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Shadow Projection: Elicitation of Emotional Response

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Abstract
The study aimed to determine the elicitation of individual emotional response through shadow projection, and to recognize if there is a significant difference between male and female emotional response upon presentation of such stimuli. The descriptive research design was used to establish the affective component of the target respondent. The researchers believed that projection of shadows or series of animated shadows can be a tool to elicit emotional arousal or response from individual when expose to shadow stimuli. Respondents were selected using the stratified random sampling method among high school students (N-131), and were assembled for 3-5 minutes visual presentation of a themed animated shadow using a projector device. Series of shadows are projected and after each session, students were requested to accomplish questionnaire which is the main data gathering tool to confirm whether the projected shadows have an emotional effect. In the course of the shadow presentation, students-respondents were earnestly watching each session coupled with occasional burst of noise in reaction to projected shadow scenes, suggesting that the shadow stimuli have emotional effects. Results revealed that shadow projections have an effect on students-respondents, signifying an elicitation of emotional response. Statistically, significant difference between male and female responses is apparent.
Keywords: Shadow Projection, Shadow Stimuli, Shadow

INTRODUCTION

In the light of the dynamic and advancing science of psychology, and a call for more techniques and tools that can be used to further understand individual's mental processes and behavior; the researchers came up an idea to tap the part of human existence that may not have an importance to other people and/or just part of our being which remain unworthy of precious time brought about by human's preconception of various phenomena around us, this however are exempted for those people who make this penumbra-umbra image making thing as hobby or money-making gimmick. Hence, in spite of this not much sought aspect of human existence the researcher earnestly indulge themselves to what we called – the shadow. On the other hand, the shadow concept being referred in this study is not the *shadow archetype* or the "bad side" of the ego which was conceptualized by renowned psychologist Carl Jung, rather the realistic existence of the partial darkness or obscurity within a part of space from which rays from a source of light are cut off by an interposed opaque body (Merriam-Webster, 2012), that somewhat creates a mystical illusion or perceptual interpretation or may brought a symbolic interpretation to an individual cognitive domain and eventually on emotional demesne, or in a lesser complexity it is only an image casts by a light to an object; that in one way or another may stimulate the affective side or may produce emotional response from those individual expose to this medium. This is view to the fact that, in the world around us – incidents, interactions, objects etc. are not left unperceived, that somehow may bring some individuals to appreciate or despise these occurrences. The perception (of these things), is the organization and interpretation of incoming sensory information to form inner representations of the external world (Gross, 2010), as such this would somehow develop a response from those individuals subject to these conditions, and upon administration, the expectation whether such animated images will produce a patterned situation that will eventually results to an emotional response will be highly sought by the researchers. This anticipation is parallel to the process of Pattern recognition by which we assign meaning to visual input by identifying the objects in the visual field (Eysenck, 1993). As such, the study on attentional in response to emotional stimuli, wherein an aspect of the interaction between cognitive and emotional processes that has received scant attention was investigated; participants who attended to 120 presentations of three different picture types, where N1 showed different patterns of habituation as a function of the stimulation, and that the pattern, which reflects a greater capacity of S_ (stimulus negative) to attract and maintain the participant's attention, is interpreted as a manifestation of the ''negativity bias,'' a phenomenon that reflects an evolution-favored set of mechanisms that facilitate a rapid and intense response to aversive events (Carretie', Hinojosa, & Mercado, 2003); this purports that stimulation or arousal can be achieved by means of visual presentation.

Moreover, some kids who enjoys playing with their obedient shadows, and persons who were involve in shadow play, or hand-shadow figure creation are but few who were fascinated to the "dark figure", hence in the earlier study, Zajonc's (1980) title "Preferences need no inferences" argued that emotion was independent of cognition, referring chiefly to the automatic, affective reactions. One often has a reaction of liking or disliking almost as soon as one recognizes what the object is. Therefore very little cognitive processing was required beyond knowing what something is and perhaps having one simple association. (Baumeister, DeWall, Vohs, & Alquist, 2007). Relatively upon simple assimilation to visual stimuli as in the case of a projected shadow, one

may infer, or accommodate ideas and that this perceptual understanding can be associated to some innate personal affective that eventually may produce an emotional condition.

