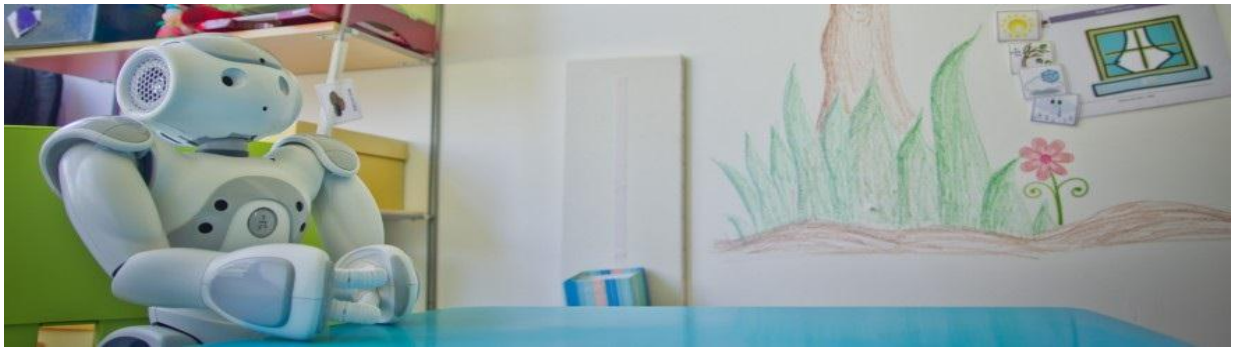

emote

Tutor's empathic behaviour and dialogue generation engine

Work package	Data repository (WP5)	
Task	Task 5.2	
Dissemination Level	Public	
Publishing date	Contractual M18	Actual
Deliverable	D5.2	
WP / Task responsible	INESC-ID	
Contact person	Ana Paiva, INESC-ID	
Contributors	INESC-ID, HWU, JacobsUni, UoB, UGOT	
Short abstract	This report describes the initial data collection activities for empathic interaction and provides a release of the project's data in a publicly available repository.	
Keywords	Data repository, data collection design	
Documents	Deliverable 5.2	

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YDREAMS ROBOTICS

Contents

Executive summary

This document presents the initial work regarding data collection design developed for the creation of the behaviour of a robotic empathic tutor and dialogue generation engine. The present document relates to Work Package (WP) 5 and serves the purposes of the EMOTE project addressing especially Deliverable 5.2 (D5.2). This deliverable will then describe the initial data collection activities conducted by the various partners of the EMOTE project. We also provide details of the project's overall data and the conditions of its release. Future studies to inform the robotic tutor are also included and described. Task 5.2 is the main core of D5.2, which addresses the following objective:

- Data collection and annotating human-human interactions from the Wizard-of-Oz (WoZ) data with the expert tutor being the wizard. These data will be used to train the simulations and the interaction strategies.

Note that the design of the WoZ studies was performed with input from psychological and educational specialists in order to structure the interaction to elicit a wide range of learner's expressions.

Introduction

The aim of the EMOTE project is to design, develop and evaluate a new generation of artificial embodied tutors that have perceptive capabilities to engage in empathic interactions with learners in a shared physical space. Towards this goal, initial data collection studies were designed and conducted gathering preliminary results that will in turn inform the behaviour of the artificial tutor.

Data collection design

In order to inform and create the behaviour for the robotic tutor, studies were conducted and developed. These studies comprised a variety of activities involving teachers and learners (see **Fig. 1**), with each study having a specific goal informing certain aspects of the tutor behaviour creation. The study goals include:

- The design of the learning technology and learning scenarios of the project (D2.1);
- The validation of the corpus of non-verbal acoustical emblems for the development of models of socio-emotional bonding for learning facilitation (D3.2);
- To inform the development of the tutor's perception of the learner and learner models that integrate behavioural and contextual information as part of the development for the tutor's perception and modelling of the learner (D4.1);
- Future studies are planned to meet the upcoming objectives of the project.

Several of the data collection studies were conducted to address aspects that are transversal to the different goals established for the development of the robot behaviour and evaluation measures, which we have designated as Related Studies (**Fig. 2**). However, data collection studies were also designed according to the two different scenarios of the EMOTE project, aligning curriculum outcomes and tasks to foster cognitive skills and deepen learning. Scenario 1 is a map reading activity scenario and is considered to be an individual learning scenario in which adaptive support to an individual student will be performed by the robotic tutor. On the other hand, Scenario 2 is based on Enercities, an online game that teaches sustainable development. The original online single player game was adapted to a multiplayer version (3 players), transforming it into a collaborative learning game to stimulate collaborative learning where students can interact with an empathic robotic agent during the game. In both scenarios a multi-touch table is used as the learning tool. Note that all data is anonymised and extreme care is taken that data is only released if there is an appropriate consent in place.

