

## The physiological reactivity of the young in short-term audio-visual exposure to TV news involving aggression and blood in Romania

Mihai Aniței

Faculty of Psychology and Educational Sciences  
University of Bucharest  
Bucharest, Romania  
anitei\_mihai@yahoo.com

Mihaela Chraif

Faculty of Psychology and Educational Sciences  
University of Bucharest  
Bucharest, Romania  
mihaelapopa14@yahoo.com

**Abstract**—This research is focused on showing the physiological reactivity of the Romanian young exposed on short-term to aggressive and TV news involving blood. The method: The participants were 73 students from the Faculty of Psychology and Educational Sciences, University of Bucharest aged between 18 and 23 ( $m=20.4$ ,  $S.D.=1.3$ ), 32 males and 41 females. The instruments were the followings: 1) The Laffayette Polygraph, LX 4000-Platinum Series; 2) The video stimuli recorded from Romanian TV news from the highest rated TV broadcasting news, scheduled at 17.00 and 19.00 hours (during the afternoon). The results: By applying Wilcoxon nonparametric test for dependent experimental groups, the hypotheses regarding the statistically significant differences between the GSR ( $p<0.05$ ) and the blood pressure ( $p<0.05$ ) during the exposure to TV news involving blood and aggression have been confirmed. The findings provide evidence to parents and teachers who should prohibit their children from watching TV news involving blood and aggression and replace them with educational, cultural or other kind of TV news.

**Keywords**-GSR, TV news involving blood and aggression, desensitization.

### I. INTRODUCTION

In the last decades, numerous reports of governmental and non-governmental health science organizations conclude that research shows significant harmful effects of exposure to aggressive especially TV news [1], [2], [3], [4], [5]. Therefore, aggression has been validly measured in many different ways, highlighting the aspects of aggression and the multiple research contexts [6], [7]. However, the media companies gain huge profits, and parents receive mixed messages about the effects despite the fact that public health and government agencies have concluded that the effect is real and sufficiently large to warrant action. Reviewing the scientific literature in the last decades, [8] emphasized that [9] found that crime and justice topics represented 20% from the crime storied on local television news, and 12 to 13% on from the network television news and [10] highlighted that broadcast news generally offer more attention to crime reports than newspapers. Furthermore, the same author mentioned that a literature review by [11] showed that 36 of the American content analyses of crime news conducted (between 1960 and 1980) found considerable variation in the proportion of crime: from 1.61% to 33.5%. Also, [10] emphasized that television, murder and death accounted for represented 53% of all crime stories on Sky News, 42% on

ITN, and 38 per cent on BBC1. Other studies presented by [8] confirm the tendency for overrepresentation concerning violent and interpersonal sex crimes to rise [12], [13].

#### A. Aggression and desensitization on the young

Many researchers showed through experimental and non-experimental studies the correlation between the aggressive behaviour and desensitization [14], [15], [6], [7], [16]. They used measures of physical aggression, because this is the type of aggression most frequently rewarded in violent media programs and TV news. Thus, [17], [18] emphasized that the repeated stimulation of aggressive thoughts (new ones and well-practiced ones) may cause these thoughts to become part of the person's personality. [19] highlighted that one of the most important purposes of the mass media is the education and promoting education through the mass media is possible by using educational programs during the broadcast of TV news scheduled at high rated hours. In this way, the content and presentation of the messages oriented towards all spectators has to be instructive and to be able to fulfill the education function. As the author showed, [20] highlights that while in some countries, instructive programs oriented towards children can remove the flaws of formal education; in others, they are characterized by an enriching and complementary quality. Also, [21] showed the reinforcement of violent actions, desensitization to the real-life consequences of violence and the increase of pro-violence attitudes. [22] emphasized the general aggression model and presented the Internal State box with the interaction of its components. Thus, according to this model repeated exposure to violence may contribute either to the development of an aggressive personality [23] or to the appearance of long-term effects produce by violence on TV [24]. In this way, the studies demonstrated that attributions also increase the likelihood of children behaving aggressively [25] and normative beliefs begin to act as filters to limit inappropriate social behaviors [26]. Furthermore, these normative beliefs are influenced in part by children's observing the types of behaviour around them which include that kind of behaviour observed in the mass media [27]. Long-term effects of socialization from the mass media may also be increased by the way aggression and situations which involve blood affect emotions and social behaviour [28], [29], [30], [31], [32], [33]. Thus, [34] concluded that emotions influence behaviour in social settings which exist outside the media through stimulus generalization. Therefore, a youngster may then react with inappropriate anger or fear in

