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Doctoral School of Economics and Business Administration**

PhD Domain - Marketing

CHILDREN AND TELEVISION ADVERTISING

PhD Thesis Summary

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INTRODUCTION

In the consumer society we live in, children became true businesses with a powerful influence increasingly greater on companies who do everything to satisfy their needs and make them loyal. So far as a child is buyer, consumer and prescriber through the influence it has on parents, it is an important stake for marketing professionals who adapt their advertising strategies depending on child's age, needs and dreams.

Television is the media friend of children and dominates other media channels, occupying a priority in children's entertainment. Most of them spend more time watching TV than doing any other activity, thus television is the essential contact of children with *advertising*.

Research carried out in recent years have shown that children's exposure to TV commercials has implications on brain and thus on children's behavior. Using imaging via electroencephalography, we were able to highlight the changes that occur in the two cerebral hemispheres, when children are exposed to advertising stimuli.

In this regard, the present study has made a linking picture between the advertising, focusing on television commercials and the preschool children aged 4-7 years. We weighed, on the one hand, children's verbal reports related to viewing commercials, trust, preferences, desires and subsequent behaviors and on the other hand, children's brain activations in response to stimuli with positive character from the collage of advertisements that they have followed. We did not restricted to verbal responses obtained within a traditional research and sometimes considered subjective emotional descriptions, but we investigated the human brain's immediate response to advertisements stimuli.

We pointed out during the research that children are influenced by marketing policies from an early age, therefore parents' attention is essential right from the start, in order to favor a better understanding and reduce unwanted effects. This research aims to answer to parents' questions related to the influence of television commercials on their children and also guide

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them, according to their own principles, in educating children in a pleasant and efficient way.

Last but not least, our approach shall be one useful to educational factors involved and interested in the subject. Also, it can be a starting point for further studies, as the evolution of the phenomenon, closely linked with economic and social trends.

Insofar as in other democratic countries, this topic was of interest to marketers long time before (the example of France, which published a study in 1935 by the magazine "A vendre" and was titled "Child, current and future client"), now some states prohibiting advertising for children up to 12 and 13 years old (case of Sweden and Quebec) we appreciate our initiative to develop this topic is appropriate.

To emphasize the link established between children and television advertising, we intend to achieve a qualitative study and exploratory experimental research, using a neuroimaging instrument.

The intended purpose is identifying the influence that television commercials have on the behavior of children aged 4-7 years.

For a better understanding of the phenomenon in question, we tried to explore, describe and explain the emerging aspects that may be reported by both children and parents, on the one hand and on the other hand, aspects related to internal changes at cerebral level that occur when children are exposed to television commercials.

The year age category 4-7 was chosen out of a desire to capture children in the period they are the biggest consumers of advertising, as far as a research conducted by CNA (2007) show that as of 6 years, the advertising consumption on children is decreasing. In addition, this time of preschool called "golden age of childhood" (Șchiopu & Verza, 1997) is a period of naive sincerity, which has not yet experienced the "perverting" of school years.

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In order to achieve the above mentioned goal, we propose the following **objectives**:

- to identify which is the overall perception that children have on television advertising;
- to emphasize the impact that television advertising has on children's behavior;
- distinguish the mechanisms by which children are influenced by advertising;
- describe the effects that television commercials have on children.

Through the purpose and objectives pursued, our research finds its originality, given that we couldn't find in our specialized literature, a research that combines a traditional method of marketing research (interviews) and a method of neuromarketing, using cerebral imaging to identify the influence that television advertising have on children aged 4-7 years.

The novelty for Romania comes also from the fact that, the period which we can relate to is relatively short, ie after 1989, being unable to refer to an ample advertising phenomenon prior to that period, allowing conducting of research, especially on a certain segment of population. And this aspect supports the idea that the topic addressed is recent, current and with a permanent impact and consequences in the short, medium and long term, on the society.

The thesis is structured on five chapters, as follows:

Chapter 1 - Advertising - boundaries and conceptual approach presents a history of advertising, advertising definitions, types of advertising, delimitations between advertising and commercials, qualities, functions and objectives of advertising.

Chapter 2 - Children - a privileged segment of consumers begins by defining "children" from the stages of growth, provides information about

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the investigated segment, reviews a history of the evolution of children's role within the family and society and establishes the relationship that children currently have with audio-visual media represented by television (time spent in front of the small screen and receptivity to advertising).

