CHAPTER 4

THE COMPUTERISED QUESTIONNAIRE:

A DESCRIPTION OF THE PONTO VISTA PROGRAM

4.1 INTRODUCTION

The purpose of this chapter is to provide a detailed functionality description of the computerised questionnaire, Ponto Vista, which was used by the participants during Part II of the methodology as described in Chapter 3. It contains a description of 1) the main window which provides access to the program, 2) the introduction window which provides an overview of the questions, 3) the functionality of Questions 1, 2, 3 and 4, 4) visual indicators such as the total progress window and loading window, 5) the report created by Ponto Vista at the end of each session, 6) other general information about the program, as well as 7) a time line and development stages of Ponto Vista. Each description is accompanied by figures that consist of screen shots taken from a demonstration version of the program or report to inform the reader. A summary will conclude this chapter.

4.2 PURPOSE

The purpose of this computer program is to capture the emotional responses of a user to various musical tracks in real-time[1] in a consistent, continuous, uninterruptable and repeatable manner. This real-time or continuous method of measurement can be used to indicate with more certainty which auditory experience aroused a specific emotional response.

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[1] According to the Oxford Dictionary 'real-time' is defined as 'the actual time during which a process or event occurs".

4.3 DESCRIPTION

4.3.1 Main window

The main window allows a user to log into the program. Different user profiles can be created and customised according to requirements. A user can pre-determine the musical tracks that will be played, and has the opportunity to select which interfaces or formats should be used during Question 2 for a specific musical track (see section 5 regarding multi interfaces). For the purpose of this study all musical tracks, interfaces and formats were pre-determined by the researcher.

The main window consists of three navigation controls: a control to accept logging in (OK), to exit the program (Cancel) and to access the playlist editor (Manage) (see Figure 4.1a). If a user's profile already exists and this user's playlist should remain unchanged, the user can log in with a user name and proceed to the introduction window (Figure 4.2a). If a user wishes to edit the playlist, or if a new profile needs to be defined, the user simply enters a username and choose the 'Manage'-option and 'OK' (Figure 4.1b), and proceed to the playlist editor (Figure 4.1c).
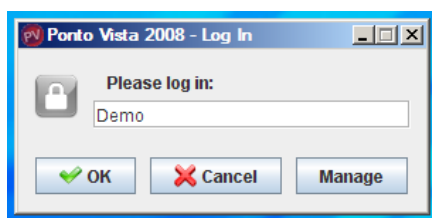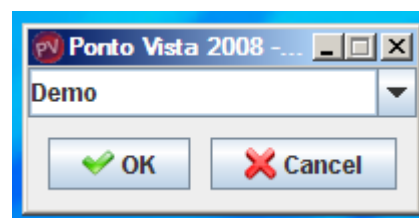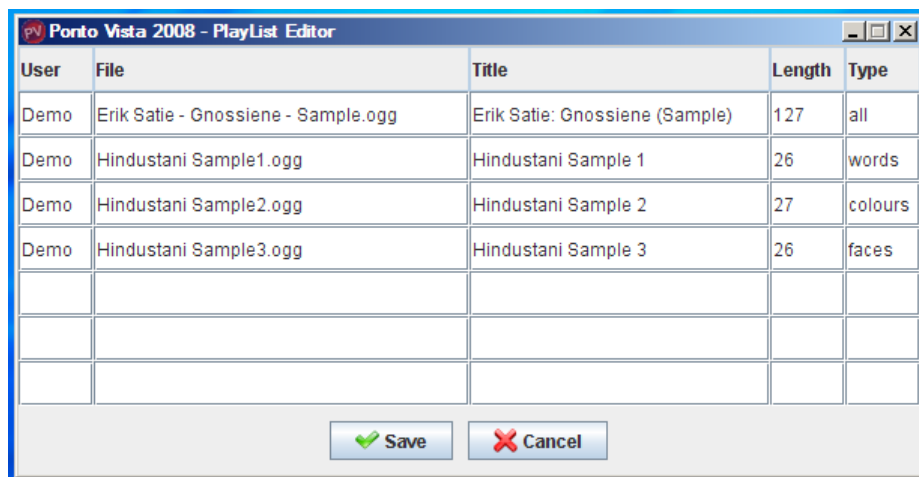
Figure 4.1a Log in screen	Figure 4.1b Enter username

Figure 4.1c Playlist editor

In the first column of the playlist editor (titled 'User') the user must enter the username next to every musical track that should be in the playlist. In the second column (titled 'File') the user must enter the precise file name of the musical track(s). The program was designed to play Ogg Vorbis audio format files (.ogg), and these files need to be in the same folder as the Ponto Vista program files in order to be retrieved. In the 'Title'-column the user can enter the title of the musical track as it should be displayed on the screen during the session. The 'Length'-column provides the user with a space to enter the precise length of the musical track in seconds only. The 'Type'-column applies to Question 2 of the program (the multi-interface checklist), where the user selects words and/or colours and/or faces which best represents his/her emotional experience of that particular track. To use all three interfaces for a musical track, type 'all'; to use only the words or colours or faces interface, type 'words' or 'colours' or 'faces' (always in lower case and in plural). The playlist can be saved by using the Save-button, and the user may progress back to the log-in window. For the purpose of this study, the researcher completed this part of the program in advance, and only allowed the participants to log into the program without altering their user profiles.