a new situation similar to the one the youngster has seen in the media. Taking into consideration the economic status, [35] highlighted that the effect of media violence on aggression is essentially the same for low and high socioeconomic status children. Therefore, low socioeconomic status children on average watch more television and television violence than do high socioeconomic children [36] but the socioeconomic status link to television viewing is not the main reason for the overall association between viewing media violence and promote aggression among youth [37].

#### B. *The impact of violence and images involving blood and aggression from the Romanian TV news on the young*

In most countries, people of all ages get a heavy dose of violent media either in TV programs or video games [38], [39] emphasized that harmful effects of TV aggressiveness have been observed on several of the most important issues. [40], [41], [42], [43] highlighted the impact of television violence on the young.

Twenty years ago, the collapse of the Romanian communist regime was broadcasted on TV through scenes involving violence and blood. After the revolution the TV news constantly broadcasted either during the day or during the night shocking reports with crimes, young suicide or other aggressive and involving blood images and aggression. Romanian children and teens are daily exposed to stimuli consisting in violent and involving blood videos on TV news channels despite all the warnings coming from governmental and non-governmental health science organizations. Extensive viewing of violence and blood scenes on television (ex: somebody hit his neighbour with the hammer in the head, somebody was decapitated in the bushes) by children causes greater aggressiveness. Later, after the revolution, Romanian psychologists started a prevention campaign for parents in order to raise the alarm that children, teenagers and youngsters watching violent and involving violence and blood TV news can increase aggressiveness. The impact of TV news violence may be immediately evident in the behaviour of a child or a youngster behaviour which affects the family atmosphere and it increases the tendency towards violence.

Taking into consideration that psychology was forbidden by the communist regime for decades, its rebirth which took place twenty years ago was a miracle of the Romanian revolution. Afterwards, psychologists started to do research, to experience different dimensions of psychology and nevertheless to be involved in human development. Furthermore, experimental studies concerning the physiological reactivity to aggressive stimuli started a few years ago in the laboratory of Experimental Psychology, University of Bucharest. Thus, [44] highlighted using the polygraph the influence of violent movies, violent soundtrack and relaxing movies in physiological reactivity. Furthermore, different experimental designs using the physiological reactivity recorded by the polygraph were completed [45], [46], [47].

## II. THE RESEARCH OBJECTIVES AND HYPOTHESES

### A. *The objective*

The objective of this research is focused on highlighting the physiological reactivity of Romanian youngsters exposed to aggressive and involving blood TV news on short-term.

### B. *The hypotheses*

#### 1) *General hypothesis*

The video stimuli consisting in scenes involving aggression and blood selected from the TV news have a statistically significant influence on short-term physiological reactivity of the young than the video stimuli consisting in educative TV news.

#### 2) *Specifically hypotheses*

- The video stimuli consisting in violent TV news and scenes involving blood and aggression have a statistically significant influence on the GSR amplitude recorded by the polygraph sensors.
- The video stimuli consisting in violent TV news and scenes involving blood and aggression have a statistically significant influence on the heart rate recorded by the polygraph sensors.
- The video stimuli consisting in violent TV news and scenes involving blood and aggression have a statistically significant influence on the blood pressure recorded by the polygraph sensors.
- The video stimuli consisting in violent TV news and scenes involving blood and aggression have a statistically significant influence on the abdominal respiration rate recorded by the polygraph.

## III. THE METHOD

### A. *The participants*

The participants were 73 students from the Faculty of Psychology and Educational Sciences, University of Bucharest aged between 18 and 23 ( $m=20.4$ ,  $S.D.=1.3$ ), 32 males and 41 females.