Chapter 3 – The influence of television advertising on children refers to the peculiarities of television advertising to children, the effects of commercials and methods used to attract this segment of consumers. In addition, case studies from other countries that have taken action much earlier on this issue, the current Romanian and international legislation, facilitates a clearer picture of the proposed topic.

Chapter 4 - Research methodology starts from defining the purpose and objectives of the research and ends with peculiarities in research that have children as subjects, ethics in marketing research and neuromarketing. The content of the chapter deals with issues related to the surveyed population, makes an introduction to neuroscience, delimits the field of neuromarketing, identifies the advantages and limitations of the traditional and neuromarketing research and presents theoretical models and assumptions underlying research. There are presented the basics in neuromarketing research and the techniques used, especially EEG (electroencephalography) technique, which focus on in our research, along with the interview.

Chapter 5 - The results of the research on the influence of television advertising on children defines the variables pursued in research and presents the results obtained following the interview and experimental research using EEG technique.

Conclusions chapter is a centralization of assumptions and results obtained after testing the subjects. There are synthesized the information obtained in research, there are presented aspects regarding the contribution for the development of the domain, recommendations are made and there are presented research limitations and future research directions.

CHAPTER 1 - ADVERTISING - BOUNDARIES AND CONCEPTUAL APPROACH

This chapter begins by reviewing the history of *advertising*, it delimitats *advertising* and *commercials* concepts, the authors considering that *advertising* represents the entire process developed within the specialized departments (creative advertising, media planning, market research) with the aim of selling the product or service concerned, while the *commercial* is the end result of the whole process, a direct invitation to buy, its role being to attract attention of the recipient, to arouse interest and to determine him, ultimately, to buy the product or use the service promoted. Thus, the *advertising* designates the domain, the process, the science of advertising dissemination and the *commercial* is actually the product of this process.

Further, we detailed the *types of advertising* as described by Kotler (1998), Malcomete et al. (2003), Petre & Iliescu (2008), Băbuț (2013), *advertising qualities* as seen by Kotler (1998), *advertising functions* according to the authors Nicola et al. (2001) and Popa (2005) and also *advertising objectives* by Kotler (1998; 2003).

CHAPTER 2 - CHILDREN - A PRIVILEGED SEGMENT OF CONSUMERS

The chapter begins with an approach of "children" as our marketing research target segment, offering the vision of several authors about this category.

Moreau (2008) presents two distinct visions and relatively contradictory of "child-consumer" notion; first, supported by protectionists, describing the child as a human being in development, fragile, which does not have all the knowledge necessary to understand that brands can take advantage of his credulity and the second vision, attributed mostly to the practitioners, describing the child as autonomous and able to

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make choices. In the same sense of duality, Ironico (2012) suggests the notion of "child dichotomy": on the one hand, children can be considered passive subjects, vulnerable and in need of protection, on the other hand, can be portrayed as a sort of heroic figures, provided with the power to give unique and original meanings in any culture.

The authors mention several roles performed by children in the buying process, namely: *starter* – when they come first with the buying suggestion, *influencer* - when children influence their parents' purchasing decisions, *decider* - when the child, having a certain amount of money, decides about any component of purchasing decision, whether or not to buy, what to buy, how to buy or where to buy and *buyer* - when the child performs the act of buying and *user* - the child who uses or consumes the product or service purchased by him or by parents.

To better comprehend what children understand from the advertising message, most studies examine the following: age and "perception-cognitive development". In this regard, most researchers have used cognitive development theory proposed by psychologist Jean Piaget. Most authors consider that there are two basic stages regarding the understanding that children have on the advertising message: the first stage, in which they get to make the difference between a commercial and a program for young people and the second stage, when they are able to capture the intention to convince and sell of the one making the commercial. The problem is the age at which the child is able to apply these concepts. In the first case, some claim that he can make the difference between a commercial and a program from 3 years old, while others say barely 8 years old children have the skills to do this. A second stage ranges from age 7 to 13 years old, depending on the child's development. But the dispute over the issue of age is not at stake. These two basic stages show some vulnerability of the child in relation to the advertisement.

In terms of *brain development of the child*, Johnson (1999) estimated that in the process of growing, child's brain evolves from one primitive brain to the limbic brain and finally to the most advanced

neocortex. The *right hemisphere* is the intuitive side of the brain and especially responds to visual images and represents the *dominant hemisphere while watching TV* (Molfese et al., 1988). The *left hemisphere* dominates when a child reads, writes or speaks. It is responsible for analytical and sequential thinking.