ID	Name of Study	Scenario	Audi	Video	Face Data	Kinect	Physiol. Data	Questionn.	Task Data
A.1	Initial Informal Pilot Interviews	both	X	X					
A.2	Interviews with Teachers	both	X						
A.3	Pedagogical Strategies Adaptation	S1	X	X					
A.4	Influence of Positioning in Learning	S1	X	X					
A.5	Human-Human Collaborative Context	S2	X	X				X	X
A.6	Investigation of Embodiment and Open Learner Model	S1	X	X				X	X
A.7	WoZ Study with a Teacher being a Wizard	S1	X	X	X	X	X	X	X
A.8	Human-Human Data Collection	S2	X	X				X	
A.9	WoZ to inform on Autonomous Behavior	S2	X	X		X		X	X
A.10	Migration Experiment with a Tablet-based Treasure Hunt Activity	S1						X	X

Figure 1. Scenario specific studies.

ID	Name of Study	Audio	Video	Face Data	Kinect	Physiol. Data	Questionn.	Task Data
B.1	Q-Sensor Validation Study 1A	X	X			X		
B.2	Q-Sensor Validation Study 1B	X	X			X		
B.3	Engagement Pilot Study	X	X		X	X	X	X
B.4	Judgement Study: Online vs. Web Study 1	X					X	
B.5	Judgement Study: Online vs. Web Study 2	X					X	
B.6	Perception of Emotions in Humans vs. Artificial Agents					X	X	
B.7	Validation study for 2 types of Empatica wrist-based sensors	X	X			X	X	
B.8	Crowdsourced study 1 on Perception of Emotional Sounds	X					X	
B.9	Crowdsourced study 2 on Perception of Emotional Sounds	X					X	
B.10	Crowdsourced study 3 on Perception of Emotional Sounds	X					X	
B.11	Crowdsourced study on Perception of Embodied Sounds	X	X				X	
B.12	Judgement Study 1: Sound in Context (Short Stories)	X					X	
B.13	Judgement Study 1: Sound in Context (NAO Body Postures)						X	
B.14	School Focus Group						X	
B.15	Experimental Study having Naive Participants to Create Affective Loaded Synthetic Sounds	X					X	
B.16	Experimental Study to Investigate Robot vs. Human for Instructions		X				X	
B.17	Pilot Study Fears and Expectations Focus Group Interviews with Teachers	X					X	
B.18	Study Fears and Expectations Focus Group Interviews with Teachers	X					X	

Figure 2. Related Studies.

Glossary and Terms

EDA	Electro-dermal activity
Face Data	Data regarding facial expression
HR	Heart rate
H-H	Human-Human
H-R	Human-Robot
OLM	Open Learner Model
Physiol. Data	Various types of physiological data
Questionn.	Questionnaires
Task Data	Data related to task execution (game/application logs)
TBD	To Be Defined
WoZ	Wizard-of-Oz

Data repository

Access guidelines

The collected data are publicly released as an important deliverable of the project. The website http://www.emote-project.eu/data-collection/ has an overview of the data that is available. On this website there is a form that interested parties can fill and submit in order to request access to the data. This way the consortium can keep track of who has data access.

Dataset Descriptions

A. Scenarios Studies

A.1. Initial Informal Pilot Interviews

Collection ID:	A.1
Partner(s):	UGOT
Location:	Sweden
Context:	Scenarios studies in general.
Type:	Interview.
Language:	The original interview is in Swedish but it has partially been translated to English.
Dates:	19/02/2013
Duration:	3 sessions, 30min each.
Longitudinal:	No.
Aim of Study:	Based on the general analysis of the syllabi and the possible showcase for the two scenarios, initial informal pilot interviews with teachers were held. These interviews provided a general sense of possible activities within geography and sustainable development, based on the type of learning that is perceived as important in the modern classroom, namely authentic learning where students can relate the content of the learning situation to their everyday life. Based on the interviews, it was concluded that both an individual as well as a collaborative tasks where two or more students can participate, would be necessary.
Participant Information:	3 teachers.
Medium of Data:	Audio
Experimental Set Up:	Semi-structured interview
Transcribed:	No.
Annotation / Coding Scheme:	No.
Restrictions making publicly available:	Video/audio available to share for 2 participants.

A.2. Interviews with Teachers

Collection ID:	A.2
Partner(s):	INESC-ID, UGOT, UoB, HWU
Location:	Portugal, Sweden, England, Scotland.
Context:	Scenarios studies in general.
Type:	Interviews.
Language:	Portuguese, Swedish, English.
Dates:	01/05/13 and 19/03/2013.
Duration:	30 min per interview.
Longitudinal:	No.
Aim of Study:	The semi- and structured interviews with teachers were conducted to receive teachers' input concerning difficulty levels regarding geography-related tasks, back-stories for the scenarios, and to understand their views on the use of empathic robotic tutors in the classroom.
Participant Information:	18 teachers interviewed.
Medium of Data:	Audio.
Experimental Set Up:	Structured interview.
Transcribed:	Yes.
Annotation / Coding Scheme:	No.