4.3.2 Introduction window

The introduction window (Figure 4.2a) appears after a successful log-in. It contains a personalised welcome note from the creative designer (researcher), a comprehensive overview of the questions (Figure 4.2b), as well as references to the research used in the development of the questionnaire (see Chapter 3 to view the complete 'Welcome note' and an overview of the questions).
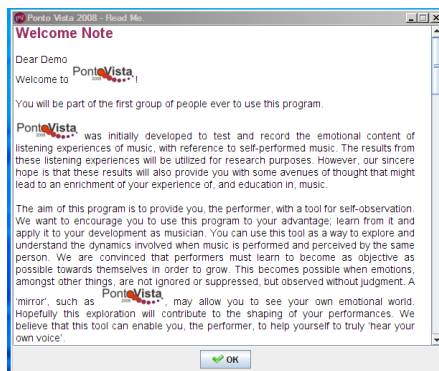
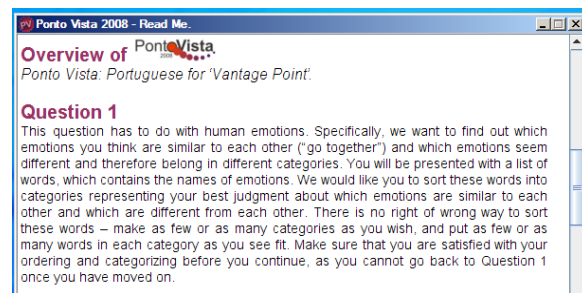

Figure 4.2a Introduction window

Figure 4.2b Overview of the questions

4.3.3 Question 1 – Word sorting

After reading the welcome note and the overview of the questions, the user progresses to Question 1 (see Figure 4.3a) where a list of words is presented. This question was provided with a 'help'-function to assist the user (see Figure 4.8 for an example. Also see Chapter 3 for all 'help'-functions).

The word sorting window allows the user to arrange the words in the word pool (the top half of the screen) into different categories (the bottom half of the screen). The end-product of this question is preserved until the user logs off.

Two predefined categories, namely 'not emotion' and 'unknown', form part of this question. The user is instructed to sort all words that are not viewed as emotions into the 'not emotion'-

category, and all words that are unknown to the user or of which the meaning is unclear, into the 'unknown'-category. The words can be sorted in the following way:

- Double click on the word and drag-and-drop it into a category, or click on the word once and then on the + sign to add it to a category.

- If a word needs to be removed from a category, double click on the word and then drag-and-drop it to the preferred category, or click on the word once, click on the – sign and then click on the + sign of the category into which it should be sorted.

- If a number of words need to be selected simultaneously, press 'Ctrl' and click once on these words. 'Shift' may also be used to select a number of consecutive words.

- To rename a category, click on the word that is to be used as a title for that category, and then click on the 'Untitled' heading.

- To remove a category, all words must be moved from that category to another one, and the category itself must be removed by clicking on the –sign of that category (see Figure 4.3b).
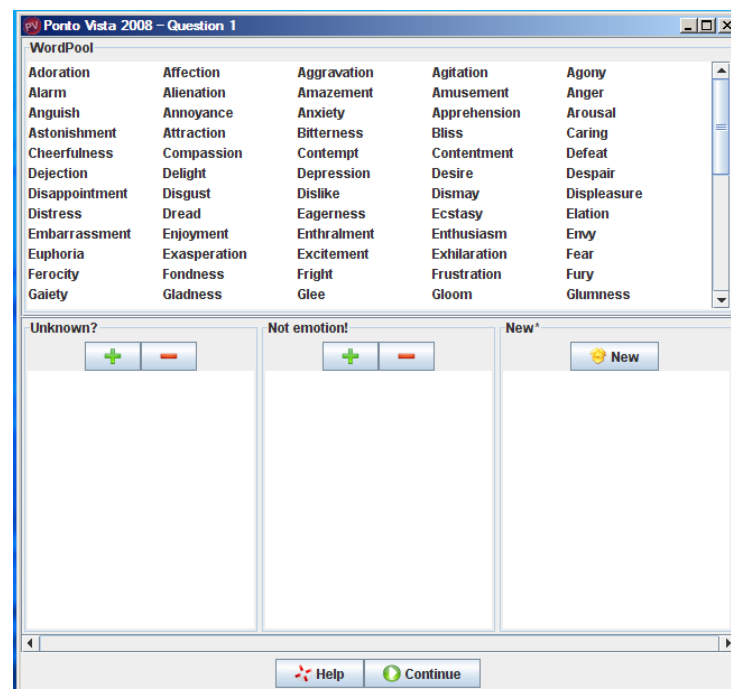