CHAPTER 3 - THE INFLUENCE OF TELEVISION ADVERTISING ON CHILDREN

Targeted marketing sometimes causes public controversy. Public opinion is concerned when marketers unduly take advantage of vulnerable groups (such as children, in this case), or promote potentially harmful products.

Television is considered by experts the most effective mean of advertising to children, since a child perceives advertising as a show, often more attractive than the regular program. Humor, cartoons, songs, cute animals or the presence of favorite heroes, fascinate children at a very young age. Logos, sounds, characteristics of a brand fits to his personality, preparing loyalty (Mousseau, 1990; Kline, 1993). Kotler (2008) considers that television has the advantage of combining image, sound and movement, it addresses the senses, captures the attention and has a big audience, being one of the most effective means to reach young people.

The effects of advertising on children is reflected in the *consumption attitude* - the constant consumption increase among children, *creating needs and frustrations* - in case of acquisition refusal from parents, favoring the phenomenon of *obesity* - by promoting products with low nutritional value but hypercaloric, favoring the phenomenon of "pester-power" - a mixture of harassment and emotional manipulation practiced by children to get what they desire, *depreciation of parental authority* - having on the one hand the commercials that offer a tremendous world, full of humor, love and welfare and on the other hand, parents preventing

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consumption, *preference for brand* - through strong promotion of branded products more expensive and less accessible for all.

The regulatory framework of television advertising addressed at children is originated in French laws, which at the end of the nineteenth century include the right of children to education. Subsequently, there was adopted the *Geneva Declaration on the Rights of the Child*, in 1924, the *Declaration of Children's Rights* in 1959 and the *Convention on the Rights of the Child* in 1989. Under the name of *International Code of Advertising Practice*, the International Chamber of Commerce seeks to promote high ethical standards in marketing, complementing the existing legal framework at national and international level.

In Europe, the content of advertising is mainly regulated by the *Audiovisual Media Services Directive of 2010* and the *Green Paper on the protection of minors and human dignity in audiovisual*.

CHAPTER 4 - RESEARCH METHODOLOGY

This study aimed to obtain information about the influence that television commercials have on children aged 4-7 years.

The researches carried out in recent years have shown that exposing children to TV commercials have consequences on the cerebral activity and implicitly on the behavior of children watching them (Johnson, 1999). Using imaging via electroencephalography, we could reveal changes occurring in the two cerebral hemispheres, when children are exposed to advertising stimulation.

Thus, our research has focused on obtaining verbal information from 102 children and 10 parents through the *interview* technique and on highlighting the cerebral modifications that occur when exposing to commercials, using *electroencephalography* (on children aged 5, 6 and 7).

It is already accepted that *emotions* influence the decisions of individuals both in economics and in marketing. Thus, the application of

neuroscience in marketing fully finds its place in an attempt to explain the relationship between behavior and physiological processes in the brain.

Among the instruments used in neurophysiology, *electroencephalography* is known as having high temporal resolution of the order of demi milliseconds, the ability to continuously measure electrical activity, implies safety, low cost and the possibility to be portable, compared to other techniques.

Neuroimaging research in recent decades regarding the connection between emotion and the brain, have led to the formulation of hypotheses and models that come to explain the link between the two constructs. Thus, in literature, there are particularly important the *Approach - withdrawal model* (approach - rejecting) and *Valence hypothesis* (positive emotions - negative emotions) by Davidson (Davidson et al., 1979, 1982, 2000) and *The right hemisphere model* (Borod et al., 1998, Killgore et al., 2007).

CHAPTER 5 - THE RESULTS OF THE RESEARCH ON THE INFLUENCE OF TELEVISION ADVERTISING ON CHILDREN

Following the research conducted using interview technique on 102 children and 10 of their parents, and also using a neuroimaging instrument - electroencephalography on three children, there were obtained results that identify the influence that television commercials have on the behavior of children aged 4-7 years.

Six years old children are the biggest advertising consumers, the phenomenon being decreasing by age. Most children watch television alone, sometimes only accompanied by parents, which shows that in most cases, there is no one to explain to children what they see, including the commercials and their purpose, which children understand later. Thus, we found that the time spent by children in front of the TV, depends on the education level of parents. The lower it is, the kids are conditioned by television and let it invade them. The more educated the parents are, the more children have other alternatives to spend their leisure time.