### B. *The instruments*

1) *The Laffayette Polygraph*, LX 4000-Platinum Series, with virtual interface, windows program. The polygraph soft and the GSR sensors are generally fixed about two inches apart, either to the top and bottom of the middle finger or on the base of two adjacent fingers. Heart rate sensors are generally used to record interbeat intervals or heart rate variability.

2) *The video stimuli* recorded from Romanian TV news from the highest rated TV broadcasting news, scheduled at 17.00 and 19.00 hours (during the afternoon).

a) *The first video stimuli with TV news* consisted in 21 aggressive scenes including involving blood together with the commentaries of the news and the soundtrack. For example, the scenes showed an adolescent who committed suicide and jumped from the last floor of the block and his body was found smashed and covered in blood; or a

newborn mutilated by his mother and many other scenes of this kind. The duration of the video stimuli was of 7 minutes.

b) *The second video stimuli* with nonaggressive TV news consisted in 21 video images describing touristic places, cultural news, book issue, nature and flowers with the commentaries and the soundtrack from the news.

### C. The procedure

A polygraph examination took place in the laboratory of Experimental Psychology at the Faculty of Psychology and Educational Sciences.

The length of an examination was between 20 and 30 minutes depending on the adaptation of the participants with the environment and the polygraph sensors. The examination was divided into two experimental situations: the first experimental situation with news showing violence and scenes involving blood from Romanian TV broadcasting news and after 3 minutes of relaxation, the second experimental situation with nonaggressive TV news showing touristic places, cultural news, book issue, nature and flowers. The polygraph sensors recorded the GSR (Galvanic Skin Response), heart rate and respiration of the participants to the study in both experimental situations.

### D. The experimental design

#### 1) The variables

##### a) The independent variables:

- for the first experimental situation the independent variables were the scenes involving violence and blood from Romanian TV broadcasted news.
- for the second experimental situation the independent variables were the nonaggressive TV news describing touristic places, cultural news, book issue, nature and flowers from Romanian TV broadcasted news.

b) *The dependent variables:* the Galvanic Skin Response (GSR) recorded as amplitude and return distance in pixels; Heart Rate and Blood Volume Pulse (BVP) and respiration (amplitude and return distance).

## IV. THE RESULTS

Table I shows the descriptive statistics for the dependents variables measured by the polygraph sensors for the aggressive experimental situation involving aggressive visual stimuli including scenes with blood.

TABLE I. DESCRIPTIVE STATISTICS

| No | The aggressive experimental situation |           |                    |
|----|---------------------------------------|-----------|--------------------|
|    | Variables                             | Mean      | Standard Deviation |
| 1  | GSR Amplitude                         | 20.4 div  | 5.12               |
| 2  | GSR return distance in pixels         | 63.18 sec | 6.32               |
| 3  | Heart rate                            | 108 bpm   | 18.6               |
| 4  | Blood volume pulse                    | 46 mmHG   | 5.30               |
| 5  | Respiration Amplitude P1              | 4.2 div   | 0.31               |

| No | The aggressive experimental situation |         |                    |
|----|---------------------------------------|---------|--------------------|
|    | Variables                             | Mean    | Standard Deviation |
| 6  | Respiration return P1                 | 3.1 sec | 0.25               |

In figure 1 we can see the diagrams of the dependent variables recorded by the polygraph for one of the participants in the experimental situation with aggressive stimuli. Furthermore, it can be observed the GSR high amplitude and the long length of the line until return.

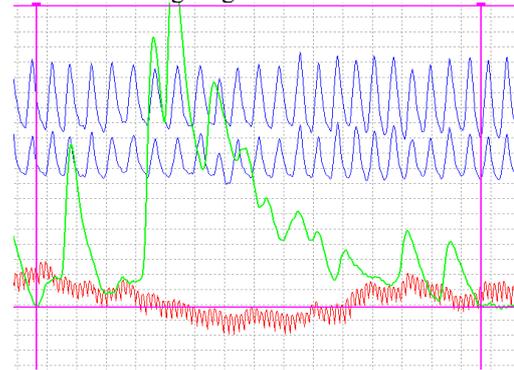


Figure 1. Physiological reactivity to aggressive image involving blood and aggression from the TV broadcasting news

Table II shows the descriptive statistics for the dependents variables measured by the polygraph sensors for the experimental situation with nonaggressive stimuli.