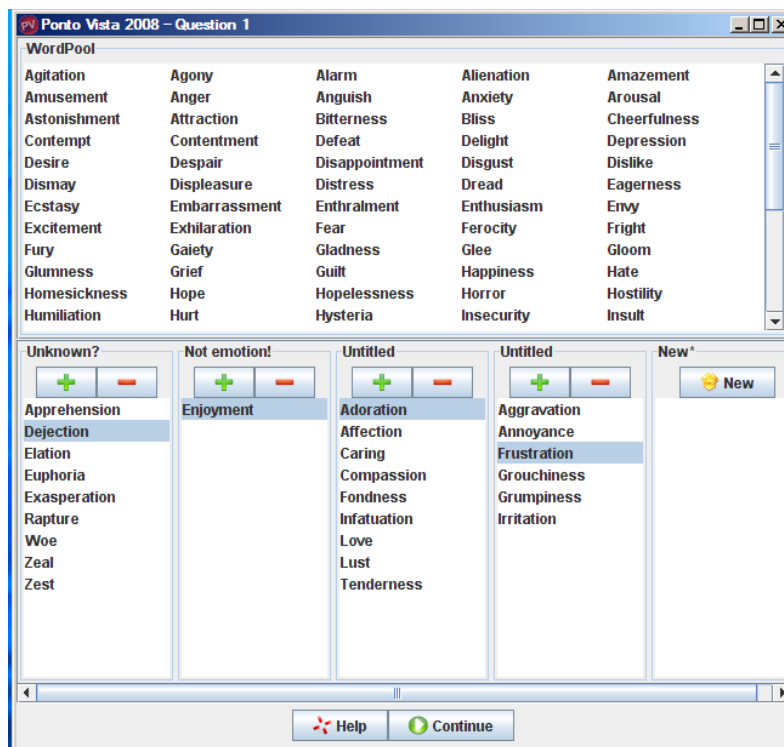Figure 4.3a Question 1 – word sorting

Figure 4.3b Question 1 – word sorting

A word may belong to one category only, and can only serve as a title if that word is in the specified category; once the word is moved to another category, the title will automatically be relabelled as 'untitled'. Another new category will automatically be created every time a word is put into a new category. The words will automatically organise themselves alphabetically inside the category. There is no limit to the number of categories a user may construct, or the number of words a user may sort into a category. Users cannot return to Question 1 once it has been completed.

The program was designed to prevent users from continuing should they not comply with the exact instructions of this question. In the case where all the words were not sorted, Figure 4.4a will automatically screen; if a previously used-category is left empty, Figure 4.4b will screen; and if a category was created but no title selected, Figure 4.4c will screen. The screen in Figure 4.4d enables the user to return for the moment only to recheck the number of categories that was created, the title of each category and the words in each category before continuing to Question 2 (multi interface checklist).
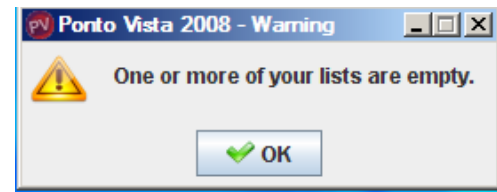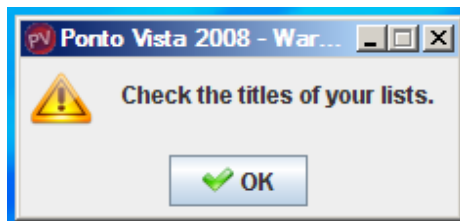
Figure 4.4a Warning

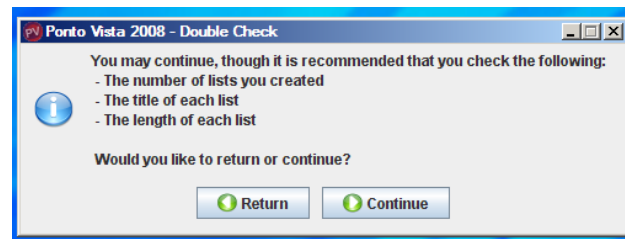
Figure 4.4b Warning

Figure 4.4c Warning

Figure 4.4d Return or continue

4.3.4 Total progress window and loading window

The total progress window (see Figure 4.5a) provides the user with a visual indication of the progress being made with the questionnaire. It displays the musical tracks which the user will be listening to during Question 2 (the multi interface check list). A yellow speaker next to the title of the musical track indicates that it is about to play. This window is also provided with a 'help'-function.
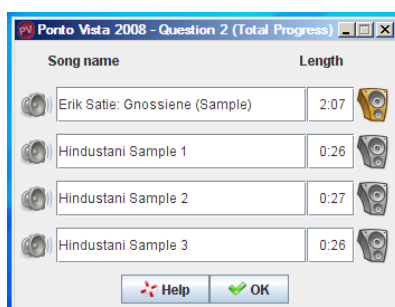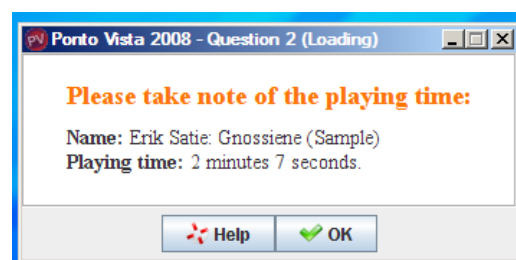

Figure 4.5a Total progress window

Figure 4.5b Loading window

The loading window for Question 2 (Figure 4.5b) displays the title and length of the musical track that is about to play. This window is also provided with a 'help'-function for Question 2. The 'help'-function can only be accessed *before* the user continues to Question 2, since he is supposed to experience the music without any interruptions. The loading window aids as a visual warning to inform the user of the amount of time available to complete this question.

4.3.5 Question 2 – Multi interface checklists

Figure 4.6a shows an excerpt from the multi interface checklists, which are displayed when a musical track starts playing. These provide the user with different interfaces by which emotional responses may be indicated. The categories of words constructed in Question 1 now appear here, along with the colours and the facial expressions as described in Chapter 3.

