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## CONNECTEDNESS TO TELEVISION SERIES AND THE TENDENCY AS TAKING MODELS: SAKARYA UNIVERSITY EXAMPLE\*

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### ABSTRACT

It has almost been a century since television entered our lives. Leaving all other media behind, it has become the most popular mass media. The most important reason behind its popularity is that it brings almost everything we desire but cannot reach to our homes through a glass screen. Thousands of television channels all around the world create contents for almost every taste and interest group; and their number is gradually increasing. Owing to the broadcasting adventure in Turkey that shows parallelism with the developments in the world, televisions have become indispensable furniture in houses, offices and even in places of socialisation.

The place of television in our daily lives is important in terms of the time we spend and our habits of using this media. Television which has many functions such as entertainment, education, and informing is the most common and the most effective mass media. The way it influences our lives has become so dominant that we have started to plan our daily routine according to our fields of interests on television. Today, when designing a living room, the first problem to be solved is the place of the television. In the selection of furniture, television has become a reference point, which is an indication of the fact that in homes, we spare the most important and precious time for television.

There are many researches on what we watch on television which is placed in the centre of our lives. As the television rating results reveal, series are the most popular productions. There is a cut-throat competition among the series aired at primetime every night. The winners of this competition, at the same time, can be the winner of the rest of the day because people focus on talking about the popular series and solving the issues as if the characters are real. This interaction can be effective in their socialisation, shaping their lives and making decisions. This study scrutinises the series-watching habits of the university students through “TV Programme Connectedness Scale” developed by Russell, Norman and Heckler, and the reflection of these habits in the students’ daily lives has been analysed in the framework of Elihu Katz’s uses and gratifications theory.

**Keywords:** Television, series, audience habits, connectedness scale, uses and gratifications

\*The limited version of this paper presented at ITICAM 2018 Conference in 19 July 2018 at Paris

### INTRODUCTION

As the societies enlarged and new forms of relationships emerged, the dimensions of communication have changed and developed. The means that transform mass communication into a systematics and interaction were once printed works; but due to technology, their scope and range, that is, their impact area has been broadened. As the electronic waves were turned into message transmitters, telegram transmission became fast and less affected by the geographical conditions; and paved the way for communication. Then, when these waves started to be received from many sources at the same time, namely, through radio waves, mass communication was irreversibly transformed. From then on, everybody got the chance to receive information from other parts of the world at home or at work from electronic boxes which gradually became smaller. Radio broadcasting spreaded world-wide at the beginning of the 20<sup>th</sup> century; and radio was placed in the seat of honour in homes (Harte, 2002, p. 12).

When images were added to the messages received from these boxes, humankind entered the renaissance period in mass communication. This story which dates back to 1930’s was also considered as hosting everything from other parts of the world in our homes; and this opportunity brought about new wishes and needs (Gray & Bell, 2013, p. 2).

As a matter of fact, television is not a basic need for a house like a washing machine or a stove; people can very well maintain their lives without it. However, at this point today, plans concerning the purchase of a television are made before considering many other needs of the houses, and even the designs of the rooms are determined by these choices (Cavendish, 2007, p. 9).

As the television adventure which was once black and white was coloured, and as the hours and consequently the variety on the screen increased, television started to be settled in the centre of daily life. Cinema, which was the



biggest actor of fine arts in that period, did not at first share its productions with television which was regarded as the biggest threat for its existence. In time, since it could not resist the effect and spread of this mass media, cinema had to stretch its resistance (Cavendish, 2007, p. 25).

Turkey was introduced to television broadcasting as late as the middle of the 20<sup>th</sup> century. In 1952, a group of academics from the Faculty of Electrical Engineering in İstanbul Technical University started limited television broadcasting with the opportunities of the school and of their own. Later, the state television was founded and television broadcasting was carried out only by the state for long years (Özçağlayan, 2000).

On the other hand, the inclusion of the private sector in television broadcasting was with the broadcast by the satellite on 1<sup>st</sup> March 1990. Since there was no legislative regulation in that period, this broadcast was discussed a lot; and in the following years, new broadcasts were added with frequency tenders. Turkish television broadcasting became varied in terms of content when the private televisions started to broadcast; and this widened the place of television in the daily lives of the Turkish people incredibly (Özçağlayan, 2000).

The researches reveal that in Turkey, more than 90 percent of the society prefers watching television as the first activity to fulfil their free time (TÜİK, 2015). The Turkish people are among the first 15 in terms of television audience rates (Özertem & vd., 2014, p. 5). However, how they spend this time differs from person to person. The most watched programmes are generally the ones that are aired in the primetime, that is, ‘the golden hours’. Series are the most watched productions in these hours. Television series cover almost 70 percent of these hours in which the television is watched the most (Özertem & vd., 2014, p. 9). The size of the demand shapes the supply and every season nearly 100 series start to be aired. Nearly half of these have to have an early final as they cannot achieve enough rating to continue (Özertem & vd., 2014, p. 35). To conclude, series have a significant impact on the daily lives of the Turkish television audience. The first series that was aired on Turkish televisions in 1972 was a French production titled *Bedava Dünya Gezisi*. The first domestic series aired on TRT in 1975 was *Aşk-ı Memnu* which was adapted from Halit Ziya Uşaklıgil’s novel. Before this 6 episode trial, generally dubbed foreign productions were presented to the audience, but later, domestic productions were started to be aired one after the other (Çelenk, 2010).

