THE EMOTIONAL EFFECTS OF COREGULATION

ABSTRACT

This project will be a study into emotional coregulation and the effects it can have an individual's emotional state when applied.

The project will require an application to be created that employs a coregulation technique and gathers the heart rate from 2 users while they complete an activity. This information will then be fed back into the program and used for further coregulation of both user's emotional state. During this activity their emotional states will be monitored and the effects of participating in the coregulation task will be displayed by the program once the task is complete.

The results of this project can then be used to look at the real-world applications of coregulation and how effective it can be in a social setting.

COREGULATION BACKGROUND

Coregulation is a psychological term used describe the ability of an individual to modify the actions or state of another individual, this can be done through many different means but is a gradual and continuous change in one individual due to the continuous actions of another [1]. The topic itself has a lot of interest around it and has been researched extensively through history but a consensus on its application outside of childhood have not been agreed on by scholars. This project has to do with a subbranch of coregulation known as interpersonal emotion regulation which has to do with the use of coregulation to affect the feelings others [2], this is also known as emotional coregulation.

Some background into articles that investigated emotional coregulation, and the correlation between emotions and their effects on social relationships are included below.

[3] This extract looked at various methods, namely synchrony and mimicry which are theorized to help achieve emotional coregulation and analysed the results of studies where they were applied. Both methods are suggested to work because they allow an observer to activate the same neuron systems that another person uses during an action. This makes it much easier for the observer to recreate the action with ease. From the results of the studies we can see that mimicry and behavioural matching seem to have a positive coregulation effect because they achieve the effect of physically putting one individual in another's shoes. By doing this participants tend to understand others' actions and in turn feel like they can affiliate with them more. Implementing one of these methods for the project through an activity on a mobile application could be adequate for coregulation testing, however if implemented results would be very dependant on data being read from an external source during the activity, and the application would have to be able to continually process the data and dynamically adapt depending on its input.

[4] This article aimed to try and further the knowledge about emotional regulation when applied in a social setting, the research was heavily driven by looking at the use of emotional regulation to improve relationships and improve the efficiency of individuals. It suggested that emotional coregulation is linked to our physiological allostatic balance which optimizes our performance and reduces costs when changes occur, some backing evidence for this in parent-infant relationships was presented which seemed suitable, however this project will

act as an extension into the research of how emotional coregulation affects adults and whether coregulation can achieve the same optimization when applied in relationships involving two adults.

[5] Another project that looked at emotional self-regulation and how emotional states can be altered using a regulation activity, this project featured an application [6] that helped children focus their attention away from their anxiety and fear. This project is intended to expand on this implementation idea by using an application between two adult users for emotional coregulation.

THE PROJECT

PROJECT OBJECTIVES

The main purpose of the project is to carry out research into coregulation and find out what aspects of real life it can affect when implemented. Specifically, whether it can be used to benefit social relationships and interactions between individuals. For the project to successfully be implemented these listed aspects will need to be completed and developed on:

1. Further research into coregulation to discover methods that can be applied in a real-life setting and tested between two individuals. These methods will need to conform to the university's guideline on ethics and have some credible background to their implementation i.e. studies where they are tested.

2. An Android application with an adequate implementation of a coregulation activity will need to be created that can be used by participants of the project, this application will be required to process data received from an external sensor connected to each participant.

3. After the coregulation activity has been undertaken user feedback should be gathered regarding their experience using the application, and how it can be improved along with details on what effect each user felt participating in the activity had on them.

4. Both the data used by the program and the user feedback should be analysed to try and find a correlation between participating in the activity and a change in the user's mental state. Further details on how this analysis will be carried out will be detailed in the project analysis section below.

PROJECT METHODOLOGY

The Project will be focused around a linear case study where 3-5 users participate in a coregulation activity presented on an android app, all users will be required to fill out an ethics form and agree to be part of the study as their personal data will be collected and used during the activity. This data will only consist of the heartbeat of each individual user which will be collected by a heartbeat sensor.

For the project, an application that implements a chosen coregulation activity will need to be created. This application will have the capability to use data gathered about a user's emotional state and utilize it during the activity to help regulate another individual's emotional state. The development of this application will include a design selection stage, implementation stage and a feedback stage. As the entire case study is rooted on the emotional state of end users, the design of the application will be user centred to make the activity as intuitive as possible and avoid emotionally influencing participants.