Figure 4.6a Example of multi interface checklists

Figure 4.6b Panel at bottom of window

Figure 4.6c Timer
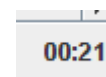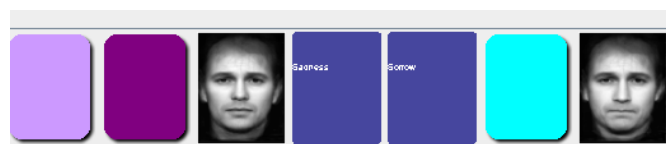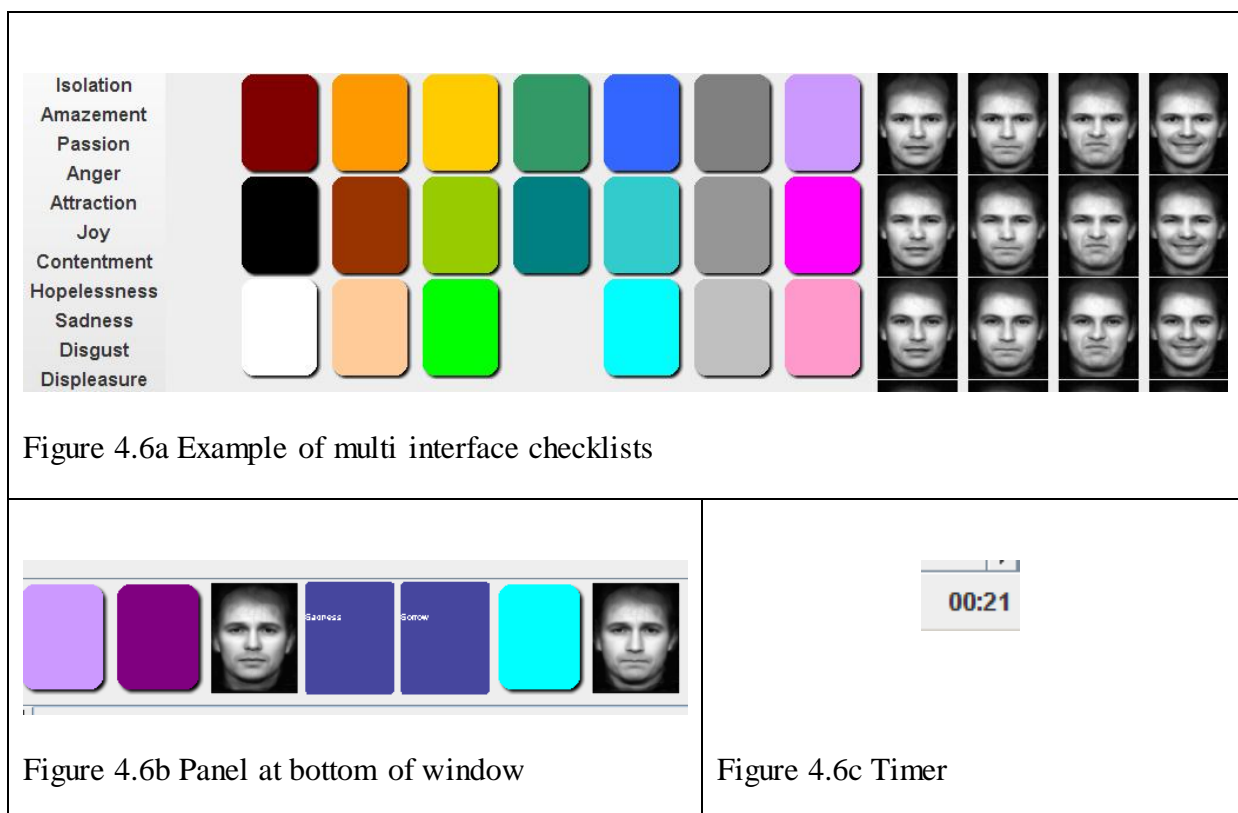
To select a word, the user may click on the title of the desired category where a drop-down menu is provided with all the words in that particular category. The user then simply clicks once on the desired word in that category. To select a colour or facial expression, a user may double click on the chosen interface. Users may select as many words, colours or facial

expressions as desired, in any order or combination. All interfaces may be selected more than once. All the selections appear in a panel at the bottom of the window (Figure 4.6b). A timer in the right-hand corner of the window (Figure 4.6c) indicates the remaining time of the musical track. After the musical track has stopped, the program allows the user an additional 15 seconds to make any last selections, in which case the timer turns red. The program then automatically continues to Question 3.