Further, a research project conducted to recognize emotion from brain signals or the EEG-based emotion recognition, an influence of visual and auditory stimuli concluded that based on the EEG results, that there was an arousal in the areas responsible for human emotions, such as the limbic and amygdale (Bos, 2008), hence it is an obvious findings supported by scientific methodologies approach that certain visual stimulation has an effect in human affective areas, whether such stimuli resembles or somewhat resemble a shadow projection method, which a type of visual-cognitive interpretation process that may elicit emotional response. In another study, a record in electrical brain activity from subjects were recorded from subjects who are viewing ambiguous visual stimuli (perceived either as faces or as meaningless shapes) and induces a long-distance pattern of synchronization, corresponding to the moment of perception itself and to the ensuing motor response, an experiment made of Perception's shadow: long distance synchronization of human brain activity (Rodriguez et.al.1999). In analogous study, the used of Positron Emission Tomography (PET) to investigate responses of regional cerebral blood flow (rCBF) in nine healthy males presented with visual sexual stimuli of graded intensity. Statistical Parametric Mapping was used to locate brain regions whose activation was associated with the presentation of the sexual stimuli and was correlated with markers of sexual arousal (Redoute, et al, 2000).

The onsets of laboratory findings are of parallel views that visual stimulations can elicit responses from individuals if sensory areas were arouse. These researches also manifested more coherent findings on physiological aspects of stimulation not only on the cognitive part but as well as the affective or emotional domain. Thus, the abovementioned studies are good indications that the researchers study in another area of the human nature are not far away from affective domain which may be investigated even with descriptive approach.

METHOD

This study was made to form a larger database for shadow-projected related literature that would greatly aid the researcher in developing a more ambitious study on human behavior and mental processes. In an effort to explain every aspect of human existence covering different domains, the researchers indulge themselves in this not much recognize (attention-wise) of human existence - the shadow, though the targeted area is on the affective component, the thrust would be holistically. To capture the targeted aims, a descriptive research method has been used, and through the collaborative efforts of the researchers from different colleges, made the smooth administration of this endeavor. To obtain the emotional response from the respondent upon presentation of the shadow stimuli, a survey questionnaire was used. The study was conducted in March 2013 at Batangas State University-ARASOF Nasugbu, Batangas, Philippines.

Procedure

In an effort to make the student focus on the activities pertaining to shadow projection, the conduct of this study was made right after the student's academic final examination. Initially, subject students were lined up for proper distribution of the survey questionnaires and guided in a well spacious gymnasium allowing mobility and promoting conduciveness. A short yet comprehensive orientation was made to familiarize the subjects on how to properly answer the questionnaire. The second part is the formal administration of themed shadow projective images capturing different life situations in three (3) to five (5) minutes projection time with an average thirty (30) seconds interval in a succession of shadow images permitting respondents with ample time to reflect and answers the given questionnaire. A total of twenty-five (25) successions of animated shadow images were projected to produce a more significant input relative to emotional influence of such stimuli.

Participants

The respondents were selected using stratified random sampling method high school students (N-131) of Batangas State University – ARASOF Nasugbu Campus, Nasugbu, Batangas, Philippines. The students-respondents are composed of sixty-four (64) males and sixty-seven females subjected to a series of themed animated shadow projection. A total of twenty-five successions of themed animated shadow images are shown to the respondent and evaluated based on emotional aspects.

DISCUSSIONS AND RESULTS

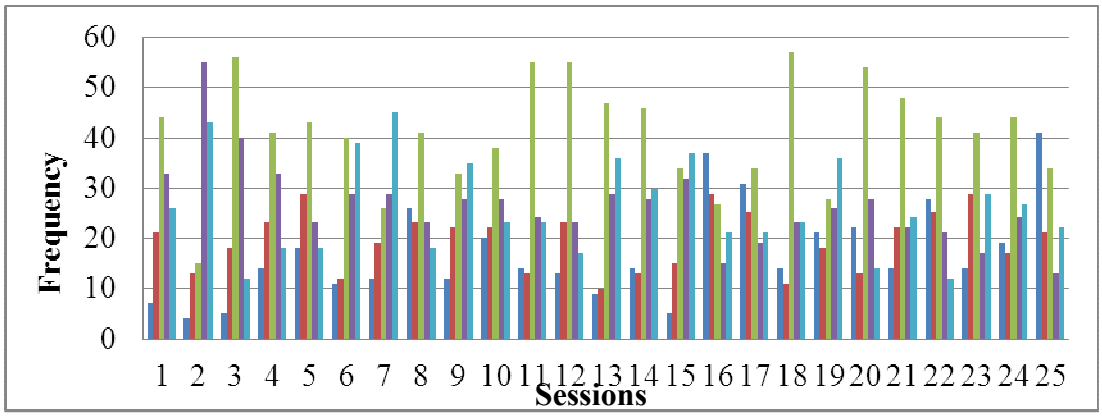
Shadow projection is a kind of visual stimuli that the researchers would like to assert in its effort to determine its influence to the individual who would be subjected to this perceptual input. Different definitions has been given for better understanding of perception, and it comprises processes which is driven by a combination of *bottom-up processing*—the actual physical sensations received by the sensory equipment—and *top-down processing*, which takes into account our expectations and beliefs about the world (Nairne, 2011). Thus, if this perceptual event caught attention of an individual as in the case of shadow projection wherein students-respondent were shown with differently themed animated shadow images have positively manifested behavioral reactions, and such