TABLE II. DESCRIPTIVE STATISTICS

| No | The nonaggressive experimental situation |          |                    |
|----|--|----------|--------------------|
|    | Variables                                | Mean     | Standard Deviation |
| 1  | GSR Amplitude                            | 4.7 div  | 2.31               |
| 2  | GSR return distance in pixels            | 13.8 sec | 2.82               |
| 3  | Heart rate                               | 97 bpm   | 14.27              |
| 4  | Blood volume pulse                       | 38 mmHG  | 3.85               |
| 5  | Respiration Amplitude P1                 | 3.16 div | 0.25               |
| 6  | Respiration return P1                    | 28 sec   | 0.19               |

Figure 2 highlights the GSR reduced amplitude and the length of the short line until the return at the base line for a participant in the nonaggressive experimental situation.

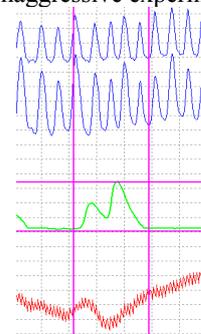


Figure 2. Physiological reactivity to nonaggressive scenes from the TV broadcasted news

In order to test the research hypotheses, Wilcoxon nonparametric test for dependent groups has been used.

The first hypothesis “The video stimuli consisting in violent TV news and scenes involving blood have a statistically significant influence on the GSR amplitude recorded by the polygraph sensors.” has been confirmed ( $p < 0.01$ ). Therefore, in figure 1 and 2 we can observe the differences between the amplitude and the time until the return to the base line for the image with aggressive stimuli which showed the body covered in blood of a young female mutilated (figure 1) and images of a Romanian mountainous landscape with caves (figure 2). This difference concerning the GSR and the confirmation of hypothesis number 3 shows that blood pressure emphasises the unconscious impact that the images describing crimes have upon the young viewers. This impact is not only a short-term effect because from the images involving blood youngsters learn how to express aggressiveness and how to desensitize themselves. Therefore they do learn educational or cultural aspects.

This can be explained by the fact that the young participants have been exposed to aggressive scenes from the media since their childhood and they have consequently suffered from the effects of desensitization [22], [23].

The third hypothesis “The video stimuli consisting in violent TV news and scenes involving blood have a statistically significant influence on the blood pressure recorded by the polygraph sensors.” has been confirmed ( $p < 0.01$ ) as the first hypothesis. In this way, the GSR and blood pressure are the most sensible physiological indicators which change at an unconscious level when the video stimuli displaying aggression are shown.

The fourth hypothesis “The video stimuli consisting in violent TV news and scenes involving blood have a statistically significant influence on the abdominal respiration rate recorded by the polygraph.” hasn’t been confirmed ( $p > 0.05$ ) and it highlights that respiration is a constant indicator when the subject is exposed to different stimuli situations.

In order to support the confirmed hypotheses, previous studies emphasized mixed methods including the EEG, GSR sensors and heart rate measurement. Therefore, [48] highlighted people’s reactions to TV news where the analysing studies in which researchers have monitored the brain waves, skin resistance or heart rate of people watching TV using the Experience Sampling Method.