4.3.6   Question 3 – Free description

The free description window allows the users to describe their personal, emotional experiences of the musical track in their own words (Figure 4.7). They may type as little or as much as desired, and no time limit is imposed. Typing may be activated by clicking anywhere inside the window. This window was also provided with a 'help'-function (Figure 4.8).
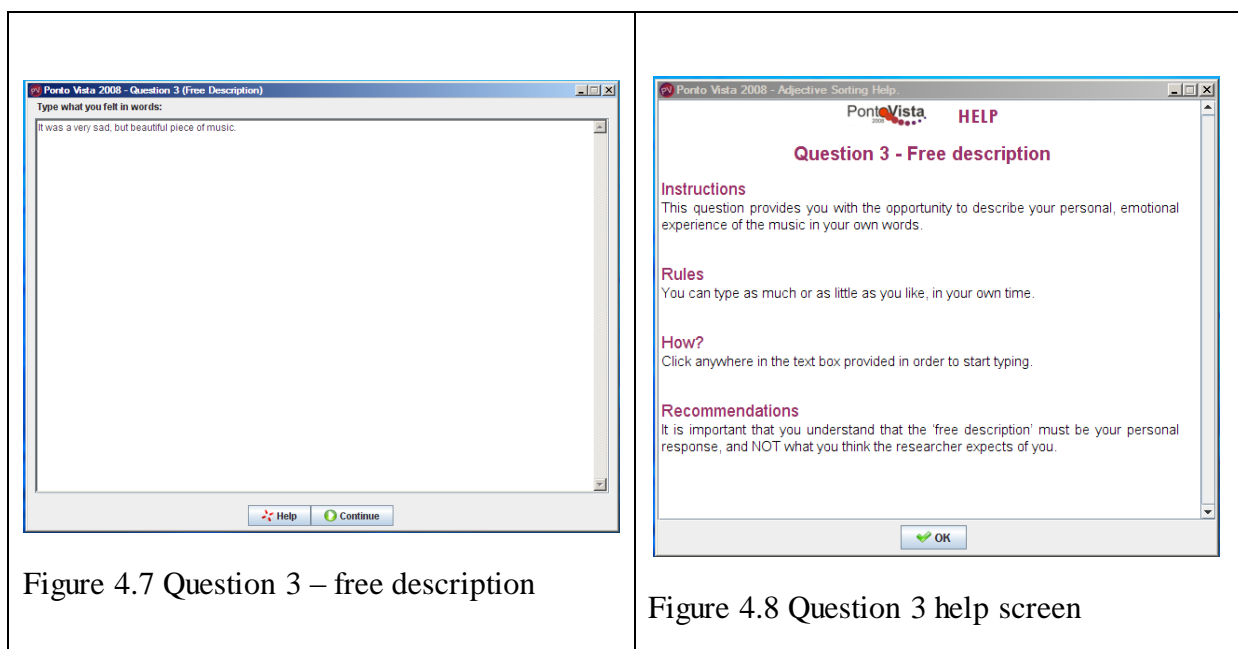

Figure 4.7 Question 3 – free description

Figure 4.8 Question 3 help screen

4.3.7 Question 4 – Rating scales

The rating scales window allows users to rate elements of the musical track (Figure 4.9a). They may select any number between 1 and 5 for scales 4a-4e and are allowed to select the same number for scales 4a-4e. They can slide the scale by clicking on the desired number or drag-and-drop the slider of the scale to the selected number. The red backgrounds serve as a visual prompt that the particular scale has not yet been used; once the desired rating has been selected for a particular scale, the red background will disappear. For Question 4f, the user must select a number only once, since each term must be rated according to its appropriateness to the musical track. The red background will remain until all the ratings have been chosen. This window is also provided with a 'help'-function.

Figure 4.9a Rating scales

The program was designed to prevent users from continuing with the session if they don't comply with the exact instructions of this question. In the case where one or more questions have not been answered, Figure 4.9b will screen (this applies for Question 4f as well). The screen in Figure 4.9c enables users to return for the moment only to recheck the ratings. They cannot return to this question once they have proceeded with the program.
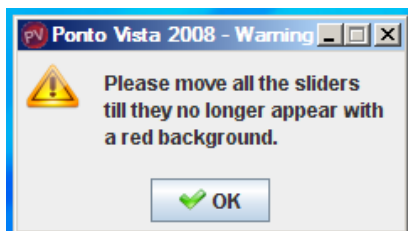
Figure 4.9b Warning
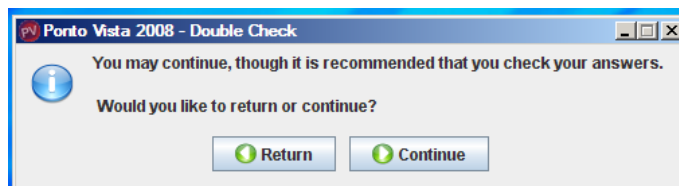
Figure 4.9c Warning

After the user has completed Question 4, the program returns to the total progress window (Figure 4.10). A blue tick mark next to the title indicates that all the questions for that particular musical track have been answered. Questions 2 to 4 are then repeated until all the musical tracks in the playlist have played and all questions have been completed.
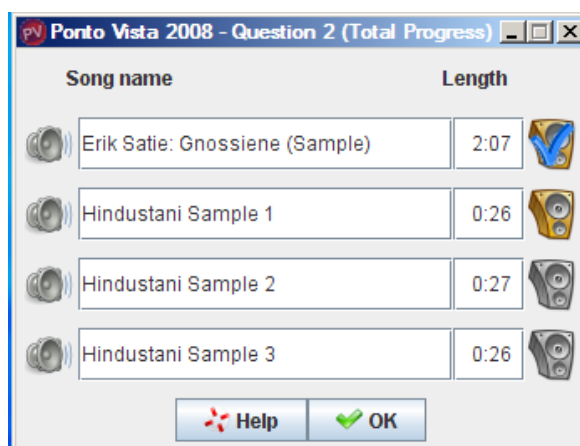
Figure 4.10 Total progress window