conditions brought greater anticipation from researchers that they are going in the right directions. Therefore, it may be declared that the function of perception is to make sense of the world around us, and such meaningful inputs will then organize into awareness that may or may not produce significant effects, though depending on the level of comprehensible component from the stimuli that an individual may relate to, hence following a cognitive, affective and behavioral influences in an individual. In the theory of Stanley Schachter (1964), it is stated that generally, there is a connection between emotion and cognition. Its two-factor theory was adamant that emotion has an influence in the arousal of the sympathetic nervous system. Thus, emotion cannot occur without this arousal, and these states of arousal differ from one situation to the next, so individual may interpret the arousal according to beliefs, knowledge or expectations about the situation. Hence, experience of emotion, according to this view, depends on both physiological arousal and cognition (Strongman, 2006). This can also the study that not also descriptively but physiologically there is an emotional response brought about by visual stimulation, and in these case animated shadow images, which of course cognition may also play its role in influencing emotional response.

It must be noted that a researcher-made shadow projection emotional response questionnaire (SPERQ) was used to gather the necessary data for the study and this was based on the Plutchik (1984) fundamental emotions or the universal emotions such as joy, fear, surprise, sadness, anger, disgust, acceptance and anticipation. However, the main focus of the study is to determine whether a themed animated shadow images can elicit emotional response and if significant difference can be noted from the responses of male and female respondents upon projection or presentation.

At the start and on the duration of shadow projection, and based on observational premise it can be noticed that students-respondents were earnestly watching each session coupled with occasional burst of noise in reaction to projected shadow scenes, suggesting that the shadow stimuli have emotional effects. Figure 1 displays that none falls on zero in the frequency distribution which is a clear indications of the elicitation of emotional reactions from the respondents upon projection of the shadow stimuli. Please be noted that the uneven bars for each session signify the level of affective component in a 5-point Likert Scale, and as earlier noted the level of affective component is not the focus of the study, rather than to determine whether such stimuli have an effect, the level however was shown for greater appreciation of the findings. Respondents unanimously stated based on their descriptive interpretation on the effects of animated shadow stimuli that were projected on them. This condition brought more excitement on the part of the researchers to further investigate the phenomena, and think of other methods on how to effectively harness its potential for further understanding of human mental processes and behavior.

Figure 1. Frequency Distribution: Level of Affection



**The distribution shows the 25 sessions during the projection of themed animated shadow stimuli.*

The result above are congruent to the study of Mayer, DiPaolo and Salovey (1990) on Perceiving Affective Content in Ambiguous Visual Stimuli: A Component of Emotional Intelligence; wherein one hundred thirty-nine adults viewed 18 reproductions of faces, color swatches, and abstract designs and rated the emotional content of these visual stimuli. Three scores were extracted, including consensual accuracy, amount, and range of emotion perceived. These scores were compared with other aspects of emotional intelligence such as empathy and related to constructs such as alexithymia and neuroticism. A general ability to perceive consensual emotional content in visual stimuli was found, and it was most strongly associated with the ability to respond empathically to others. In another research conducted by Royet, et al (2000) on Emotional Responses to Pleasant and Unpleasant Olfactory, Visual, and Auditory Stimuli: A Positron Emission Tomography Study shows that the Neural correlates of responses to emotionally valenced olfactory, visual, and auditory stimuli were examined using positron emission tomography. Twelve volunteers were

scanned using the water bolus method. For each sensory modality, regional cerebral blood flow (rCBF) during presentation of both pleasant and unpleasant stimuli was compared with that measured during presentation of neutral stimuli. During the emotionally valenced conditions, subjects performed forced-choice pleasant and unpleasant judgments. For all three sensory modalities, emotionally valenced stimuli led to increased rCBF in the orbitofrontal cortex, the temporal pole, and the superior frontal gyrus, in the left hemisphere. Emotionally valenced olfactory and visual but not auditory stimuli produced additional rCBF increases in the hypothalamus and the subcallosal gyrus. These findings suggest that pleasant and unpleasant emotional judgments recruit the same core network in the left hemisphere, regardless of the sensory modality. Characteristically, these two studies present a strong support on the influence of visual presentation, and in the case of this study – its effect of emotional aspect of the individual.