## V. CONCLUSIONS

Following the previous research concerning the influence of violent movies, violent soundtrack and relaxing movies on physiological reactivity measured by the polygraph [44], [45], [46], [47] this research highlights the impact of the TV news broadcasted involving blood and aggression on the physiological reactivity of Romanian youngsters. This discovery is against their perception on aggressiveness exposed during the news through images involving blood compared to the cultural, educational and touristic TV shows [49]. According to these findings, Romanian youngsters are more emotionally satisfied after watching a broadcast of the TV news where they saw mutilated bodies as a consequence

of a fight between two rival gangs in a bar or club than after watching a TV show about culture, education or tourism. Despite the previous results, these results concerning youngsters’ perception of both words and scenes involving blood and aggression from the TV news, as well as the words and the scenes related to culture, education and tourism, shows that during a short-time exposure to aggressive scenes and images involving blood, the young have statistically different physiological reactivity than a short time exposure to cultural, educational and touristic TV news broadcasted. Although youngsters do not bring to a conscious level the physiological changes concerning the GSR reactivity, the pulse and the blood pressure, these modifications can determine change in emotion and cognition [17], [18] and in personality, leading, therefore, to desensitization [14], [15], [6], [7], [16]. The main highlight of this research emphasises the fact that the youngsters exposed to images from TV news involving aggression and blood, are not conscious about both the negative changes and the appearance of a step by step desensitization. As I mentioned in the previous study concerning the perception of TV news which contain scenes with blood and aggression, these youngsters feel excited about the aggressiveness and the blood from the images shown compared to the boredom and the monotony they feel while watching TV shows about culture, education or tourism. These discoveries are also supported by [22] who highlighted that on short term, exposure to media violence causes increases in children’s, adolescents’, and young adults’ physically and verbally aggressive behaviour [47] as well as in aggressive thoughts and emotions that are theoretically linked to aggressive and violent behavior. Also, as a support to this research, different researchers have emphasized through empirical studies that there is a strong statistically significant correlation between fear of crime and exposure to aggressiveness through the TV news [50], [51], [52], [53], [54]. Despite all these, [49] emphasize regarding the perception of youngsters of violence and nonviolence, that Romanian youngsters do not fear aggressiveness showed during the broadcast of the TV news and on the contrary feel attracted and enthusiastic when watching the images involving blood compared to the content of the TV shows concerning culture, science and tourism that they consider agreeable but monotonous and boring. Therefore, this research highlights with the help of a group of youngsters who participated to the previous one that physiological reactivity is statistically different when exposing the violent stimuli from the TV news and that on both short-term and long-term [23] the ones exposed are negatively influenced without being conscious or informed about the consequences.

In other studies, [55], [56], [57] also established a complex interrelationship of media content and other dimensions of social structure and experience offensive behaviour and fear of crime.

Concerning the results obtained in this research as well as in other researches, parents, psychologists, youngsters, adolescents and other persons should know and educate the children and the youngsters in Romania on how to avoid the aggressive and blood scenes in TV news although these are

more attractive having a very high rating compared to TV news or shows having cultural, scientific, educational and touristic themes [49]. The conclusion highlights that aggressive and blood scenes in TV news have to be prohibited and replaced with educative and nonviolent news at least at the hours with the highest rating during the day. A future study should focus on analyzing the behaviour of the young in different aspects of the Romanian community (family, high school, college).

#### AKNOWLEDGMENT

This work was supported by the strategic grant POSDRU/89/1.5/S/62259, Project “Applied social, human and political sciences. Postdoctoral training and postdoctoral fellowships in social, human and political sciences” cofinanced by the European Social Fund within the Sectorial Operational Program Human Resources Development 2007-2013.