At the end of the questionnaire the program progresses to the farewell window (Figure 4.11), where a thank you note was posted by the creative designer (researcher). The user can now end the session by logging out.
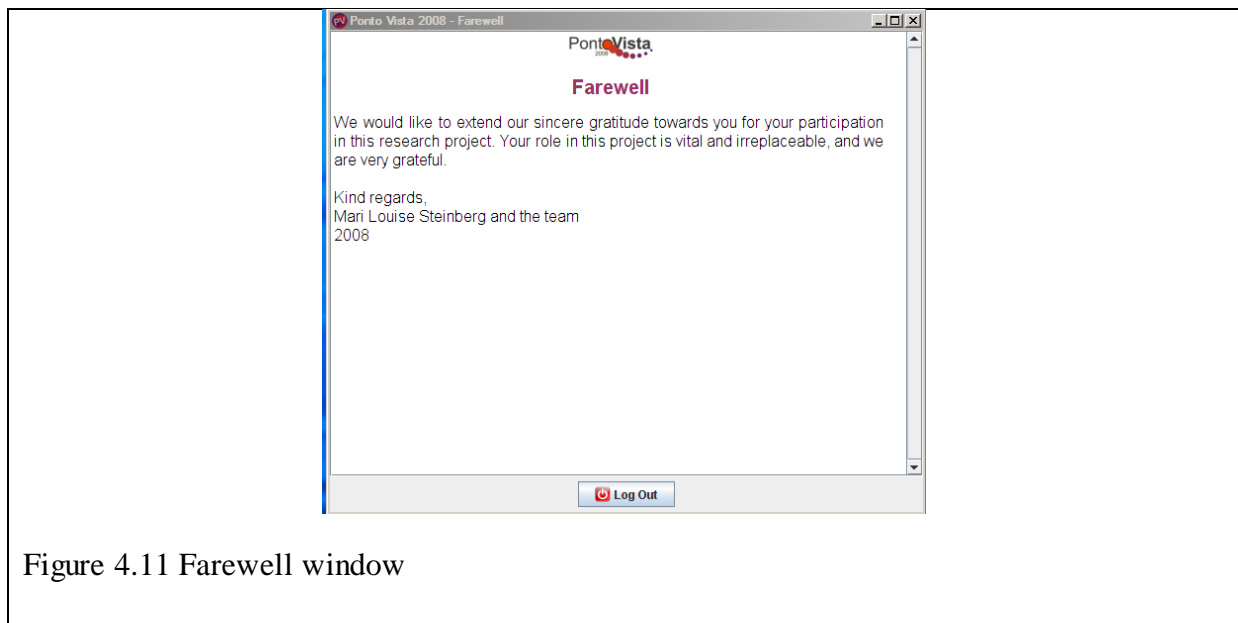
Figure 4.11 Farewell window

4.3.8 The report

At the end of each session the program automatically creates a report file in HTML-format in the folder where the Ponto Vista files are located. The report is a total representation of the user input recorded during the session. This provides the researcher with a consistent format for analysing and processing the participant's input.

4.3.8.1 General information

The report contains the date on which the questionnaire was completed (Figure 4.12a), the name of the user, the exact time the session started (Figure 4.12b) the exact time a user started and completed a question (Figure 4.12d), as well as the playlist and interfaces selected for that particular session (Figure 4.12c).

2009-06-17 18h21 Demo.html Figure 4.12a Report: date	18:21:16.093 User logged in : Demo Figure 4.12b Report: username
Playlist Name : Erik Satie: Gnossiene (Sample) File : Erik Satie - Gnossiene - Sample.ogg Length : 127 Type : Display Words, Colours, and Faces Name : Hindustani Sample 1 File : Hindustani Sample1.ogg Length : 26 Type : Display Words Only Figure 4.12c Report: playlist and interfaces	18:26:43.781 Question 1 (Adjective Sorting) Started. Figure 4.12d Report: start and end time

4.3.8.2 Question-specific information

The report displays the following information for each of the respective questions: every change and sorting a user made during the completion of this question (4.3.8.2.1), the time a musical track started and ended and all the selections made while using the multi interface window (4.3.8.2.2), the complete free description of the user as it was typed during the completion of Question 3 (4.3.8.2.3) and the selection of numbers and changes to the rating scales of Question 4 in real-time (4.3.8.2.4). Examples are shown in the following paragraphs.

4.3.8.2.1 Changes and sorting

The report indicates how the user selected and moved the words (Figure 4.13a), created and deleted categories, and all modifications made to categories and titles. The time each modification was made is displayed in hours, minutes, seconds and milliseconds (Figure

4.13b-e). The report also displays all categories the user constructed before continuing to Question 2 (Figure 4.13f).

Figure 4.13 Report: word sorting

18:32:11.953 Words moved from Word Pool to puddle 0(Unknown?).

Zest
Zeal
Woe

Figure 4.13a

18:34:42.781 Words moved from Word Pool to New Puddle 3(New Puddle)

Irritation
Grumpiness
Grouchiness

Figure 4.13b

18:36:40.515 Created new puddle (empty).

Figure 4.13c

19:03:35.375 Deleted puddle 21.

Figure 4.13d

19:04:31.125 Set title of puddle 22 to Surprise.