A.3. Pedagogical Strategies Adaption

Collection ID:	A.3
Partner(s):	UGOT, UoB.
Location:	Sweden and England.
Context:	Scenarios studies specifically for Scenario 1.
Type:	Mock-up study with teachers.
Language:	Swedish and English.
Dates:	07/05/2013 and 20/05/2013.
Duration:	5 sessions, 30 min per session.
Longitudinal:	No.
Aim of Study:	Study how teachers adapt their pedagogical strategies in a learning situation to respond to students' needs. A side aim was to determine the teachers' and students' general use of eye-gaze during the activity.
Participant Information:	2 teachers and 3 students (UK) and 1 teacher and 2 students (Sweden).
Medium of Data:	Audio and video record.
Experimental Set Up:	As it was an individual activity scenario, each session was held with one student and one teacher and concerned a map reading activity. The sessions were filmed, transcribed, and annotated.
Transcribed:	Yes.
Annotation / Coding Scheme:	Yes.
Restrictions making publicly available:	Restricted.

A.4. Influence of Positioning in Learning

Collection ID:	A.4
Partner(s):	UGOT
Location:	Sweden
Context:	Scenarios studies specifically for Scenario 1.
Type:	Mock-up study.
Language:	English.
Dates:	16/10/2013 and 17/10/2013.
Duration:	12 sessions, 20min per session.
Longitudinal:	No.
Aim of Study:	This mock-up study had a threefold purpose: 1. To test the scenario with teachers and students in order to adapt it in terms of technical design and appropriate difficulty levels; 2. To gather utterances and behavioural data from the teachers and students in order to adapt the robotic tutor's perceptive capabilities as well as pedagogical approach; 3. To test the influence of the positioning of the tutor and the student in relation to each other (at two sides of the table opposite each other, or two adjacent sides) concerning its potential effect on engagement.
Participant Information:	2 teachers and 12 students.
Medium of Data:	Audio and video.
Experimental Set Up:	A simplified paper-based version of the final version of Scenario 1 was performed in 12 separate sessions comprising one-to-one interaction between a student and a teacher. In contrast to the first mock-ups, the participants were seated. The location of the map was the local area around the participants' school. Half of the students were placed on the teacher's right side and half in front of the teacher.
Transcribed:	Yes.
Annotation / Coding Scheme:	Yes.
Restrictions making publicly available:	Restricted/not available.

A.5. Human-Human Collaborative Context

Collection ID:	A.5
Partner(s):	INESC-ID
Location:	Maristas School, Lisbon.
Context:	Scenarios studies specifically for Scenario 2.
Type:	H-H.
Language:	Portuguese.
Dates:	06/11/13 to 08/11/13.
Duration:	3 days, 12 sessions. Each session lasted 1 hour.
Longitudinal:	No.
Aim of Study:	Test the interaction and gameplay between players.
Participant Information:	31 participants. 1 teacher and 30 students. Students' mean age = 14 years old.
Medium of Data:	Video data from 3 angles (3 cameras). 3 Lavaliere microphones. 1 audio recorder. 1 multi-touch table. Questionnaire for students about the game and questionnaire for the teacher about the perception of collaboration between players. Interviews.
Experimental Set Up:	Participants were divided into two experimental conditions: Condition 1: One teacher played the Enercities game with two students; and Condition 2: Three students played Enercities game. When playing the C1 the teacher was instructed to play the major role and the two other roles (environmentalist and economist) were raffled among the students. When playing C2 the three roles were raffled; According to the assigned roles, the participants were positioned around the multi-touch table in pre-designated areas; Instructions were given in a tutorial format; Subjects played Enercities for 20 minutes; After playing Enercities the teacher and students were individually interviewed and answered an individual questionnaire about the collaborative game.
Transcribed:	Yes.
Annotation / Coding Scheme:	Translated and transcribed into English. Eye-gaze behaviour annotation (gazing task, gazing participants, and gazing elsewhere).
Restrictions making publicly available:	Restrictions of two kinds according to parents' consent: 1) Can only be used for Emote researchers; 2) Can also be used in scientific papers, conferences and

events. Sometimes parents consented these two usages, others times parents restricted giving consent only for 1).

A.6. Investigation of Embodiment and Open Learner Model

Collection ID:	A.6
Partner(s):	UoB
Location:	Various UK Schools.
Context:	Scenarios studies specifically for Scenario 1.
Type:	H-R and H-C
Language:	English
Dates:	December 2013 - May 2014.
Duration:	50 sessions each lasting 5 minutes.
Longitudinal:	No.
Aim of Study:	Compare scenarios with differing levels of embodiment in conjunction with Open Learner Model (OLM).
Participant Information:	50 students.
Medium of Data:	Video data from 3 angles. Task data. Questionnaires (Enjoyment/Trust/Perception of skills).
Experimental Set Up:	The purpose of this study was to compare the learner's perception of a learner model when various levels of robotic support are employed. The learner is asked to place a symbol on a map at a certain distance and direction from the start point (the learner's school). After each step the learner is presented with the OLM and an explanation of how that model is changing. The learner has the option to open a map key, use a distance tool, and display a compass on screen. The theory being that if the learner has difficulty with a particular skill they can utilise these tools to address the issue. The conditions considered in the study are as follows: 1. OLM and explanation on screen. OLM is presented as a set of skill meters on screen, the explanation is text. This is a traditional tutoring or e-learning environment. 2. OLM on screen but explanation given by robot. OLM is presented as a set of skill meters on screen but the robot delivers the explanation. This reflects how a teacher would support a learner using the system. 3. OLM and explanation given by robot. There is no OLM on screen but the robot uses speech to explain the current skill levels and how they have changed.
Transcribed:	No.
Annotation / Coding Scheme:	No.