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Their answers show that more than half of the children interviewed perceive the persuasive intention of advertising, most of them being 6-7 years old.

In conclusion to the verbal narrations of children and parents, we can state that commercials influence the behavior of children aged 4-7 years, causing them to want what they see and to exercise, in their turn, the influence on the parents in order to obtain the products. Most of children at this age do not perceive the persuasive intention of advertising television, seeing them as some information or entertainment source. But the exposure implications are relevant at behavior level, as explained in Chapter 3.1.2 (Commercial Effects).

Children were initially scanned awake and resting, then recorded the cerebral activity under the influence of commercials that have watched. The modifications occurred, related to the initial state, were discharges of slow waves (alpha) in the right hemisphere (1 child - 7 years) and generalized in both hemispheres simultaneously (2 children - 5, 6 years).

Our obtained results confirm also the right *hemisphere model or hypothesis*, which claims that the right hemisphere specializes in perception, expression and experience emotion, regardless of valence.

The specialized literature has not found by now, only one answer that clarifies what triggers the emergence of alpha waves, "decoupling" of the left hemisphere and activation of limbic system, that responds to emotions, instincts and feelings, while watching TV and commercials stimulation. Generally, there was unanimity on the fact that television involves a type of unnatural communication, inappropriate for our capacity of knowledge, of interaction with reality, imposing a sensorial decoupling of the viewer from the environment in which he is, targeting only the vision and hearing.

CONCLUSIONS

Further, we detailed the obtained results following testing the hypotheses:

Table 1. Centralization of assumptions and obtained results

Hypothesis	Confirmed/ infirm
H1 – Children have confidence in the truth of commercials.	Confirmed
H2 – Most children of 4-7 years do not perceive persuasive intent of advertising	Confirmed
H3 – Children's exposure to commercials favors their desire to have the product and getting it.	Confirmed
H4 – Exposure to positive nature stimulation of commercials causes a cerebral asymmetry, reported by activation of the left hemisphere, involved in approach and positive emotions behavior and right hemisphere, if rejecting behavior and negative emotions.	Infirm
H5 – Exposure to positive nature stimulation of commercials causes an emotional reaction observed in the right hemisphere by alpha waves dominance.	Confirmed
H6 – The content of television commercials causes to 4-7 years children, a passive mental attitude, measured at cerebral electric level by dominance alpha waves.	Confirmed

The conclusion that emerges from the research is that television commercials influences children's behavior, the stimulation used reaching the purpose to attract them by colors, music and animation used. By placing these commercials between programs for children or between episodes of cartoons, they are perceived more as a pause or a reason to entertain

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children. Persuasive intention is perceived by a small percentage of them, especially those of 6-7 years. The fact that they all want what they see in commercials, and moreover, most of them obtained, at least once, what they saw in a commercial, makes this segment worthy of all the attention of advertisers. They act as consumers, present and future, and prescribers, by the power to persuade their parents to buy what they want and often, they want what they see in commercials. At this age, the information imprints in his memory, children not being able to understand that others may have a different perspective than their own, related to a specific issue. Thus, alone in front of the TV, they believe that what they see is according to their perception.

The conclusion of the brain electrical analysis, made through stimulation by watching a commercial collage is that low frequency alpha waves, dominates the cerebral panel of the children involved. Therefore, the attention that children invest in commercials is rather one that opens doors of subconscious in favor of moving messages from the conscious to the unconscious mind and storing them in memory, the proof being that many children know texts and recite them, whenever they can. This essentially subliminal effect is favored by inducing in the viewer's mind, while watching, the cerebral alpha rhythm. Thus, through the process of imitation which is characteristic, children activate these messages, as they were originally taken.

Personal contributions

Many times we witness unpleasant scenes that occur in the commercial areas, between parents and children of different ages, which command and insist on buying certain products (most of them seen in TV commercials), and the arguments of parents seem to have no value in front of children obstinacy. A similar episode from personal experience led me to approach this subject, aiming for a better understanding, mainly by those of us who have children, but also by those who may take action so that exposure to programs dedicated to the smaller ones, among which interleaves commercials for toys and sweets, does not turn into a conflict

between them and their parents, in the short-term and cause adverse effects in the long term.

The contribution of this thesis to general knowledge in the field of influence that television commercials have on children's behavior is primarily an issue of the methodology used in research that has proposed an analysis of aspects related to the most complex biological organ known until now - the human brain. To this end, we combined a traditional marketing technique (interview) with a technique of neuromarketing (electroencephalography) - applied to my own child.