#### REFERENCES

- [1] B. J. Bushman, and C.A. Anderson “Media violence and the American public: Scientific facts versus media misinformation,” *American Psychologist*, Vol. 56, Dec, 2001, pp. 477–489.
- [2] J. Fowles, “The case for television violence,” Thousand Oaks, CA: Sage Publications, 1999.
- [3] D.A. Gentile, and C.A. Anderson, “Violent video games: Effects on youth and public policy Implications,” in *Handbook of children, culture, and violence*, N. Dowd, D. G. Singer, and R. F. Wilson (Eds.), Thousand Oaks, CA: Sage, 2006, pp. 225–246.
- [4] L.R. Huesmann, and L.D. Taylor, “The case against the case against media violence,” in *Media violence and children*, D.A. Gentile (Ed.), Westport, CT: Praeger, 2003, pp. 107–130.
- [5] A.C. Huston, E. Donnerstein, H. Fairchild, N.D. Feshbach, P.A. Katz, J.P. Murray, E.A. Rubinstein, B.L. Wilcox and D. Zuckerman, “Big world. small screen: The role of television in American Society,” Lincoln: University of Nebraska Press, 1992.
- [6] B.J. Bushman, and C.A. Anderson, “Methodology in the study of aggression: Integrating experimental and nonexperimental findings,” in *Human aggression: Theories, research, and implications for social policy*, R. Geen and E. Donnerstein (Eds.) San Diego, CA: Academic Press., 1998, pp. 23–48. (<http://www.psychology.iastate.edu/faculty/caa/recpub.html>)
- [7] M. Carlson, A. Marcus-Newhall, and N. Miller, “Evidence for a general construct of aggression,” *Personality and Social Psychology Bulletin*, vol. 15, 1989, pp. 377–389.
- [8] R. Reiner, “Media made criminality: the representation of crime in the mass media,” in *The Oxford handbook of criminology*, M. Maguire, R. Morgan, R and Reiner, (eds.) Oxford University Press, Oxford, UK, 2007, pp. 302-337. ISBN 9780199205431
- [9] D. Graber, “Crime News and the Public,” New York: Praeger, 1980.
- [10] G. Cumberbatch, S. Woods, and A. Maguire, “Crime in the News: Television, Radio and Newspapers: A Report for BBC Broadcasting Research,” Birmingham: Aston University, Communications Research Group, 1995.
- [11] H. L. Marsh, (1991), “A Comparative Analysis of Crime Coverage in Newspapers in the United States and Other Countries From 1960–1989: A Review of the Literature,” *Journal of Criminal Justice*, vol. 19, issue 1, 1991, pp. 67–80.
- [12] K., Beckett, and T. Sasson, “The Politics of Injustice,” Thousand Oaks, Cal.: Pine Forge Press, 2000.
- [13] C., Greer, “Sex Crime and the Media, Cullompton,” Devon: Willan, 2003.
- [14] C.A. Anderson, J.J. Lindsay, and B.J. Bushman, “Research in the psychological laboratory: Truth or triviality?,” *Current Directions in Psychological Science*, Vol. 8, 1999 pp. 3–9.
- [15] A.H. Buss, and M.Perry, “The Aggression Questionnaire,” *Journal of Personality and Social Psychology*, Vol. 63, 1992, pp.452–459.
- [16] P.R.Giancola, and D.J. Parrott, “Further evidence for the validity of the Taylor aggression paradigm,” *Aggressive Behavior*, vol. 34, 2008, pp. 214–229.
- [17] F. Strack, and R. Deutsch, “Reflective and impulsive determinants of social behavior,” *Personality and Social Psychology Review*, vol. 8, 2004, pp. 220–247.