Restrictions making publicly available:	Restrictions of two kinds accordingly to parent's consent: 1) Can only be used for emote researchers; 2) Can also be used in scientific papers, conferences and events. Sometimes parents consented these two usages, others times parents restricted giving consent only for 1).

A.7. WoZ Study with a Teacher being a Wizard

Collection ID:	A.7
Partner(s):	UoB
Location:	Arthur Terry School in Birmingham.
Context:	Scenarios studies specifically for Scenario 1.
Type:	H-R and H-C
Language:	English.
Dates:	07/04/2014 to 09/04/2014.
Duration:	3 days. Each session lasted 30 minutes.
Longitudinal:	No.
Aim of Study:	Development of a computational framework for the tutor's perception of the learner and learner models that integrates behavioural and contextual information.
Participant Information:	20 participants from 7th grade.
Medium of Data:	Video data from 3 angles. 2 camcorders from different angles. Pre- and post-questionnaires. Q-sensor. Kinect data. OKAO data. Task event logs.
Experimental Set Up:	Students were asked to complete a small questionnaire before the study (empathic scale) while they were told to wear the Q-sensor to warm it up. After the questionnaire, users were explained the task and left alone. A teacher that was controlling the robot and helping the students when needed performed as the Wizard. At the end of the study students were asked to complete a questionnaire form.
Transcribed:	No.
Annotation / Coding Scheme:	TBD.
Restrictions making publicly available:	Restrictions: can only be used for used in scientific papers, conferences and events.

A.8. Human-Human Data Collection

Collection ID:	A.8
Partner(s):	HWU
Location:	Edinburgh Academy School, Edinburgh, Scotland.
Context:	Scenarios studies specifically for Scenario 2.
Type:	H-H.
Language:	English.
Dates:	28/01/14 and 04/02/2014.
Duration:	2 days. Each session lasted 20 minutes.
Longitudinal:	No.
Aim of Study:	Get audio and video data of the interaction between players while playing the Enercities game. Understand expectations that children have regarding social robots in two particular contexts: a futuristic classroom and in their personal home space. Obtain learning gain metrics.
Participant Information:	3 teachers and 10 students aged between 11-13 years old.
Medium of Data:	Video and audio of each participant. Pre- and post-questionnaires. Interviews.
Experimental Set Up:	Participants were given a brief tutorial on how to play the Enercities game on an 18" tablet. Each recorded session was 20 minutes long with one teacher and two pupils playing the game. Questionnaires were given to the teachers. Students were interviewed regarding their experience and attitudes to the technology. Pre- and post-test questionnaires were given to measure learning gain of students.
Transcribed:	Yes.
Annotation / Coding Scheme:	Questionnaire response coding. Dialogue and video annotation planned.
Restrictions making publicly available:	Restrictions: can only be used for used in scientific papers, conferences and events.

A.9. WoZ to inform on Autonomous Behaviour

Collection ID:	A.9
Partner(s):	INESC-ID
Location:	Maristas School, Lisbon.
Context:	Planned studies specifically for Scenario 2.
Type:	WoZ.
Language:	Portuguese.
Dates:	Planned for July 2014.
Duration:	TBD
Longitudinal:	No
Brief Description:	This study will serve to inform in terms of technical set up and gameplay for the WoZ study to be performed in September 2014 regarding scenario 2.
Aim of Study:	Taking into account the limitations of technology, this WoZ will be adapted to the perceptive limitations of current computational systems in order to inspire the design of autonomous behaviour in interactive agents. Therefore, the Wizard will be deaf (i.e., the Wizard will have no access to the interaction in terms of sound) and blind (the Wizard will not have access to visual data of the interaction) so that the real capacities of the robot can be replicated and studied. Instead, the Wizard will have access only to a real-time image capture of the game screen, and to the outputs of the Perception modules from WP4.
Participant Information:	TBD
Medium of Data:	Video and audio recorded. Tasks logs registered.
Experimental Set Up:	TBD
Transcribed:	TBD
Annotation / Coding Scheme:	TBD
Restrictions making publicly available:	TBD

A.10. Migration Experiment with a Tablet-based Treasure Hunt Activity

Collection ID:	A.10
Partner(s):	HWU
Location:	Edinburgh Academy School, Edinburgh, Scotland.
Context:	Planned studies specifically for Scenario 1.
Type:	H-C and H-R.
Language:	English.
Dates:	Planned for 23/06/14.
Duration:	One morning, sessions approximately 1 hour.
Longitudinal:	No.
Aim of Study:	A tablet-based treasure hunt with robot giving introductions in the school and a virtual version on the tablet to provide additional help. The aim is to test if feedback type (neutral vs affective) affects engagement, task success. Test migration: do pupils in the affective feedback condition identify the virtual character more with the robot that introduced the task. This study is related with scenario 1.
Participant Information:	TBD.
Medium of Data:	Questionnaire and quantitative metrics (e.g. clicks, gps). Some videoing but not for data collection purposes.
Experimental Set Up:	Three conditions: 1) No feedback, 2) Neutral feedback, 3) and Affective feedback. A robot with affective feedback dialogue behaviour will introduce the task in the school. One group of pupils will do a paper based version (with no feedback), the rest will use a tablet based version of the treasure hunt with an animated robot character that helps them along. Of the tablet-using group, one half will interact with a virtual character that presents feedback in a neutral manner and the other half with a virtual character that presents affective feedback.
Transcribed:	TBD
Annotation / Coding Scheme:	TBD
Restrictions making publicly available:	TBD