In Table 1, it indicates the relationship in the responses between the male and female respondents, where the computed t-value of 8.97 is significant at .05 level of probability. This shows that the computed t-value is greater than the t critical value which is 1.979. Hence, computation reveals the significant difference between the overall reactions of male and female respondents. The data can also clearly infer that shadow projection have an influence on both gender's affective domain.

Table 1. Relationship between the responses of Male and Female Respondents

t-Test: Two-Sample Assuming Equal Variances

	Male	Female
	Variable 1	*Variable 2*
Mean	2.3375	3.23880597
Observations	64	67
t Stat	-8.970527138	
t Critical two-tail	1.978524465	

t-value of 8.97 is significant at .05 level of probability. The computed t-value is greater than the t critical value which is 1.979.

The findings presented are clear indications of the influence of the shadow projection in the perceptual component of the individual specifically on emotional aspect, and these excites researchers to assess the opportunity of this visual element for further understanding.

CONCLUSIONS

1. There is an elicitation of emotional response from respondents.
2. There is a significant difference on the emotional response between male and female respondents.

REFERENCES

Abad, R. (-). Shadow Light: Explorations into Shadow Theather. California: ShadowLight Productions

Andrews, M. (2008). *Social Campaigns: Art of Visual Persuasion (Its Psychology, its Semiotic, its rhetoric)*. Masteral Thesis.

Nairne , J. (2011). *Psychology, Enhanced Fifth Edition.* USA: Cengage Learning/Wadsworth

Baumeister, R., et al (2010). Does Emotion Cause Behavior (Apart from Making People Do Stupid, Destructive Things)? *Then a Miracle Occurs: Focusing on Behavior in Social Psychological Theory and Research.* New York: Oxford University Press

Bos, D. B. (2007). *EEG-Based Emotion Recognition: The Influence of Visual and Auditory Stimuli*. The Netherlands: University of Twente-Enschede

Bruno, Frank J. (2002). *Psychology: A Self-Teaching Guide.* New Jersey: John Wileyt & Sons, Inc.

Carretie , L., Hinojosa, J.A., Mercado, F. (2003). Cerebral patterns of attentional habituation to emotional visual stimuli. *Psychophysiology*, USA: Wiley Online Library, Blackwell Publishing Inc., Volume 40, Issue 3, pages 381-388

Gross, R. (2010). *Psychology: The Science of Mind and Behaviour, 6 eds.* United Kingdom: Hodder Education/Hachette UK Company

Hergenhahn, B. R., Henley, Tracy B. (2009). *An Introduction to the History of Psychology, Seventh Edition.* USA. Wadsworth, Cengage Learning

Lemma, G. (2005). *Lecture Notes on General Psychology*. Defense University College in collaboration with the Ethiopia Public Health Training Initiative, The Carter Center, the Ethiopia Ministry of Health, and the Ethiopia Ministry of Education

Mayer, J., DiPaolo, M., Salovey, P. (1990). Perceiving Affective Content in Ambiguous VisualStimuli: A

Component of Emotional Intelligence. *Journal of Personality Assessment,* Volume 54, Issue 3-4, pages 772-781

Redoute, J., et al (2000). *Brain processing of visual sexual stimuli in human males*. Wiley-Liss, Inc. Human Brain Mapping 11:162-177, 430-433

Rodriguez, E., et al (1999). Perception's shadow: long distance synchronization of human brain activity. *Nature*, Macmillan Magazines Ltd., Nature, 430-433

Royet, J., et al. (2000). Emotional Responses to Pleasant and Unpleasant Olfactory, Visual, and Auditory Stimuli: A Positron Emission Tomography Study. The Journal of Neuroscience, 20(20): 7752-7759

Strongman, K. (2006). Applying Psychology to Everyday Life: A Beginner's Guide. England: John Wiley & Sons, Ltd.

Wierzbicka, A. (2007). Human Emotion: Universal or Culture-Specific? Canberra: Australian National University. *American Anthropology, Jstor.org*.

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