



The Influence of Family Climate to Visual Perception and Attention Development of the Teenagers

Mihaela Chraif, Mihai Aniței

mihaelapopa14@yahoo.com, mihai.anitei@unibuc.ro

University of Bucharest (Romania)

Previous researchers proved that exposure is positively associated with heightened levels of aggression in children, teenagers and young adults and negatively associated with prosocial behavior. Furthermore, the authors argued that exposure is positively related to the main mechanism underlying long-term effects of aggressive personality and aggressive cognition development being positively linked to aggressive affect and higher physiological arousal.

The objective of the research was focused on showing the influence of the family climate either positive or negative on the visual perception development and on the reaction time in visual pursuit task of the teenagers.

The method: The participants were 95 students from three high schools from Bucharest, aged between 16 and 18 years old ($m=17.1$; $S.D=1.21$), males and females, organized in two experimental groups: the first group of teenagers with families in conflict and the second experimental group with a positive family climate. The instruments were the peripheral perceptual test and DEST test for appreciation of speed and distances [15], [16]. The results showed that the teenagers living in a negative family climate obtained statistically significant differences ($p<0.01$) than compared to the students living in a positive family climate. In this way, the mean of the reaction time to the peripheral perceptual stimuli and the appreciation of speed and distances were statistically significant superior than for the with a positive family climate. The conclusions highlighted that negative climate increase increases the young's arousal to stimuli and the appreciation of the speed and distances. Therefore, their arousal is higher in any situation and any stimuli can be a trigger for their reaction.

1. Theoretical Framework

In the last decades, both on an international level and in Romania, research themes such as: the influence of the family climate on the children's, adolescents' and youngsters' development; the impact of the family climate on the cognitive and emotional development of the children, adolescents and youngsters, etc. have been studied. Furthermore, the foundations of many mental health problems that endure through adulthood are established in early life through the interaction of genetic predispositions and sustained, stress-inducing experiences [1], [2], [3]. Early stress can include child abuse or neglect, family turmoil, neighbourhood violence, extreme poverty, and other conditions in a child's environment that can prime neurobiological stress systems to become hyper-responsive to adversity [4]. [5] proved that exposure is positively associated with heightened levels of aggression in children, teenagers and young adults and negatively associated with prosocial behavior. Furthermore, the authors argued that exposure is positively related to the main mechanism underlying long-term effects of aggressive personality and aggressive cognition development being positively linked to aggressive affect and higher physiological arousal.

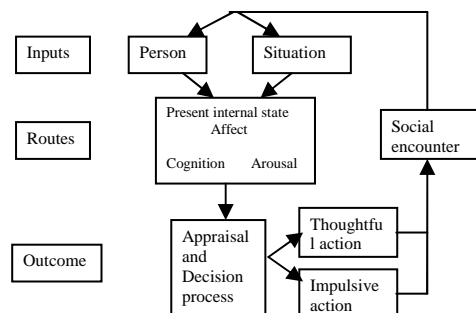


Fig. 1. The general aggression model [5]; media violence [6].

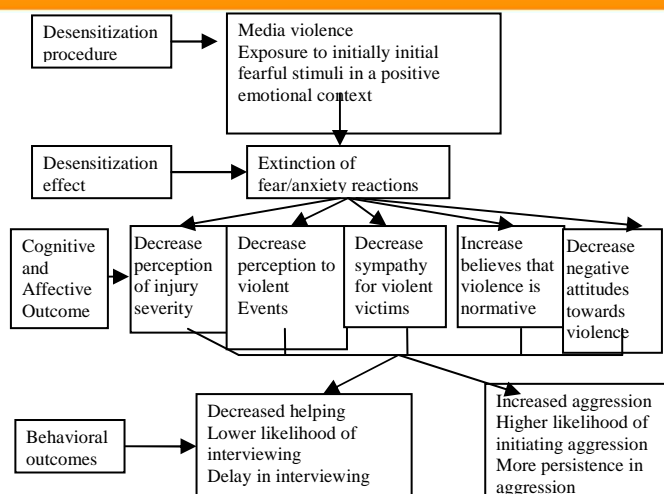


Fig. 2. The model showing the effects of exposure to

In the model from Fig. 1 the Present Internal State box indicates the interaction of components. Thus, according to this model repeated exposure to violent lyrics may contribute to the development of an aggressive personality [5], [6], as it is also true for long-term effects of TV violence [7], [8].

[5] proved that exposure is positively associated with higher levels of aggression in young adults and children and negatively associated with prosocial behaviour. Furthermore, the authors argued that exposure is positively related to the main mechanism underlying long-term effects of aggressive personality and aggressive cognition development being positively linked to aggressive affect and high physiological arousal cited by [9].

Since the natural reaction to seeing shocking violence is an increased heart rate, this is a compelling evidence of the desensitization. The GSR, the heart rate and other physiological responses to stimuli have been used to measure differential responsiveness to words and video films [10].

