance story-based interaction and player engagement. However, there has been an increase in avatar roles in fields such as serious gaming and simulation training, where accurate and cost-effective avatar development and ability to convey human emotional expressions is of interest. The area of emotional expression in avatars is not well understood, and ‘uncanniness’ in avatars can pose issues that may impact on training outcomes.

There are two aims of this research, firstly to explore how avatar fidelity or realism influences the emotional experience of interactions between humans and computer-generated avatars. Secondly, to examine how the emotional expressions displayed by avatar facial features affect participants perceived valence or the intrinsic attractiveness of the avatar. In order to test these affects, this research uses a combination of survey and experimental methodologies. Utilising a Godspeed survey to measure the perception of an avatars ‘humanness’, ‘eeriness’ and ‘attractiveness’, and a three-part experiment measuring participant startle reflex responses to differing fidelity and emotional expression avatars, human-avatar interaction was explored.

The analysis of results indicated that participant gender played a role in the perception of avatars. In addition, the avatars themselves appear to have a significant impact on the responses from participants. The emotional expressions displayed indicated that sad expressions are less unpleasant and possibly less uncanny, than smiling.

In conclusion, this research represents an entry point into a broad, cross-disciplinary research area. While there are important findings and contributions made, the significant amount of data generated through the experiments will pose questions for future work in this research area.
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# TABLE OF CONTENTS

1 **INTRODUCTION** ..................................................................................................................1  
1.1 Problem Definition ...........................................................................................................1  
1.2 Research Questions ..........................................................................................................3  
1.3 Approach and Contributions ............................................................................................4  
1.4 Organization of this Thesis ..............................................................................................5  

2 **LITERATURE REVIEW** ....................................................................................................6  
2.1 Systematic Literature Review ..........................................................................................6  
2.2 Formulation of Research Questions .................................................................................8  
2.3 Locating Relevant Literature ...........................................................................................9  
2.4 Selection and Evaluation of Literature ............................................................................11  
2.5 Analysis and Synthesis of Systematic Literature Review ..............................................12  
2.5.1 Avatar and Human Interaction ................................................................................12  
2.5.2 Facial Animation of Avatars ....................................................................................17  
2.5.3 The Study of Emotional Expression in Avatars ........................................................................20  
2.5.4 Avatars and Levels of Fidelity/Realism ......................................................................23  
2.6 The Uncanny Valley ......................................................................................................27  
2.7 Review of Literature Addressing Measurement of Emotional Responses ....................33  
2.7.1 Emotional Responses and Affective Processing .........................................................33  
2.7.2 Survey Instruments (Godspeed Index) .......................................................................35  
2.7.3 Physiological Measurement of Emotions (Startle Reflex) .........................................37  
2.7.4 International Affective Picture System ......................................................................40  
2.8 Summary ........................................................................................................................41  

3 **METHODS** ........................................................................................................................45
3.1 Introduction .....................................................................................................................45
3.2 Research Questions ........................................................................................................45
3.3 Research Framework .....................................................................................................46
3.4 Justification of the Methodology ...................................................................................49
3.5 Research Methods ..........................................................................................................52
  3.5.1 Participant numbers and recruitment .........................................................................54
  3.5.2 Experiment .................................................................................................................55
  3.5.3 Surveys .......................................................................................................................62
  3.5.4 Collection and Storage of Data ..................................................................................63
  3.5.5 Analysis of Godspeed Survey Data ...........................................................................64
  3.5.6 EMG Startle Reflex Data Analysis ............................................................................65
3.6 Limitations of Research Methodology ...........................................................................66
  3.6.1 Time restrictions ........................................................................................................66
  3.6.2 Participant Numbers ...................................................................................................67
  3.6.3 Limitations of choice relating to physiological indicators and avatar generation ..................67
3.7 Summary ........................................................................................................................68

4 RESULTS .............................................................................................................................70
4.1 Introduction ....................................................................................................................70
4.2 Participant Demographic Results ...................................................................................70
4.3 EMG Startle Results ........................................................................................................72
  4.3.1 EMG Startle Responses to the Baseline Images ........................................................72
  4.3.2 EMG Startle Responses to the Emotional Expression Avatars ....................................77
4.4 Godspeed Results ..........................................................................................................81
  4.4.1 Repeated Measures ANOVA for Fidelity avatars .....................................................81
  4.4.2 Repeated Measures ANOVA of Still and Animated Avatars .....................................83
4.5 Other Findings – Gender Differences .................................................................85
        4.5.1 EMG Data: Baseline ......................................................................................85
        4.5.2 EMG Responses to Fidelity Avatars – Gender Differences ..........................86
        4.5.3 Godspeed Results – Gender Differences ....................................................88
4.6 Correlation Analysis of EMG and Godspeed Data..............................................89
        4.6.1 Fidelity Avatars............................................................................................89
4.7 Emotional Expression Avatars – Still Images ......................................................90
4.8 Emotional Expression Avatars – Animated .........................................................90
4.9 Summary of Results.............................................................................................91
5 DISCUSSION AND CONCLUSIONS .......................................................................93
      5.1 Introduction.......................................................................................................93
      5.2 Contributions of the Research ........................................................................96
      5.2.1 Contributions from the Literature Review ...................................................96
      5.2.2 Contributions from the Experiments ............................................................97
5.3 Limitations and Future Work..............................................................................102
      5.4 Conclusion .......................................................................................................103
6 REFERENCES ........................................................................................................104
7 APPENDIX A – EXPERIMENT PRE-QUESTIONNAIRE ........................................112
8 APPENDIX B – EXPERIMENT GODSPEED SURVEY ......................................115
9 APPENDIX C – RISK ASSESSMENT FOR THIS RESEARCH ..............................116
      9.1 Risk Identification.............................................................................................116
      9.2 Risk Assessment – Scale 1 low 3 Medium 5 High ...........................................118
      9.3 Response Development....................................................................................119
10 APPENDIX D – Gender differences in godspeed means ......................................122
11 APPENDIX E – Correlation Matrixes for all avatars .........................................124
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.1</td>
<td>High-Fidelity Avatars</td>
<td>124</td>
</tr>
<tr>
<td>11.2</td>
<td>Low-Fidelity Avatars</td>
<td>125</td>
</tr>
<tr>
<td>11.3</td>
<td>Emotional Expression Avatars – Still Images</td>
<td>126</td>
</tr>
<tr>
<td>11.4</td>
<td>Emotional Expression Avatars – Animated</td>
<td>127</td>
</tr>
</tbody>
</table>
LIST OF FIGURES

