GamE: *Games as a method for eliciting* emotions

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In this paper, we discuss the design of a simple but effective card game developed under the 'GamE (Game as a Method for eliciting emotions) paradigm'. Under the GamE paradigm, the objective is to design a number of games to be used as a tool for inducing emotions in a natural and ethical way and this card game is one example of this.

Research on emotions has grown massively in the past few years which resulted in new theories, methodology and interesting findings. This research has been done from different perspectives (evolutionary, psycho-physiological, neurological, psychodynamic, etc) where every perspective took a meticulous approach in understanding and conducting research about emotions. Regardless of the different point of views, a fundamental focus in all perspectives has always been on developing innovative methods for inducing emotions in a natural and ethical way, which is still a challenging task [1]. There are a number of methods used for inducing natural emotions but usually the results gained from these techniques are not easy to generalize because of their artificially controlled settings [2] and dependability on a particular culture. There is always a need of developing innovative techniques, which could not only be used across cultures but also in a natural environment.

One technique, which we explore here, is to use games as emotion inducers. It is well known that players from different age groups can become emotional (both negatively and positively) while playing games and games give them a very engaging experience [3]. Based on this general idea, we developed a simple card game to use as a tool for inducing emotions in children. The card game is developed using Microsoft® PowerPoint®, and every game consists of six cards. When the games starts, only the first card is visible ('3' in the case of figure 1) and the other five cards are placed upside down so the numbers are hidden. Numbers on all cards are between 1 to 10 and a particular number cannot repeat in a single game (i.e. in the above example the number '8' will not repeat in next 5 cards). Appropriate colourful images are chosen for the game background and different animations are used to turn card around for making the game more attractive for children.

Figure 1. *Winning variant of the game*

When a game starts, the task of the player(s) is to guess whether the upcoming number on the next card will be lower or higher than the number ob the previous card. Once players have made their guess, the relevant card is turned around and the number on the card is made visible on the screen. In addition to this, a characteristic non-speech audio sound is also played right after the card is visible which inform players about the correctness or incorrectness of their answer. If players guess correctly then they are asked to guess the next number and they only win the game if they guess all the cards in a game correctly. If players predict the number incorrectly at any stage of the game, they immediately lose the game and move to the next game.
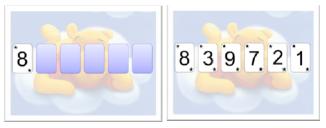

Figure 2. *Loosing variant of the game*

An important design consideration of the game is its deterministic nature. So far, we have used sequences of cards, where players will win half of the time and lose half of the time, if they make "rational choices". Figure 1 is an example of the winning variant where guessing the sequence of 'bigger – smaller – bigger…' will lead to a win. Furthermore in figure 1, at card 5, the rational choice will be a 'lower' number because no number can be greater than 10. Similarly for the last card, the choice will be 'lower' because the number higher than 9 has already been displayed at card 4. Figure 2 represents a losing variant where the most probable outcome for the final card would be a number higher than 2, but guessing "higher" would make this a losing game. Winning and losing games are typically mixed in the sequence, starting and ending with a variant in which children were likely to win.

In a series of experiment, we have used this card game to collect emotional responses to winning or losing the game. So far, we collected data from 144 children (half 8 years old and half 12 years old) who played the game either in the Netherlands or in Pakistan, and either individually or in pairs. Figures 3 shows the representative stills of winning and losing of Dutch and Pakistani children belonging to both age groups. Generally, the game worked quite well and as intended. Almost all individual and pairs of participants indeed made the logical choices that were expected in most of the cases, so that each individual child and pair of children lost at least two games and won at least two games. Additionally, not even a single child noticed and reported that the game was in fact a deterministic simulation. Rich data was which so far has been used in number of perception tests where viewers from Pakistan and the Netherlands watched and judged the emotional response of Pakistani and Dutch children when they win or lose a game. The details of these studies will be described elsewhere.

Figure 3. *Representative still for (Left to Right): Pakistani girl loosing, Dutch couple winning, Pakistani couple winning and Dutch boy loosing.*

On the basis of these early results, we can conclude that 'basic' games can be a useful tool for inducing positive and negative emotions naturally and ethically. Furthermore, this is a kind of emotion induction method that goes beyond traditional experimental settings and gives valuable insights about emotion regulation in natural settings. In the future, we would like to run more experiments with the same game in different cultures and would like to develop more extensive (but still simple) games under the same GamE paradigm for using them as an emotion inducer.

References

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