Figure 4.13e

Unknown?	Apprehension
	Dejection
	Elation
	Euphoria
	Exasperation
	Rapture
	Woe
	Zeal
	Zest
Not emotion!	Enjoyment
	Pleasure
Affection	Adoration
	Affection
	Caring
	Compassion
	Fondness
	Infatuation
	Love
	Pity

Figure 4.13f
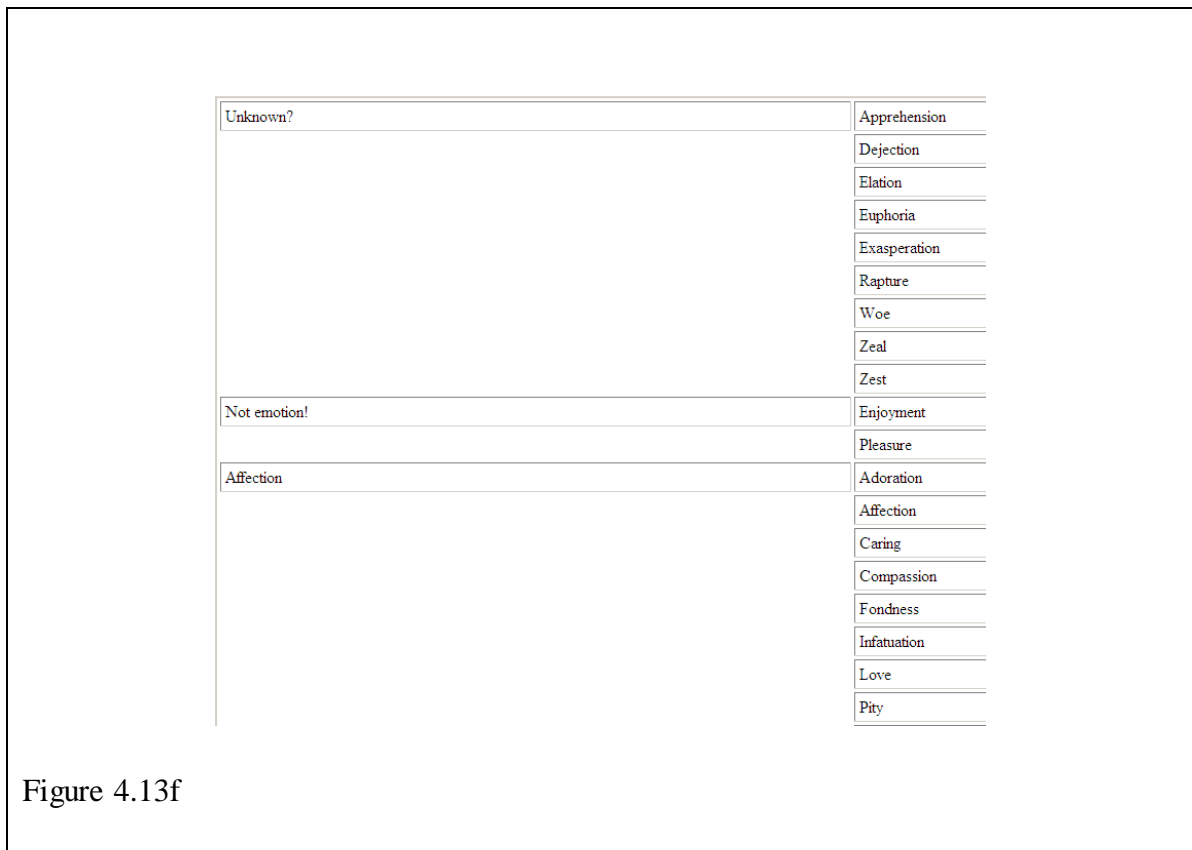
4.3.8.2.2 Multi interface and real-time responses

The report displays the time a musical track started and ended and all the selections a user made while using the multi interface window. The time at which each selection was made is displayed in hours, minutes, seconds and milliseconds. Words are displayed as they appear on screen, colours are displayed according to their RGB-value and colour name (e.g. violet 128; 0; 128), and facial expressions are displayed according to spatial location and name (e.g. upper = sadness, lower = anger) (Figure 4.14).

```
19:08:39.765 Question 2: Started. Erik Satie - Gnossiene - Sample.ogg

19:09:58.218 Added: Lavender (204,153,255)

19:09:59.515 Added: Violet (128,0,128)

19:10:03.781 Added: Face upper=Sadness lower=Neutral.

19:10:08.843 Added: Sadness

19:10:12.140 Added: Sorrow

19:10:14.156 Added: Turquoise (0,255,255)

19:10:17.203 Added: Face upper=Sadness lower=Anger.

19:11:01.890 Question 2 Checklist: Ended. Erik Satie - Gnossiene - Sample.ogg
```

Figure 4.14 Report: checklist selections

4.3.8.2.3 Free description

The complete free description of the user as it was typed during the completion of Question 3 is presented in the report as well as the time the user started and completed the question (Figure 4.15).

```
19:11:01.984 Question 3 (free description) Started.

19:13:47.140 Question 3 (free description) Completed.

It was a very sad, but beautiful piece of music.
```

Figure 4.15 Report: free descriptions

4.3.8.2.4 Rating scales

The selection of numbers and changes to the rating scales of Question 4 is presented in the report. It also indicates which scale was changed (by question number), and displays both the previous as well as new value of the scale (Figure 4.16a and b).

