

Appraisal theory the effects on skin psychology essay



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This report aims to replicate a classic finding in biopsychology research which proposed, that increases in task difficulty lead to increases in arousal. As well as to present any individual differences that angle off from this, that possibly could be accounted by the appraisal theory. One hundred and two individuals took part in a task called Speedy Pizzas where they had to deliver successfully a vast quantity of pizzas as the level of difficulty increased. The individuals were represented with a total of 5 levels of difficulty, beginning from level 1 (10 pizzas per minute) to level 5 (50 pizzas per minute). This experiment used a repeated measures design where each individual participated at both levels of task difficulty. The outcome showed that there was a significant increase in GSR as task engagement got more challenging. Although, that the overall GSR test showed increase, individual differences might suggest otherwise.

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Introduction

To begin with, this paper will first examine some relevant background on the former literature on a classic biopsychology discoveries based on task performance and its association with increase in skin conductance in an attempt to replicate its findings. Afterwards, it will address some individual variations that might have a crucial role in that correlation. A number of researchers over the years have shown that task attainment of individuals is closely knit together with increase in skin conductance. For instance, Kahneman, Trusky et al. (1969 cited in Pecchinenda and Smith 1996) experiment, showed the relationship between skin resistance levels and mental arithmetic task at three layers of difficulty and encountered that skin resistance decreased as difficulty of each level increased. Nonetheless, this connection between them is often distinct, there are cases that the individuals disengage from the task by resigning which is shown in the form of decreasing responses in the GSR levels whilst the task engagement becomes particularly difficult. This occurrence can be placed under the theory of the appraisal model proposed by Smith and Lazarus (1993 cited in Pecchinenda and Smith 1996) that suggested that the amount of each individual's focusing resources is established by their appraisal of task-solving coping potential. The above theory has been adapted in various studies, one of them was measuring accomplishment in a demanding mental task. (Pecchinenda and Smith 1996) Pecchinenda and Smith's study wanted to demonstrate the direct association between a cognitive task engagement and the appraisal of each individuals coping potential. Thus, subjects were presented by series of anagrams, that they were called to solve, in various circumstances whilst their GSR was continuously observed. The level of <https://assignbuster.com/appraisal-theory-the-effects-on-skin-psychology-essay/>

difficulty diverse between each anagram by either having an easy, moderately difficult and extremely difficult anagram as well as the amount of time available that participants had to solve it changed between 30 sec and 120 sec. Results showed that participants coping potential varied between them, since the perception that each subject experienced the situation was different. Paradigm, when an individual appraised their task-solving ability with having a high coping potential approached the task with the attempt to achieve their goal and successfully complete the task. On the contrary, people who appraised the situation as overwhelming and the “ task as virtually impossible” (Pecchinenda and Smith, page 486) had low coping potential and therefore disengaged from the task. Hence, apposite to the skin conductance activity there was a general increase in the GSR levels when the task-solving trials were aligned with the participants’ engagement in the trials. However, this increase dropped dramatically when the anagrams level of difficulty was extremely demanding as a result of the paltry levels of task engagement. An interesting feature about this study that shouldn’t be obscured was that the correlation between skin conductance activity and task engagement is not absolute. There are other aspects that might intrude and mislead this association. As in that the correlation between GSR and other components such as stress, perception of the circumstance, negative feelings etc resulted as having an impact on the GSR, Nikula (1991 cited in Pecchinenda and Smith 1996). Another related experiment was conducted by Bohlin (1976). Bohlin’s study manipulated the levels of arousal by having participants to response after a number of trials whilst they were in physiological habituation state. She divided the subjects into three groups, the first group were told to relax when listening to a tone, <https://assignbuster.com/appraisal-theory-the-effects-on-skin-psychology-essay/>

the second one were given arithmetic tasks to solve and the third one a threat of shock was added to the task performance. Results showed that the Shock-threat group had the highest mean in conductance level and the Relax group had the lowest mean in GSR. Thus, this produces some evidence showing how increases in task difficulty result in various increases in physiological arousal.

These discoveries led to this current experiment where the aim was to replicate the existent findings; that when task difficulty increases individual's arousal increases as well. In addition, to demonstrate the variance between individual responses, for instance some individuals appraise themselves as having high coping potential, therefore engage in the task and complete it successfully and some of them as having low coping potential and appraise their abilities as insufficient and as a result they disengage from the task. Consequently to the past evidence one research hypothesis emerged from them for the present experiment; that there will be a significant increase in galvanic skin response from stage 1 to 5 and to also examine the individual responses as task difficulty increases.

Method

Design

The design that was used in this experiment was a repeated measures design with one independent variable, task difficulty at two levels (easy(1) vs. difficult(5)) and two dependent variables; the Galvanic skin responses and the number of failures that occurred. Participants in the experiment were allocated in a computer lab and had to do all conditions. Eventhough,

that there were 5 stages in total, only the easiest and most difficult level were chosen for this analysis. In this experiment a number of controls were used in order to avoid any confounded variables. First of all, the letter appearing on the pizza box was randomly generated therefore discarded any systematic bias introduced from having a particular order of pizza letters. Hence, people could not predict where the pizzas were going because the letter order was not the same. Secondly, by asking people to stay relaxed and still at the baseline would make sure that everyone was at the same condition, therefore no one would be stressed out and having GSR increase at the easy state and then at the more challenging state not having much increase at the GSR because it was already at a high level. Lastly, all participants were given the same standardised instructions to prevent any extraneous variables and that the letter that appeared on the box was randomly different for everyone.