- [18] D.M. Wegner, and J.A. Bargh, “Control and automaticity in social life,” in *The handbook of social psychology*, D. Gilbert, S. Fiske, and G. Lindzey (Eds.), New York, NY: McGraw-Hill ,1998, pp. 446–496.
- [19] Y. Karaman-Kepenekci, “Children’s Right to Acquire Information and Be Protected from Injurious Publications in Textbooks,” *Elementary Education Online*, vol. 8, issue 3, 2009, 965-977. *ilkogretim Online*, 8(3), 965-977, 2009. [Online]: <http://ilkogretim-online.org.tr>
- [20] A. Aziz, “Radyo ve Televizyonla E+itim,” Ankara: Ankara Üniversitesi Elitim Fakültesi, EFAM, 2. Bayhan, P, 1982.
- [21] J.Cantor, “Media violence,” *Journal of Adolescent Health*, vol. 27, 2000, pp.30–34.
- [22] C.A. Anderson, and B.J. Bushman, “Human aggression,” *Annual Review of Psychology*, vol. 53,2002, pp. 27–51.
- [23] C.A. Anderson, N.L. Carnagey, J. Eubanks, “Exposure to Violent Media: The Effects of Songs With Violent Lyrics on Aggressive Thoughts and Feelings,” *Journal of Personality and Social Psychology, Inc.*, Vol. 84, No. 5, 2003, pp. 960–971.
- [24] L.R. Huesmann, and L.S. Miller, “Long-term effects of repeated exposure to media violence in childhood,” in *Aggressive behavior: Current perspectives*, L. R. Huesmann (Ed.), New York: Plenum Press, 1994, pp. 153–186.
- [25] K.A. Dodge, G.S. Pettit, J.E. Bates, and E. Valente, “Social information-processing patterns partially mediate the effect of early physical abuse on later conduct problems,” *Journal of Abnormal Psychology*, vol. 104, nr. 4, 1995, pp.632–643.
- [26] L.R. Huesmann, J.F. Moise, and C.L. Podolski, “The effects of media violence on the development of antisocial behaviour,” in *Handbook of Antisocial Behavior*, ed.D.M. Stoff, J. Breiling, and J.D. Maser, New York: Wiley, 1997, pp. 181–193.
- [27] N.G. Guerra, L.R. Huesmann and A.J. Spindler, “Community violence exposure, social cognition, and aggression among urban elementary-school children,” *Child Development.*, vol. 74, 2003, pp. 1561–1576.
- [28] B.J. Bushman, and L.R. Huesmann, “Effects of televised violence on aggression,” in *Handbook of children and the media* D. Singer and J. Singer (Eds.), Thousand Oaks, CA: Sage Publications, 2001, pp. 223–254.
- [29] G. Comstock, “New emphases in research on the effects of television and film violence,” in *Children and the faces of television: Teaching, violence, selling*, E.L. Palmer and A. Dorr (Eds.), New York: Academic Press, 1980, pp. 129–148.
- [30] R.G. Geen, “Human aggression,” Pacific Grove, CA: Brooks/Cole., 1990.
- [31] R.G. Geen, and S.L. Thomas, “The immediate effects of media violence on behaviour,” *Journal of Social Issues*, vol. 42, nr. 3, 1986, pp. 7–27.
- [32] L.R. Huesmann, J.F. Moise, and C.L. Podolski, “The effects of media violence on the development of antisocial behaviour,” in *Handbook of antisocial behavior*, D.M. Stoff, J. Breiling, and J.D. Maser (Eds.), New York: John Wiley & Sons, 1997, pp. 181– 193.
- [33] C.A. Anderson, L. Berkowitz, E. Donnerstein, L.R. Huesmann, J.D. Johnson, D. Linz, N.M. Malamuth, and E. Wartella, “The influence of media violence on youth,” *Psychological Science in the public interest*, vol. 4, nr. 3, december 2003.