B. Related studies

B.1. Q-Sensor Validation Study 1A

Collection ID:	B.1
Partner(s):	JacobsUni
Location:	Jacobs University, Bremen.
Context:	Related studies.
Type:	Q-Sensor Validation Study 1 (Psychophysiology)
Language:	English.
Dates:	Spring 2013.
Duration:	45 minutes.
Longitudinal:	No.
Aim of Study:	A validation study of the Affectiva Q-Sensor in different social laboratory situations. Comparison and evaluation of results obtained for physiological responses with the Affective Q-Sensor vs. established laboratory measures (BIOPAC).
Participant Information:	33 University students at JACOBSUNI.
Medium of Data:	Audio. Video. Physiological Data (EDA).
Experimental Set Up:	Participants were exposed to a set of elicitors, such as IAPS pictures, film clips, responses to white noise, an unexpected noise in the room, and a social game. EDA was assessed using a Q-Sensor and traditional finger-electrodes placed contralaterally.
Transcribed:	No.
Annotation / Coding Scheme:	No.
Restrictions making publicly available:	No restrictions.

B.2. Q-Sensor Validation Study 1B

Collection ID:	B.2
Partner(s):	JacobsUni
Location:	Jacobs University, Bremen
Context:	Related studies.
Type:	Q-Sensor Validation Study 1 (Psychophysiology)
Language:	English.
Dates:	Spring 2013.
Duration:	45 minutes.
Longitudinal:	No.
Aim of Study:	Re-test reliability study based on the first Q-Sensor Study
Participant Information:	30 University students at JACOBSUNI
Medium of Data:	Audio, Video, Physiological Data (EDA)
Experimental Set Up:	Identical to Q-Sensor Validation study 1: Participants were exposed to a set of elicitors, such as IAPS pictures, film clips, responses to white noise, an unexpected noise in the room, and a social game. EDA was assessed using a Q-Sensor and traditional finger-electrodes placed contralaterally.
Transcribed:	No.
Annotation / Coding Scheme:	No.
Restrictions making publicly available:	No restrictions.

B.3. Engagement Pilot Study

Collection ID:	B.3
Partner(s):	UoB
Location:	UoB University
Context:	Related studies.
Type:	H-R and H-C.
Language:	English.
Dates:	25/11/2013 to 06/12/2014.
Duration:	Total duration of 2 weeks. Each session lasted 30 minutes.
Longitudinal:	No.
Aim of Study:	Pilot study for data collection.
Participant Information:	86 participants.
Medium of Data:	Video data from 3 angles. 2 camcorders from different angles. Pre- and post-questionnaires. Q-sensor. Kinect data. Task event logs.
Experimental Set Up:	Participants were divided in two groups, representing the two conditions in the study, i.e., engaging and non-engaging. Participants from both groups are then divided again into two further groups, here; half perform task one followed by task two, and the other half perform the tasks in the opposite order. This ensures the ordering of the tasks does not bias the data we collected. Furthermore, the user is not introduced to the robot until the third and final task involving the human-robot-task experiment; this is to prevent biasing the social relationship with the robot
Transcribed:	No.
Annotation / Coding Scheme:	TBD.
Restrictions making publicly available:	Restrictions: can only be used for used in scientific papers, conferences and events.

B.4. Judgement Study: Online vs. Web Study 1

Collection ID:	B.4
Partner(s):	JacobsUni
Location:	Jacobs University, Bremen.
Context:	Related studies.
Type:	H-C.
Language:	English.
Dates:	01/01/14 to 01/03/14.
Duration:	About 30 minutes.
Longitudinal:	No.
Aim of Study:	Comparison of sound evaluation on a set of 20 simple sounds between lab vs. online modes of presentation. We aimed to determine if sound evaluations for the main D3.2 studies could be performed online with similar accuracy.
Participant Information:	52 participants (27 laboratory, 25 online participants).
Medium of Data:	Audio. Computer-based questionnaire data.
Experimental Set Up:	Participants completed the study either in the laboratory (using quality headphones) or at home.
Transcribed:	No.
Annotation / Coding Scheme:	No.
Restrictions making publicly available:	No restrictions.