Participants

One hundred and two undergraduate Psychology students were asked to take part in a cognitive task as part of their evaluation in the course. They were chosen from an opportunity sample since it was more convenient and easier to gather data from those who were there to do the experiment at the time. All participants had to do all conditions from stage 1 to stage 5 in order to collect the data needed for the analysis.

Apparatus

The experiment was run in a computer lab. The task that the participants had to take part in was called 'The Speedy Pizza', the game was developed by University of Huddersfield psychology technicians utilising Adobe Flash, <https://assignbuster.com/appraisal-theory-the-effects-on-skin-psychology-essay/>

PHP and MySql to run on PCs, headphones were also used to avoid any replication between participants. Moreover, the Biopac system that was used to measure GSR via an electrode attached to their fingers using a gel was called GEL101 isotonic . Finally, the GSR data was recorded on the Biopac systems software that comes with the Biopac as standard.

Procedure

Every participant was seated in front of a computer where they were given some further explanation about the experiment. They were first given a handout that was to familiarise them with some relevant background of appraisal theory and its main connection with the study. After that, participants entered the game where full instructions were provided, showing in the appendix section. Next they were attached to the Biopac device and started the practise game which lasted a minute. The second minute was the baseline state where markers were placed, by pressing the ' Esc' on the keyboard, (which also lasted 60 seconds) and then systematically after 60 seconds as the task difficulty increased. There were 5 stages that participants had to attend and excel by delivering successfully as many pizzas as possible, whilst the task got more challenging with each stage. By the time they reached to level 5 the number of pizzas that appeared on the conveyor increased greatly as the speed on the conveyor did, making it incredibly difficult.

Results

Description

The outcomes from the above experiment were the following. In Stage 1 GSR in micro-mhos was lower than Stage 5 GSR (mean for stage 1 GSR = 13.15 μmhos , (SD= 7.37 μmhos), mean for stage 5 GSR= 14.13 μmhos , (SD= 8.36 μmhos). Also, in Stage 1 the amount of failures was less than the amount of failures in Stage 5 (mean failures in stage 1 = .03 SD=.17), mean failures in stage 5= 31.10 (SD= 4.18). Moreover, to analyze the data and show the difference in the means between stage 1 and stage 5 in GSR levels and number of failures a repeated measures t-test (two-tailed) was used, but previously the data were checked for normality distribution. The normality assumption for this experiment can be waived since there was a large sample (N= 102) (Field, 2009). The t-test displayed a significance difference from the alpha level ($p= 0.05$) ($t= 3.779$, $df = 101$, $p < .001$ in GSR) and ($t=-74.976$, $df= 101$, $p < .001$ for the amount of failures). Although, that the overall GSR test showed increase, individual differences showed decrease, showing that 27 people disengaged from the task as they have appraised their abilities as being inadequate for the task (-5.63 maximum deduction, -.07 minimum deduction).

Discussion(513)

The aim of the experiment was to replicate a time-honoured biopsychology finding which stated that increase in task difficulty results increase in the arousal. Additionally, to relate Pecchinenda and Smith's study (1996) on the appraisal theory, suggested that there may be some individual variations possibly having an impact on the above correlation. Thus, a research

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hypothesis was assessed; that there will be a significant increase in skin conductance from stage 1 to 5, along with examining individual responses to increasing task difficulty. Furthermore, the outcome that rose from this experiment was that research hypothesis was accepted and it was at the directed predicted, however there were some deviation due to individual differences.

The results that we found can be supported by the following theories. First of all, by looking at the Kahnem, Tursky et al. Study (1969) the outcome that we found was as expected from this theory; that skin conductance indeed increases concurrently as level of difficulty increases. In the present experiment increase was shown when the amount of pizzas on the conveyor was frequent and the speed of the conveyor increased too. Also, arousal increases muscle tension and bias synchronization, therefore extreme levels of arousal can create discomfort (Thompson, 1930). In the experiment it was calculated that participants when they were between stages 3-4 had high levels of GSR that resulted as discomfort and as a consequence participant gave-up by level 5. Moreover, the increase in skin conductance as the task difficulty got more challenging can be sustained by The Inverted U Theory conducted by Yerkes and Dodson (1908) that proposed performance will increase as arousal increases and a point will be reached where optimal performance is achieved. Further of that point the performance will deteriorate. This explains the general pattern that was observed; as levels got more difficult participants' level of arousal increased greatly particularly between stages 3-4 (optimal performance) but dropped dramatically at stage 5. However, there was some diversion from this, where decrease in GSR

levels were spotted in 27 participants which can be possibly explained by the appraisal theory. That suggests that individual differences might alter that general pattern, people who estimate the situation as being overwhelming and incredibly difficult disengaged from the task because they felt their abilities were not strong enough.

Although, the current experiment was generally as predicted there was a limitation that should be taken into account for further research. The coping potential was not self-reported and this weakens the experiment because it does not sustain the needed experimental conditions for testing the hypothesis regarding to the GSR in the extremely difficult-short conditions. (Pecchinenda and Smith 1996)

Furthermore, our experiment considered ethical issues and therefore all participants were given the same standardised instructions, it was also valid and reliable, since it did what it attempted to do and it produces consistent results each time it is used with some variations.

In conclusion, the findings of this experiment showed that although in general GSR increase as task difficulty increase, individual differences have an important role in this correlation and might show otherwise.