To our knowledge, this is the first doctoral research of this kind made in Romania, on the 4-7 year age segment. Our contribution is both theoretical and practical. To understand why *children* segment is so important for companies, we have created a map of the evolution of the role of children in the family and society in the recent decades. As for the recently studied field of neuromarketing, we conducted a synthesis of literature information, instruments used, studies achieved so far that focused on the research with TV commercials and we have dedicated a large number of pages to *electroencephalography* as a tool of neuromarketing, used in our research.

Equally, we added personal daily experience, with a child in this age segment who allowed me a constant observation, over the years, of all that concerns time spent by a child front of the TV and its effects.

This research has made a link between the phenomenon of advertising, focusing on television commercials and segment of preschool children aged 4-7 years. There were weighed, on the one hand, *verbal narrations* of children related to issues on watching commercials, trust in advertisements, preferences, desires and subsequent behaviors and on the other hand, *cerebral activations* of children as direct response to positive nature stimulation of advertisements collage that have watched. We have not limited to verbal responses obtained within a traditional research, often considered emotional subjective descriptions, but we investigated the human brain's immediate response to commercials marketing stimulation.

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Thus, the research revealed predominantly emotional participation of children during watching the commercials, by activating in all three cases, the right hemisphere also, or just the right one exclusively (responsible for acts of emotional, instinctive, receptivity, symbolic thinking etc.), confirming literature hypothesis, according to which the positive emotion is not just the prerogative of the left prefrontal regions, as it was widely accepted, according to Davidson's model, but requires a commitment of both cerebral derivations. Alpha waves discharges recorded during exposure to advertising stimulation, also confirms the hypothesis that, televisual experience in children is accompanied by the predominance of alpha waves, a situation characteristic of non-involvement and dreaming state, during which a large amount of information is transmitted and recorded in memory. It is known that, as experience requires a more intense emotional involvement, imprinting her in memory is stronger. Thus, the commercials make their way into the minds of children, determining their later behavior.

Recommendations

Although marketing people say there is no conclusive evidence that the commercials would have negative effects on children, studies conducted by now claim the predominance of negative effects over the positive effects. In this context, we wonder if the example of Sweden, which banned television advertising (toys, clothes, food) to children under 12, must be followed.

Countries like France and the United States have argued over time, and the right of children to television and commercials, banning the latter being considered an attack on democracy, on economy, on creativity of advertisers and child's freedom. In recent years, however, the phenomenon of obesity and youth violence imposed a series of restrictions on the contents and broadcast conditions of the television commercials addressed to children. Other states, recognized as the most advanced in the world (Sweden, Norway, Denmark), have applied major restrictions in this respect, even prohibiting the phenomenon.

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In Romania, the National Audiovisual Council (CNA) is the guarantor of public interest and the unique regulatory authority in the field of audiovisual programs, under parliamentary control and the Romanian Advertising Council (RAC) is a professional, non-governmental, non profit and independent organization, having the role of self-regulation in advertising, being also the depositary of *Code of Ethics for food advertising addressed to children*. These bodies supervise enforcing the legislation, transposing the *European Directive on audiovisual media services* without any additional restrictions, such as those above.

We remark a progress regarding CNA's interest on protection of minors in the televised environment. If, at the inception of this doctoral research, in 2011, the site of this institution only provided the legislative framework for regulation of broadcasting in Romania, now we can find extensive information on the "protection of minors" at the dedicated line from the main menu, according to the recommendations that we wanted to make from the beginning. Here there are presented the stages of child development and measures addressed to both children and parents for a better control of the effects that televisual exposure can have on children. In this regard, CNA urges parents, according to their principles related to education, to establish, jointly with children, rules on the choice of programs watched by children, their time spent watching TV and time dedicated to this activity.

This present research aims to, ultimately, answer parents' questions related to television and commercials influence, especially on their children, and a guide that everyone can follow according to their own principles, in the process of educating the children, so as to be pleasant and efficient.