B.5. Judgement Study: Online vs. Web Study 2

Collection ID:	B.5
Partner(s):	JacobsUni
Location:	Jacobs University, Bremen.
Context:	Related studies.
Type:	H-C.
Language:	English.
Dates:	01/02/14 to 01/03/14.
Duration:	About 30 minutes.
Longitudinal:	No.
Brief Description:	Comparison of sound evaluation in the laboratory vs. online for the Belpaeme data set (90 sounds).
Aim of Study:	Comparison of sounds from an existing corpus between online vs. lab modes of presentation of the sounds. As in the first online vs. web study, the main aim of this study was to investigate possible differences in evaluations related to the mode of presentation and the more general question if online sound evaluations are reliable enough for the main D3.2 sound corpus evaluations.
Participant Information:	84 participants (26 laboratory, 30 online with headphones, 28 online using speakers).
Medium of Data:	Audio. Computer-based questionnaire data.
Experimental Set Up:	Participants completed the study either in the laboratory or at home (online). For online participants, headphone vs. speaker conditions were distinguished.
Transcribed:	No.
Annotation / Coding Scheme:	No.
Restrictions making publicly available:	No restrictions.

B.6. Perception of Emotions in Humans vs. Artificial Agents

Collection ID:	B.6
Partner(s):	JacobsUni
Location:	Jacobs University, Bremen.
Context:	Related studies
Type:	Pre-Study.
Language:	English.
Dates:	17/02/14 to 10/03/14.
Duration:	34 subjects (In-Lab Study).
Longitudinal:	No.
Aim of Study:	Understand similarities and differences between emotional responses to human stimuli and artificial agent stimuli.
Participant Information:	34 University students at Jacobs University
Medium of Data:	Physiological data (facial EMG and skin conductance).
Questionnaire data.	
Experimental Set Up:	This study focuses on physiological responses to the presentation of human and artificial entity stimuli and how trait empathy impacts responses. Images of humans and robots, toys and CGI characters, were selected in a first study from a set of N=190, by 46 participants, and vignettes selected in a second study from a set of N=52, by 57 participants. A third study paired the images with associated vignettes with 56 participants, creating a collection of 24 images and vignettes (12 human, 12 artificial) with equivalent intensity ratings of the primary emotions anger, sadness and happiness, and the secondary emotion pride. In the main study, 34 participants were presented with the 24 stimuli while we recorded facial EMG (Corrugator Supercilii, Zygomaticus Major), and skin conductance. The task of the participants was to simply observe the stimuli. Additionally, the Interpersonal Reactivity Index was completed.
Transcribed:	No.
Annotation / Coding Scheme:	No.
Restrictions making publicly available:	No restrictions.

B.7. Validation study for 2 types of Empatica wrist-based sensors

Collection ID:	B.7
Partner(s):	JacobsUni
Location:	Jacobs University, Bremen.
Context:	Related studies.
Type:	Empatica Validation Study (Psychophysiology).
Language:	English.
Dates:	01/03/14 to 31/03/14.
Duration:	About 30 minutes.
Longitudinal:	No.
Aim of Study:	Comparison of results of two new types of wrist-based physiology sensors (Empatica) with previous results.
Participant Information:	20 university students at Jacobs University.
Medium of Data:	Audio. Video. Questionnaire data. Basic physiological data.
Experimental Set Up:	Participants were exposed to a set of elicitors, such as IAPS pictures, film clips, and white noise. EDA and HR were assessed using 2 variants of the new Empatica sensors placed contralaterally
Transcribed:	No.
Annotation / Coding Scheme:	No.
Restrictions making publicly available:	No restrictions.

B.8. Crowdsourced study 1 on Perception of Emotional Sounds

Collection ID:	B.8
Partner(s):	JacobsUni
Location:	Jacobs University, Bremen.
Context:	Related studies
Type:	Main Judgement Study 1 (AG-BEST).
Language:	English.
Dates:	01/04/14 to 01/05/14.
Duration:	30-40 minutes per sound set.
Longitudinal:	No.
Aim of Study:	Online study (Crowdflower) for the evaluation of 228 emotional sounds with the Affect Grid (AG).
Participant Information:	40 subjects x 3 data sets; 120 judgements collected via Crowdflower (online study); multiple participations were possible.
Medium of Data:	228 emotional sounds. Questionnaire data for discrete emotions and grid rating ("Affect Grid) for dimensional emotions.
Experimental Set Up:	This set of studies was used to obtain dimensional evaluations of the D3.2 corpus of emotional sounds. The studies were presented online (Unipark) with a digital version of the Affect Grid Matrix assess valence and arousal of all sounds via a matrix.
Transcribed:	No.
Annotation / Coding Scheme:	No.
Restrictions making publicly available:	The sound set will be made publically available upon request.

B.9. Crowdsourced study 2 on Perception of Emotional Sounds

Collection ID:	B.9
Partner(s):	JacobsUni
Location:	Jacobs University, Bremen.
Context:	Related studies.
Type:	Main Judgement Study 2 (DES-BEST).
Language:	English.
Dates:	01/04/14 to 01/05/14.
Duration:	30-40 minutes per sound set.
Longitudinal:	No.
Aim of Study:	Online study (Crowdflower) for the evaluation of 228 emotional sounds with the Differential Emotions Scale (DES).
Participant Information:	40 subjects x 6 data sets; 240 judgements collected via Crowdflower (online study); multiple participations were possible.
Medium of Data:	228 emotional sounds.
Experimental Set Up:	This set of studies was used to obtain evaluations of discrete emotional states of the D3.2 corpus of emotional sounds. The studies were presented online (Unipark) with a digital version Izard's Differential Emotions Scale to assess evaluations of the sounds for the 10 discrete emotions.
Transcribed:	No.
Annotation / Coding Scheme:	No.
Restrictions making publicly available:	The sound set will be made publically available upon request.