Hence, in this study we started from the results of previous researches following the two models presented in Fig. 1 and in Fig. 2: the general aggression model [5] and the model of the effects of exposure to media violence [6] in order to highlight the physiological reactions of exposing the youngsters from different family climate to visual perception tasks. Also, a great contribution was brought by the previous experimental studies involving aggressive and violent scenes from movies [11], the GSR response to aggressive verbal stimuli [12]; [13] and the cognitive Recovery in Socially Deprived Young Children: The Bucharest Early Intervention Project [14], [15].

2. The Objectives and Hypothesis

2.1. The objectives

The objective of the research is focused on showing the influence of the family climate either positive or negative on the visual perception and reaction time in peripheral perception and estimation of time and distances tasks of the teenagers.

2.2 The hypothesis

- 1) The family climate has statistically significant influences to the young's reaction time and attention in peripheral perception stimuli task.
- 2) The family climate has statistically significant influences to the young's reaction time and attention in estimating speed and distances stimuli task.

3. The Method

3.1 Participants

The participants were 95 students from three high schools from Bucharest, aged between 16 and 18 years old ($m=17.1$; $S.D=1.21$), males and females, organized in two experimental groups: the first



group of teenagers with conflict families in conflict and the second experimental group with positive family climate.

3.2 Instruments and materials

The DEST test [16] studies the participant's ability to estimate the speed and distance, displaying a small rectangle on the monitor that moves with a constant speed from left side to right, in a horizontal manner. After a certain distance or time, it disappears behind an invisible barrier. The subject has to push a button when he or she thinks the rectangle would reach the edge of the barrier, which is signalled with a vertical line at the edge of the screen.

Peripheral perception test [17] is aimed at evaluating the people's aptitude of perceiving and processing the peripheral visual information, highlighting the fast perception of the stimuli which entered the visual field from the lateral sides.

The test's presentation is made through a specially designed machine for testing which incorporates the so-called "Peripheral exposure" that is designed of diodes emitting light which are vertically and horizontally arranged and allow the bright stimuli to run from the periphery towards the centre of the visual field.

The test allows displaying the results as a report which contains the following variables:

- The number of correct and wrong reactions and the number of non-reactions
- The average value of reaction time for the stimuli coming from the left side (VMS) and from the right side (VMD) and the total mean (VMT).
- The standard deviations of the reaction times for the stimuli coming from the left side and from the right side and the total standard deviation.

3.3 Procedure

At the beginning of the test, the examiner verbally instructs the participant who is tested in a different way according to the chosen option for the test: a) when the test is presented as a unique test: "on the central screen of the machine you will see a sphere on which you will watch during the test while a bright stimulus will move from the periphery of the machine towards its centre. Once you perceive this kind of stimulus from the corner of your eye, push the yellow pedal" or b) when the test is shown as a back-ground test: "the test instructions are now shown on the screen from the centre of the machine. Read the instructions and you understood everything, you can start the test. From the moment the test was started and while you are working on it, the bright stimulus will move periodically from the periphery towards the centre. When you perceive this kind of bright stimuli from the corner of your eye, push the yellow pedal".

4. Results

Applying the SPSS program to the collected dates, in table 1 can be seen the descriptive statistics for the DEST and Peripheral perception tests.

Table 1. Descriptive statistics

<i>Variables</i>	<i>Group 1 positive climate</i>		<i>Group 2 negative climate</i>	
	<i>Mean</i>	<i>Std deviation</i>	<i>Mean</i>	<i>Std deviation</i>
DEST test				
Number of correct estimations	2.8	2.15	4.7	1.86
Underestimations	19.5	9.06	15.62	6.32
Omitted	.97	1.05	.41	.96
Estimation tendency	-12.82	15.69	-7.11	9.04
The average error of estimation	30.63	10.19	21.42	5.82
PERIPHERIAL PERCEPTION test				
VMS	2.49	.82	1.43	.69
VMD	2.51	.85	1.46	.67
VMT	2.50	.84	1.44	.68



The research hypothesis was tested by applying the Mann Whitney nonparametric test for two independent groups the research hypotheses had been tested.

Consequently, the first hypothesis "The family climate statistically significant influences the young's reaction time and attention in peripheral perception stimuli task" has been confirmed for the following variables: the number of correct estimations ($p < 0.05$), the estimation error ($p < 0.05$) and the mean of estimated errors ($p < 0.05$). The findings highlighted that the youngsters living in a negative climate from the second group obtained statistically significant performances in time reaction and attention, proving much more power of concentration than the youngsters who live in a positive family climate from group 1.

The second hypothesis "The family climate statistically significant influences the young's reaction time and attention in appreciation in estimating speed and distances stimuli task" has been confirmed for the following variables: VMS ($p < 0.05$), VMD ($p < 0.05$) și VMT ($p < 0.05$). Also, when testing the second hypothesis, findings highlighted that the youngsters living in a negative climate from the second group obtained statistically significant performances in reaction time and attention, proving much more power of concentration than the youngsters who live in a positive family climate from group 1.