Figure 1 – The Uncanny Valley (Mori, 1970) ................................................................. 3
Figure 2 – Systematic Literature review process .............................................................. 8
Figure 3 – Graphical representation of the valence/affect model (Valenza et al., 2011) .... 34
Figure 4 – Organisation of the startle reflex eyeblink and physiological indicators (Witvliet & Vrana, 1995, pg. 441) .................................................................................................. 38
Figure 5 – Experiment Procedure .................................................................................. 53
Figure 6 - EMG Electrode placement on participants ..................................................... 56
Figure 7 – Sample of images from selected categories from the IAPS .............................. 57
Figure 8 – Age ranges of all participants ....................................................................... 71
Figure 9 – Number of hours a week spent engaging with avatars for all participants .... 72
Figure 10 – All participant responses to the baseline image categories ......................... 73
Figure 11 – All participant responses to the baseline image categories, excluding P0013 .... 73
Figure 12 – A comparison of male and female participant response to all three categories of baseline imagery ...................................................................................................... 74
Figure 13 – Average normalised peak EMG for all participants viewing fidelity avatars .... 75
Figure 14 - Average Normalised Peak EMG for Emotionally Expressive avatars – still images ......................................................................................................................... 77
Figure 15 - Average Normalised Peak EMG for Emotionally Expressive avatars – Animated imagery ....................................................................................................................... 78
LIST OF TABLES

Table 1 - Parameters and search sources ................................................................. 9
Table 2 - Inclusion and exclusion criteria for searches ............................................. 10
Table 3 – Results from the systematic review ......................................................... 11
Table 4 - Key dimensions of uncanniness adapted from MacDorman, Green, Ho and Kock (2009) .................................................................................................................. 30
Table 5 – Valence and arousal ratings of images used in this study ..................... 58
Table 6 – Avatars used in the fidelity section of the experiment ......................... 59
Table 7 – Avatars used for the emotional expression section of the experiments .... 61
Table 8 – T-Test results for EMG startle response .................................................. 74
Table 9 - T-Test results for EMG startle responses for Fidelity Avatars .................. 76
Table 10 - T-Test results for EMG startle responses for emotional expression avatars ...... 79
Table 11 - Godspeed means and standard errors for perception of humanness of fidelity avatars ........................................................................................................................................ 82
Table 12 - Godspeed means and standard errors for perception of eeriness of fidelity avatars ........................................................................................................................................ 82
Table 13 - Godspeed means and standard errors for perception of attractiveness of fidelity avatars ........................................................................................................................................ 83
Table 14  - Godspeed means and standard errors for perception of humanness of still and animated avatars ........................................................................................................................................ 84
Table 15 - Godspeed means and standard errors for perception of eeriness of still and animated avatars ........................................................................................................................................ 84
Table 16 - Godspeed means and standard errors for perception of attractiveness of still and animated avatars..............................................................................................................................85

Table 17 – Means and standard deviations for female and male participants’ baseline responses ........................................................................................................................................85

Table 18 - Results from T-Tests based on participant gender for Fidelity avatars........86

Table 19 - Results from T-Tests based on participant gender for Emotionally Expressive avatars ......................................................................................................................................87

Table 20 – Female Godspeed Means ..................................................................................122

Table 21 – Male Godspeed Means......................................................................................123

Table 22 – Ira (Happy) .......................................................................................................124

Table 23 – Ira (Sad) ..........................................................................................................124

Table 24 – Emily (Happy) .................................................................................................124

Table 25 – Emily (Sad) .....................................................................................................124

Table 26 – Liliwen (Happy) ..............................................................................................125

Table 27 – Liliwen (Sad) ...................................................................................................125

Table 28 – Leo (Happy) ....................................................................................................125

Table 29 – Leo (Sad) .......................................................................................................125

Table 30 - Curls (Happy) .................................................................................................126

Table 31 – Curls (Sad) ....................................................................................................126

Table 32 – Jacqueline (Happy) ........................................................................................126

Table 33 – Jacqueline (Sad) ...........................................................................................126

Table 34 - Macaw (Happy) ..............................................................................................126

Table 35 – Macaw (Sad) ................................................................................................127

Table 36 – Curls (Happy) .................................................................................................127

Table 37 - Curls (Sad) ....................................................................................................127
Table 38 - Macaw (Happy)........................................................................................................127
Table 39 - Macaw (Sad).........................................................................................................127
Table 40 - Jacqueline (Happy)............................................................................................128
Table 41 - Jacqueline (Sad)................................................................................................128