B.10. Crowdsourced study 3 on Perception of Emotional Sounds

Collection ID:	B.10
Partner(s):	JacobsUni
Location:	Jacobs University, Bremen.
Context:	Related studies.
Type:	Main Judgement Study 3 (SPA-BEST).
Language:	English.
Dates:	01/04/14 to 01/05/14.
Duration:	30-40 minutes per sound set.
Longitudinal:	No.
Aim of Study:	Online study (Crowdflower) for the evaluation of 170 sounds for speech acts (SPA).
Participant Information:	40 subjects x 2 data sets; 80 judgements collected via Crowdflower (online study); multiple participations were possible.
Medium of Data:	170 sounds for speech acts.
Experimental Set Up:	This set of studies collected judgments on the perception of Speech Acts. All of these studies were collected online.
Transcribed:	No.
Annotation / Coding Scheme:	No.
Restrictions making publicly available:	The sound set will be made publically available upon request.

B.11. Crowdsourced study on Perception of Embodied Sounds

Collection ID:	B.11
Partner(s):	JacobsUni
Location:	Jacobs University Bremen.
Context:	Related studies.
Type:	Judgement Study: Embodied Sounds 1.
Language:	English.
Dates:	01/04/14 to 01/05/14.
Duration:	60 subjects.
Longitudinal:	No.
Aim of Study:	Preliminary study aiming to investigate the impact of making vs. breaking eye contact when an emotional sound is presented to the participant. A virtual model of the EMYS head was used for this study (additional conditions include the NAO but these have not been conducted yet). This was an online study (Crowdflower).
Participant Information:	60 online participants.
Medium of Data:	Audio. Video. Computer-based questionnaires data.
Experimental Set Up:	Participants were presented with short video clips in which the virtual EMYS either made or broke eye-contact when making the sound.
Transcribed:	No.
Annotation / Coding Scheme:	No.
Restrictions making publicly available:	No restrictions.

B.12. Judgement Study 1: Sound in Context (Short Stories)

Collection ID:	B.12
Partner(s):	JacobsUni
Location:	Jacobs University, Bremen.
Context:	Planned studies.
Type:	Judgement Study: Sound in Context 1 (Short Stories).
Language:	English.
Dates:	Planned for 20/09/14 to 20/11/14.
Duration:	40 subjects.
Longitudinal:	No.
Brief Description:	Experimental Study: pairing sounds and short stories together.
Aim of Study:	Understanding how participants attribute an affective meaning when congruent and incongruent stimuli are presented simultaneously.
Participant Information:	40 University students at JacobsUni.
Medium of Data:	Audio. Computer-based Questionnaires.
Experimental Set Up:	Ten participants are assigned to the 'control' condition, while forty are assigned to the experimental conditions. In the experimental condition 1 (full-congruence) the participants rate all the pictures paired with sounds of correspondent valence and arousal level; in the experimental condition 2 (full-discrepancy) the participants evaluate all the body postures followed by sounds that are opposed in terms of both valence and arousal; in the experimental condition 3 (arousal-congruence), the judges evaluate all the body postures coupled with sounds which share the same arousal level with the pictures, but with the opposed valence; and, the experimental condition 4 (valence-congruence), in which all the body posture images are paired with sounds which are similar in valence, but are dissimilar regarding valence.
Transcribed:	No.
Annotation / Coding Scheme:	No.
Restrictions making publicly available:	No restrictions.

B.13. Judgement Study 1: Sound in Context (NAO body postures)

Collection ID:	B.13
Partner(s):	JacobsUni
Location:	Jacobs University, Bremen.
Scenario:	Planned studies.
Type:	Judgement Study: Sound in Context 2 (NAO body postures).
Language:	English.
Dates:	Planned for 20/09/14 to 20/11/14.
Duration:	40 subjects.
Longitudinal:	No.
Brief Description:	Experimental Study: pairing sounds and pictures of NAO expressing emotional body postures together.
Aim of Study:	Understanding how participants attribute an affective meaning when congruent and incongruent stimuli are presented simultaneously.
Participant Information:	50 University students at JacobsUni (gender balanced).
Medium of Data:	Audio. Computer-based Questionnaires.
Experimental Set Up:	The audio stimulus is presented right after a short affective loaded story in all the four experimental conditions. Stimuli are presented in a modified Goodenough-Tinker Paradigm.
Transcribed:	No.
Annotation / Coding Scheme:	No.
Restrictions making publicly available:	No restrictions.