5. Conclusions

Taking into consideration previous studies which show that experiences like abuse and exposure to violence can cause fear and chronic anxiety in children and that these states trigger extreme, prolonged activation of the body's stress response system, we can connect these findings to the results of this research.

The results showed that the teenagers living in a negative family climate obtained statistically significant differences ($p < 0.01$) than the students living in a positive family climate. Consequently, the mean of the time reaction for the peripheral perceptual stimuli and the estimation of speed and distances were statistically significant superior than for the students with a positive family climate. Previous research highlighted that nearly half of the children living in poverty witness violence, or are indirectly victims of violence [17], the frequent and repetitive threats around them create the potential for heightened fear and chronic anxiety [18]. Following the previous research [4], [11], [12], [13], [14] the conclusions highlighted that negative climate increases the young's arousal to stimuli and the estimation of speed and distances. Therefore, their arousal is higher in any situation and any stimuli can be a trigger for their reaction.

References

- [1] Teisl, M., & Cicchetti, D. (2008). Physical abuse, cognitive and emotional processes, and aggressive/disruptive behavior problems. *Social Development*, 17, 1-23.
- [2] Roozendaal, B., Barseganyan, A., & Lee, S. (2008). Adrenal stress hormones, amygdala activation, and memory for emotionally arousing experiences. *Progress in Brain Research*, 167, 79-97.
- [3] McGaugh, J. L., Cahill, L., & Roozendaal, B. (2006). Involvement of the amygdala in memory storage: Interaction with other brain systems. *Proceedings of the National Academy of Sciences USA*, 93, 13508-13514.
- [4] Gunnar, M.R. (2007). Stress effects on the developing brain. In D. Romer, E.F. Walker (Eds.) *Adolescent psychopathology and the developing brain: Integrating brain and prevention science*. (pp. 127-147). New York: Oxford University Press.
- [5] C.A. Anderson and B.J. Bushman, Human aggression. *Annual Review of Psychology*, 53(2002), 27-51.
- [6] N.L. Carnagey, C.A. Anderson and B.J. Bushman, The effect of video game violence on physiological desensitization to real-life violence. *Journal of Experimental Social Psychology*, 43(2007), 489- 496.
- [7] L.R. Huesmann, An information-processing model for the development of aggression. *Aggressive Behavior*, 14 (1988), 13-24.
- [8] L.R. Huesmann and L.S. Miller, Long-term effects of repeated exposure to media violence in childhood. In L. R. Huesmann (Ed.), *Aggressive behavior: Current perspectives*, New York: Plenum Press, 1994.



- [9] M. Chraif. The impact of family climate on Romanian youngsters' physiological reactivity to violent video stimuli measured by the polygraph. The proceedings of WCPCG 2011, (in press). Procedia social and behavioral sciences indexed Scopus.
- [10] M. Aniței, M. Chraif. The physiological effects of cartoons blood scenes on the youngsters in Romania, The proceedings of WCPCG 2011, (in press). Procedia social and behavioral sciences indexed Scopus.
- [11] M. Aniței, M. Chraif, A. Neacșu and C. Papasteri, The influence of aggressive stimuli on physiological reactivity recorded by the polygraph," Bucharest: Printig house of the army technic center, (7) 2009, 19-28.
- [12] M. Aniței, M. Chraif, A. Neacșu and C. Papasteri, (2009). "The influence of words and violent movies as stimuli in polygraph psychological reactions in young," in Proceedings of The International Congress of Psychology "Modern Psychological research. Directions and Perspectives. [Congresul international de psihologie "Cercetarea psihologica moderna. Directii si perspective]", Editura Universitara, Sibiu, 2009, 69-75.
- [13] M. Aniței and M. Chraif, The physiological reactivity of the young in short-term audio-visual exposure to TV news involving aggression and blood in Romania, Proceeding of ICSSH 2011, in press.
- [14] C.A. Nelson, C.H. Zeanah, N.A. Fox, P.J. Marshall, A.T. Smyke and D. Guthrie, Cognitive recovery in socially deprived young children: The Bucharest Early Intervention Project. Science, 318(2007), 1937–1940.
- [15] M. M. Ghera, P. J. Marshall, N. A. Fox, C. H. Zeanah, C. A. Nelson, A. T. Smyke, and D. Guthrie, The effects of foster care intervention on socially deprived institutionalized children's attention and positive affect: results from the BEIP study Journal of Child Psychology and Psychiatry 50, 3 (2009), 246–253 doi:10.1111/j.1469-7610.2008.01954.x
- [16] G., Schuhfried, DEST test utilization manual, 1992.
- [17] G., Schuhfried, Peripheral perception test, utilization manual, 1992.
- [18] Finkelhor, D., Ormrod, R., Turner, H., & Hamby, S. L. (2005). The victimization of children and youth: A comprehensive, national survey. Child Maltreatment, 10(1), 5-25.
- [19] Nelson, C. A., & De Haan, M. (1996). Neural correlates of infants' visual responsiveness to facial expressions of emotion. Developmental Psychobiology, 29(7), 577-595.