In this regard, we emphasized during the research, that children are influenced by marketing policies from early ages, therefore attention of parents is essential from the very beginning to foster a better understanding of the phenomenon and reduce undesirable effects. So we thought of a

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number of *recommendations* in line with those made by many psychologists and pediatricians in this regard that **parents** can follow:

- Limit children's exposure to television commercials and do not allow them to have a TV in the room;
- Explain to children about how advertising works and what is desired by their dissemination. It must be said that the commercials means a lot of money for those who are promoting them and that their goal is to get people to buy different products;
- Encourage children to watch advertisements critically, through comprehensible examples, of which they understand that, often, the information is intentionally exaggerated;
- Explain to children what product placement means; if the characters in a movie or a TV program are using a certain brand, perhaps those who promote it have paid a lot of money to present it there;
- Talk to children so that they become responsible and warned consumers knowing what is beneficial for them and what is not, what is good for the environment and what harms it, what means a good quality – price ratio;
- Educate children in terms of nutrition with a food guide. Ask them if we can have a healthy and balanced diet if we eat only things seen on television. Make the distinction between "everyday food" and "casual food";
- Decide exactly what you want to buy before making purchases, including snacks and sweets. By shopping with a list that you have discussed previously with children, it is easier to avoid impulse shopping and setting limits in the store;
- Watch your own habits regarding shopping and change them if necessary. Children immediately discover what is important to their parents;
- Ensure that the time spent by children watching TV is equal to the

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time spent in family, time spent with creative games, the spent outdoors, reading or other activities to stimulate a balanced brain development;

- Share these concerns with other parents. You will discover that they think the same and you can establish coherent rules regarding watching television;
- Notify the CNA or Romanian Advertising Council, as you observe aspects inconsistent with age and level of understanding of children in television commercials addressed to them.

Parents, along with schools, are primarily responsible for children's education. In this regard, along with the recommendations that we have made for parents, we might add a proposal addressed to the **Ministry of National Education** to launch a *multimedia program* in *schools* to teach children how to decipher commercials and to inform them on the regulations that protect them. This way, we can encourage an advertising education at preschool and undergraduate level.

Following the model of Nordic states, we recommend the Government the establishment of *Consumer Ombudsmen* institution – a lawyer to defend the interests of media consumers, regulating television advertising addressed to children, exercising a strict control over it. This institution can supervise the integrity of advertisers, with the right to interpret the law in the most rigorous manner.

We believe that a ban on television commercials addressed to children under 12 years old, following the model of other states, will not happen in the near future in Romania. But there are elements that can be improved to the extent that decision-making power primarily belongs to professionals in the field, which are upstream of the distribution and marketing process.

Thus, the **makers of advertising** could put more emphasis on the educational side of promoting products, ie all commercials for sweets and juices to contain a statement related to the use toothbrush and toothpaste, for example. Also, it is required a constant promotion of fruits and vegetables daily consumption, essential for the balanced development of children. To the extent that the influence that television commercials have on children is a proven thing, our recommendation for advertising responsables is to be more weighted in promoting products addressed to children, given the medium and long term effects that we've detailed in this thesis.

Research limits

The limits of the present research are based mainly on financial reasons (related to the research budget, which was secured by own funds):

- The interviews with children were conducted only in Botosani municipality, and the sample used does not allow generalization of the study findings at the level of the entire target population in Romania;
- Conducting of both the interview and EEG experiment in public institutions during normal working schedule, did not allowed an uninterrupted research (meal breaks, sleep hours of children in kindergarten and urgent cases investigated with EEG technique at St. Mary Hospital of Iasi, where we have conducted the experiment);
 - The research has not considered rural children;
 - The electroencephalography was applied only on 3 subjects;
 - Only 10 parents of children included in the study were interviewed;
 - The electroencephalography interpretation of results was done by pediatric neurologist and not a computer program that provides several interpretations and illustrations of the changes in the brain, when exposure to commercials stimulation;
 - In a research having children as subjects it is difficult to make a precise measurement of what they think, what they prefer or think about different aspects discussed, data processing and interpretation may endanger an objective interpretation.

Future research directions

From this research we can draw possible future research directions, which, in our opinion, can result in:

- Expanding research at the category of school children, which can be given a questionnaire to be filled;
- Expansion of research to rural children;
- Inclusion of a larger number of parents in research for better data validation;
- Using a electroencephalography device that benefits of a software adapted to interpreting results and provide illustrations and graphics showing cerebral transformations, when exposure to commercials stimulation;
- Using a portable electroencephalography device, of the latest generation, providing more flexibility and allowing the researcher to study more children from different geographical areas;
- Subsequent to EEG experiment, the achievement of an interview by which to verify the informations that have been memorized by children after exposure to TV commercials.

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