The feedback stage will be undertaken once the application is implemented where 2-3 more users will provide feedback on the application and help test the implementation for any bugs or flaws. This will help fine tune the

activity to be as intuitive for end users and help remove any potential incidents that might affect the result of the study.

Once these stages are complete the application will be provided to the end users who will partake in the activity, after this users will be interviewed for 10 – 20 minutes where they 'll discuss their experience while completing the activity and answer a few questions on how they felt their emotional state had been impacted. The information given during these interviews will then be paired to the information gathered during the activity and analysed for the final project paper.

The structure of the project from start to end has been listed below in the project workplan section along with estimates of how long each task will take to complete.

PROJECT WORKPLAN

This project will be undertaken near the end of October 2018 and will continue until the end of March 2019. The workplan for the project is listed below in chronological order:

- Coregulation activity selection – This will consist of some light research into co-regulation activity implementations and selection of an activity to implement for the application after evaluations. This should take 2 weeks.

- Application development – This will consist of 3 stages. A design selection phase where multiple designs will be explored for the application and the most adequate one will be chosen to implement the activity. A coding phase where the backend of the program will be implemented according to the design chosen in the former phase. And finally, a testing phase where the program will undergo various forms of testing to remove bugs and flaws and make sure it functions adequately for end users. This should take 4 weeks.

- Feedback stage – This will consist of gathering 2-3 users and asking them to attempt to use the application to complete an activity, these users will then be prompted to share any concerns or qualms they have with the implementation and the feedback will then be gathered and analysed. This should take 1 week.

- Application adjustment stage – During this stage the application will be adjusted to include priority changes gathered from the first feedback stage. Any bugs, errors and malfunctions of the program will be fixed, and some new features may be implemented. This should take 2-3 weeks.

- End User rollout – At this stage of the project the application will be ready for end users to utilize; 3-5 end users will be gathered and prompted to complete the activity using the application, the data gathered and used by the app during the activity will be compiled along with data from interviews with each user. This should take 2 weeks.

- Data analysis and Evaluation – During this stage the data collected from the end user studies will be analysed to find any correlations between the completion of the coregulation activity and a gradual emotional change of each user. The results of the analysis will then be evaluated and a conclusion on whether coregulation can be a viable method to regulate social relationships will be decided on, a discussion on the larger scale potential of coregulation will also be addressed according to the conclusion drawn. This should take 4 weeks.

The Gantt chart in the figure below demonstrates how the workplan will be implemented over the period of the project (See Figures 1 and 2).

FIGURE 1

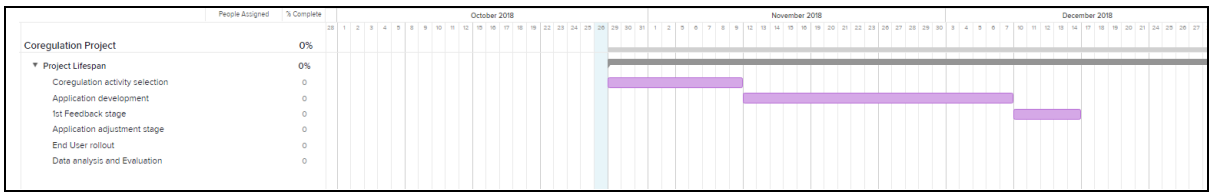
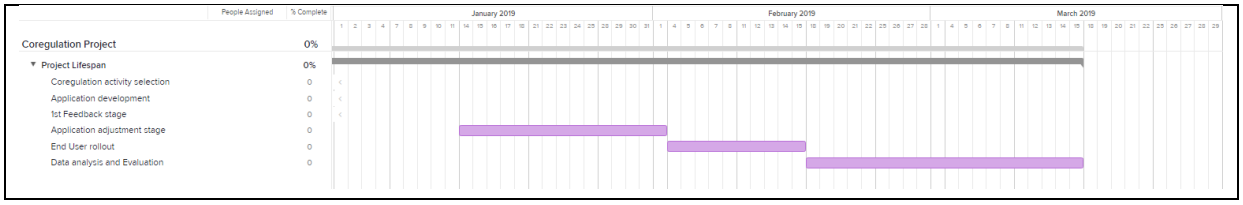


FIGURE 2



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