- [34] K. Harrison, and J. Cantor, "Tales from the screen: Enduring fright reactions to scary media," *Media Psychology*, 1999, vol. 1, nr. 2, pp. 97-116.
- [35] R.L. Huesmann, and L.D. Taylor, "The role of media violence in violent behaviour," *Annual Review Public Health*, vol. 27, 2006, pp. 393-415. doi: 10.1146/annurev.publhealth.26.021304.144640
- [36] G. Comstock and H. Paik, "Television and the American Child," San Diego, CA: Academic, 1991.
- [37] L.R. Huesmann, L.D. Eron and E.F. Dubow, "Childhood predictors of adult criminality: Are all risk factors reflected in childhood aggressiveness?," *Criminal Behaviour Mental Health*, vol. 12, 2003, pp.185-208.
- [38] G. Comstock, and E. Scharrer, "Media and the American child," San Diego, CA: Academic Press, 2007.
- [39] D.A. Gentile, M. Saleem, M., and C.A. Anderson, "Public policy and the effects of media violence on children," *Social Issues and Policy Review*, vol. 1, 2007, pp. 15-61.
- [40] H. Paik, and G. Comstock, "The effects of television violence on antisocial behavior: A meta-analysis," *Communication Research*, vol. 21, 1991, pp.516-546.
- [41] B.J. Bushman, and L.R. Huesmann, "Effects of televised violence on aggression," *Handbook of children and the media*, in D. Singer and J. Singer (Eds.), Thousand Oaks, CA: Sage Publications, 2001 pp. 223-254.
- [42] J.S. Johnson, P.Cohen, E.M. Smailes, S. Kasen, and J.S.Brook, "Television viewing and aggressive behavior during adolescence and adulthood," *Science*, vol. 295,2002, pp. 2468-2471.
- [43] B.J.Wilson, D.Kunkel, D. Linz, J. Potter, E. Donnerstein, S.L. Smith, E. Blumenthal, and M. Berry, "Violence in television programming overall: University of California, Santa Barbara study," in *National television violence study*, M. Seawall (Ed.), Thousand Oaks, CA: Sage Publications, Vol. 2, 1998, pp. 3-204.
- [44] M. Aniței, M. Chraif, A. Neacșu, and C. Papasteri, "(2009). The influence of aggressive stimuli on physiological reactivity recorded by the polygraph," Bucharest: Printig house of the army technic center, 2009, pp. 19-28.
- [45] M. Chraif, M. Anitei, M. Hritcu, and A. Dogar, "The polygraph physiological response to red faces and day lighted faces recognition," *Proceeding of the International Conference of Psychology "The Psychologist in the community"*, 2009.
- [46] M. Chraif, M. Anitei, M. Hritcu, and A. Dogar, "The polygraph physiological response to face recognition," in *Proceedings of The International Congres of Psychology "Modern Psychological research. Directions and Perspectives. [Congresul international de psihologie "Cercetarea psihologica moderna. Directii si perspective"]*, Editura Universitara, Sibiu, 22-24 may, 2009. pp75-82.
- [47] M. Anitei, M. Chraif, C. Papasteri, A. Neacsu, "The influence of words and violent movies as stimuli in polygraph psychological reactions in young," in *Proceedings of The International Congres of Psychology "Modern Psychological research. Directions and Perspectives. [Congresul international de psihologie "Cercetarea psihologica moderna. Directii si perspective"]*, Editura Universitara, Sibiu, 22-24 may, 2009, pp.69-75.
- [48] R. Kubey and M. Csikszentmihalyi, "Television Addiction Is No Mere Metaphor," *Scientific American*, 23 february 2002.
- [49] M. Chraif, "The perception of romanian youngsters about TV news broadcasted involving blood and aggression," *Journal of Romanian Experimental Psychology Applied*, vol 2, issue 1, accepted for publication, in progress.
- [50] V.F. Sacco, "Media Constructions of Crime," *The Annals of the American Academy of Political and Social Science*, vol. 539, 1995, pp. 141-54.
- [51] Y. Jewkes, (ed.), "Dot.Cons: Crime, Deviance and Identity on the Internet," Cullompton, Devon: Willan, 2003.
- [52] C. Greer, (2005), "Crime and Media," in *Criminology*, C. Hale, K. Hayward, A. Wahidin, and E. Wincup (eds), Oxford: Oxford University Press, 2005, pp.157-82.
- [53] J. Ditton, D. Chadee, S. Farrall, E. Gilchrist, and J. Bannister, "From Imitation to Intimidation: A Note on the Curious and Changing Relationship Between the Media, Crime and Fear of Crime," *British Journal of Criminology*, vol. 44, nr.4, 2004, pp. 595-610.
- [54] D. Chadee, and J. Ditton, (2005), "Fear of Crime and the Media: Assessing the Lack of Relationship," *Crime, Media, Culture*, vol.1, nr.3, 2005, pp. 322-32.
- [55] T. Hope, and R. Sparks, (eds), "Crime, Risk and Insecurity," London: Routledge, 2000.
- [56] D. Garland, "The Culture of Control," Oxford: Oxford University Press, 2001.
- [57] W. Greve, (2004), "Fear of Crime Among Older and Younger Adults: Paradoxes and Misconceptions," in *Images of Crime II*, H.-J. Albrecht, T. Serassis, and H. Kania (eds), Freiburg: Max Planck Institute, 2004, pp.167-86.