Figure 4.16 Report: rating scales

19:13:47.250 Question 4 (rating scales) Started.	19:16:01.796 Changed scale f.b. from -1 to 3.
19:15:12.359 Changed scale a. from -1 to 3.	19:16:01.843 Changed scale f.b. from 3 to 2.
19:15:12.359 Changed scale a. from 3 to 4.	19:16:01.906 Changed scale f.b. from 2 to 1.
19:15:13.812 Changed scale b. from -1 to 3.	19:16:04.234 Changed scale f.d. from 4 to 3.
19:15:13.812 Changed scale b. from 3 to 4.	19:16:36.687 Question 4 (rating scales) Completed.
Figure 4.16a	Figure 4.16b

4.3.9 General

The program was designed in such a way that the users cannot close the program once they have started with the questionnaire. The playlist and interfaces cannot be modified during the completion of the questionnaire; neither can users return to a question once they have continued with the questionnaire. The word sorting and word categories only remain in that manner for one session; once the user has logged out of the program and wants to start again at a later stage, the words need to be sorted into new categories again. Please view the Addendum for program specifications. It is recommended that the reader completes the demonstration version of Ponto Vista provided on the compact disc that is included with this report.

4.4 TIME LINE AND DEVELOPMENT STAGES

The research proposal for this project was submitted and approved in October 2007. In that same period a lecturer at the School for Engineering, North West University was consulted on the possibility of computerising the questionnaire. His recommendation of a few engineering students was taken into consideration and a programmer was appointed in February 2008.

Although the programmer specialised in writing source codes in the Java Programming Language, there were certain aspects to the requirements for Ponto Vista which he was not familiar with. Thus a great amount of time on the programmer's side was spent on research into these matters.

The concept for the questionnaire was derived from a previous project; however, some of the specific studies which the questionnaire was based upon still needed to be established. The words were decided on in March 2008, the facial expressions were chosen in May 2008, and the colours were selected in August 2008. Most of the other aspects, research and questions were already in place at the commencement of the project.

Numerous meetings on concept discussions, improvements, user-friendliness and other additions to the program were held by the design team during the development of Ponto Vista. Although the program doesn't comply with commercial standards, it is entirely functional and suitable to this project; it met the specifications and requirement set by the researcher.

Figures 4.17a and 4.17b represents the various development stages of Ponto Vista.

Version	Log in	Navigation controls	Ponto Vista graphics	Correct visual display	Play list editor	Introduction window	Q1: drag / drop	Q1: +/- words	Q1: number of categories	Q1: Shift/Ctrl selection	Q1: rename categories	Q1: add/remove categories	Warning/ compliance screens
May 2008	✖	✖	✖	✖	✖	✖	✔	✖	incomplete	incomplete	✖	✖	✖
July 2008	✖	✖	✖	incomplete	✖	✖	✔	✖	incomplete	✖	incomplete	✔	✖
August 2008	incomplete	incomplete	✖	incomplete	✖	incomplete	✔	✖	incomplete	✖	incomplete	✔	✖
October 2008 (1)	✔	incomplete	✖	incomplete	✖	incomplete	✖	incomplete	incomplete	✔	✔	✔	✖
October 2008 (2)	✔	incomplete	✖	incomplete	✖	incomplete	✔	✔	✔	✔	✔	✔	incomplete
Nov 2008 (1)	✔	✔	incomplete	incomplete	✖	incomplete	✔	✔	✔	✔	✔	✔	✔
Nov 2008 (2)	✔	✔	incomplete	incomplete	✖	incomplete	✔	✔	✔	✔	✔	✔	✔
February 2009	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔	✔	✔
May 2009	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

Figure 4.17a Development stages

Version	Total progress window	Loading window for Q2	Q2: words and drop-down	Q2: colours	Q2: facial expressions	Q2: timer	Q2: selection panel	Q3: typing window	Q4: rating scales	Q4: slide/drag-and-drop sliders	Q4: red background	Farewell window and log off	Report
May 2008	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
July 2008	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
August 2008	incomplete	incomplete	✗	✗	✗	✗	✗	incomplete	✗	✗	✗	incomplete	✗
October 2008 (1)	✓	✓	✓	✓	✓	✓	✓	✓	incomplete	✓	✗	✗	✗
October 2008 (2)	✓	✓	✓	✓	✓	✓	✓	✓	incomplete	✓	✗	✗	✗
Nov 2008 (1)	✓	✓	✓	✓	Faulty display	✓	✓	✓	Only 4f incomplete	✓	✓	✓	✗
Nov 2008 (2)	✓	✓	✓	✓	✓	✓	✓	✓	Only 4f incomplete	✓	✓	✓	incomplete
February 2009	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	incomplete
May 2009	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Figure 4.17b Development stages

4.5 SUMMARY

This overview provided a detailed functionality description of the computerised questionnaire, Ponto Vista. It contained a description of all the different windows, instructions, visual indicators and their functionality, a description of the report created by Ponto Vista at the end of each session, and other general information about the program, as well as a time line and development stages of Ponto Vista. Each description was accompanied by figures that consisted of screen shots taken from a demonstration version of the program or report to inform the reader. The next chapter will present the results of this empirical study.

The researcher would like to express gratitude to Jaco Schutte and Osmund Francis for their assistance in writing this chapter.

Credits - PontoVista.

Creative design – Mari Louise Schutte *née* Steinberg

Supervisor – Hannes Taljaard

Program design and implementation – Osmund Francis

Conceptual design – Jaco Schutte

Graphic design – Polar Design Solutions