B.14. School Focus Group

Collection ID:	B.14
Partner(s):	UGOT, INESC-ID & UoB
Location:	Sweden, Portugal and England.
Context:	Planned studies.
Type:	Focus group activity children.
Language:	Swedish, Portuguese and English.
Dates:	Already done in Sweden and UK and planned for July in Portugal.
Duration:	1.5 hours per group. 7 groups with 20-30 children per group.
Longitudinal:	No.
Aim of Study:	Focus group activity to discover (ethical) fears and expectations concerning use of an empathic robotic tutor in the classroom.
Participant Information:	Sweden (75 children 5th and 9th grade). England (40 children 5th grade).
Medium of Data:	Written worksheets and questionnaire.
Experimental Set Up:	Meet the robot: Video about robot perception + video about the future with robots (ending either positive or negative). Context description in comic book format. Children have a focus group discussion in which they choose a robot for their classroom and discuss what the robot should and should not be able to do. Decisions are written on a sheet for further analysis Questionnaire about the use of robots in the classroom.
Transcribed:	TBD.
Annotation / Coding Scheme:	TBD.
Restrictions making publicly available:	Written sheets as well as questionnaire created by the children can be used.

B.15. Experimental Study having Naïve Participants to Create Affective Loaded Synthetic Sounds

Collection ID:	B.15
Partner(s):	JacobsUni
Location:	Jacobs University, Bremen.
Context:	Related studies.
Type:	Main Encoding Study.
Language:	English.
Dates:	Planned for 25/05/14 to 25/06/14.
Duration:	40 subjects.
Longitudinal:	No.
Aim of Study:	Understanding how participants with no experiences in Music Production, Sound Design, and Psychology of Emotion, create affective loaded synthetic non-speech sounds.
Participant Information:	40 University students at JACOBSUNI.
Medium of Data:	Audio. Computer-based questionnaires.
Experimental Set Up:	This study focuses on the creation of affective loaded non-speech sounds by naive encoders. The main focus is to assess whether there are statistical similarities within and between participants,
Transcribed:	No.
Annotation / Coding Scheme:	No.
Restrictions making publicly available:	No restrictions.

B.16. Experimental Study to Investigate Robot vs. Human for Instructions

Collection ID:	B.16
Partner(s):	UGOT
Location:	Leteboschool, Sweden.
Context:	Related studies.
Type:	H-H and H-R.
Language:	Swedish.
Dates:	16/05/2014 to 20/05/2014.
Duration:	26 children, 15 to 20 minutes per child.
Longitudinal:	No.
Aim of Study:	Determine difference in following instructions from a robot versus a human tutor.
Participant Information:	2 groups of children between 11-15. 13 participants per group.
Medium of Data:	Video. Questionnaire data.
Experimental Set Up:	1) NARS questionnaire + Bryant questionnaire 1 week before. 2) Following instructions to build a house from either robot or human. 3) NARS questionnaire and Task & Social Engagement questionnaire.
Transcribed:	TBD.
Annotation / Coding Scheme:	TBD.
Restrictions making publicly available:	Restrictions: can only be used for used in scientific papers, conferences and events.

B.17. Pilot Study Fears and Expectations Focus Group Interviews with Teachers

Collection ID:	B.17
Partner(s):	UGOT, INESC-ID, London Knowledge Lab (UK).
Location:	Various Swedish, Portuguese and English teachers.
Context:	Related studies.
Type:	Pilot Focus group interviews.
Language:	Swedish, Portuguese, English.
Dates:	Started on 26/11/2013 and is still on progress.
Duration:	6 teachers, two groups, 20 minutes per group in Sweden. In Portugal and in England is still TBD.
Longitudinal:	No.
Brief Description:	Focus group interviews.
Aim of Study:	Discover (ethical) fears and expectations concerning the use of an empathic robotic tutor in the classroom.
Participant Information:	The teachers involved in this activity are all in active teaching activity.
Medium of Data:	Audio. Questionnaire about use of robots in the classroom.
Experimental Set Up:	Comic book vignettes, one positive one negative. Group is divided into two small groups to discuss one vignette each.
Transcribed:	No.
Annotation / Coding Scheme:	No.
Restrictions making publicly available:	Yes, can only be used internally at UGOT, among Emote partners, and in scientific papers, conferences and events.

B.18. Study Fears and Expectations Focus Group Interviews with Teachers

Collection ID:	B.18
Partner(s):	UGOT, INESC-ID, London Knowledge Lab
Location:	Various teachers in Sweden, Portugal and England.
Context:	Planned studies.
Type:	Focus group interviews.
Language:	Swedish, Portuguese, English.
Dates:	The study already started and is still on progress.
Duration:	16 teachers in two groups plus 6 pre-service teachers in two groups (Sweden). Portuguese and England duration is still TBD.
Longitudinal:	No.
Brief Description:	Focus group interviews.
Aim of Study:	Discover (ethical) fears and expectations concerning the use of an empathic robotic tutor in the classroom.
Participant Information:	The teachers involved in this activity are all in active teaching activity or pre-service.
Medium of Data:	Audio. Questionnaire about use of robots in the classroom.
Experimental Set Up:	- Film explaining set-up of Emote and hypothetical futures with robots. One version of the film ending positively, one version ending negatively. Groups are given alternating endings; - Short questionnaire on attitudes towards the use of technology; - Scenario description; - Focus group discussion starting with choice of a robot picture; - Questionnaire about the use of robots in the classroom.
Transcribed:	No.
Annotation / Coding Scheme:	No.
Restrictions making publicly available:	Yes, can only be used internally at UGOT, among Emote partners, and in scientific papers, conferences and events.