## PURPOSE

The purpose of every research is to come up with a meaningful result from the data obtained through the analysis of actually a part of life. The motivation of this study is to put forth the television audience habits that have become an important part of our daily lives, along with their reflections on our daily lives. With this aim, the most effective and the most watched productions on the mass media called the television have been chosen. The most watched productions can be exemplified as series, films, competition shows, and news-sports programmes. Since the objective of the study is to measure the impact of this media, that is, connectedness, the series which are known to be the productions that the society turns to in terms of modelling should be involved. Therefore, it is aimed to reveal how these productions have an impact on the lives of the people. This effect sometimes corresponds to a mood because with the motivation to spend the period of relatively free time good, people consider these productions as an escape from the real life or as a confrontation with the real life. Previous research (Russell, Norman, & Heckler, 2004) have shown that watching certain series had been effective in forgetting or solving problems. Another data that the study aims to obtain is the state of being inspired which is emerged with these productions. The source of inspiration is sometimes the places, the clothes or other daily needs used in the series. Shopping or the preferences based on the impact of the series is another aspect that this study aims to bring to light. The state of being inspired is sometimes observed as modelling. The study also tries to reveal at what rate the characters that are identified with guide people in their struggles for life. This behaviour of inspiration and modelling is intermingled with the daily life; and so as to bring out its effects into open, good scales should be developed. That is why the researcher aims to find out not only the impact of these productions in terms of shopping behaviour and time planning, but also their reflection on the daily behaviour.

## SIGNIFICANCE

In the end of 45 years, television series gained an important position in planning the daily life for the Turkish viewers. Therefore, it is necessary to analyse the impact of these productions which are in the very centre of life on daily lives.

In our country where more than 70 productions are aired a year (Özertem & vd., 2014), it will not be wrong to say that series are the leading productions from which the society is fed to a great extent. Thus, their impact will guide in understanding the changing dynamics of the society.

Conducted researches are generally based on the educational and theoretical communication perspectives. Today, revealing the attitudes is far more important than finding out at what rate the contents are presented to the viewers as most of the time, communication is actually what people want to see and hear. The studies concerning the types, themes and functioning of the productions continue with assumptions after some point. Yet, their impact on the target audience should also be analysed. Certainly, it is also taken into consideration that this is like a relay race, and without having the other data this study will not be able to accomplish the aims. As the population of this study consists of the students of the faculty of communication who are going to be communication professionals of the future, it is believed that the study will set forth significant results in terms of the tendencies of tomorrow's trend creators. It is assumed that their perspectives will provide a projection to the future.

The data obtained in this study involving the students of the Faculty of Communication in Sakarya University will

1. Measure the connectedness created by their series watching behaviour
2. Reveal whether these tendencies are perceived as an escape in terms of uses and gratifications theory or not
3. Determine the impact of the series they watch on their choices of daily clothing
4. Show the impact of the series on daily conversations in terms of oral communication culture as well as on gestures and mimics
5. Determine to what extent they are inspired from or model what they see in the series in understanding and solving daily problems
6. Show the impact of the series they watch on the wishes and desires in terms of identification
7. Try to answer the questions concerning the choice and use of personal belongings in terms of more intellectual factors

## REVIEW OF LITERATURE

From the very first moment, humankind has been in an effort to exist and has struggled for the things they determined or needed in order to realise this effort. Abraham Maslow was the one who described these needs the best. With the pyramid model he developed, he asserted that as the lives of people develop, their needs are increased and get complicated. Physiological needs like eating and drinking (hunger-thirst) are at the lowest part of the pyramid, that is, the basic needs. After these needs are fulfilled, new needs emerge. With this description, Maslow changed the horizon of social sciences (Maslow, 1943). The new needs are security and safety, social belonging, to love and to be loved, to be valued, success, esteem, and most importantly, self-actualisation (Cüceloğlu, 2004, p. 236). Today, these needs have not totally changed but transformed, and within the changing circumstances, new struggles and interests emerged for the humankind. The most important need for today's human beings, namely, the individuals of the modern society is to be connected with the world because there are more communication opportunities compared to the previous century. New needs emerged for this state of connectedness or this process. Researches have determined that the emergence of these needs and their impact are actualised by the mass media to a great extent. Elihu Katz who has analysed this kind of tendencies and needs came up with the model that would provide an insight to today's dynamics half a century ago (Katz, 2010).

This is because the individuals of the modern period want to fulfil their psychological needs. They consider this as distancing or an escape, relief or entertainment and plan their time. The most effective cure for these psychological needs is certainly the mass media. Setting off from these findings, Katz and his friends developed uses and gratifications theory and analysed the media or the mass communication means, along with their target audience, in other words, the society, and put forth their interaction with each other. These studies have paved the way for the development of new researches and models. According to McQuail and Windahl (2010), Blumler's and Katz's work have been determinative in the emergence of the concept of active audience, and therefore, in the finalization of the theory (Alioğlu, 2016). Tracing the uses and gratifications, they scrutinized the social and psychological needs that the mass media create, and developed the theory. Uses and gratifications researches focus on the question of 'What do people do with the media?' against the question of 'What does the media do to people?' (Denis & Windahl, 2005, p. 166).

Trying to understand what the users of mass media basically think or feel, Klapper defined these media as a 'means of escape' and a functional tendency. According to Klapper, mass media helps to form the common ground for relief, boosting imagination, providing the opportunity for an interaction on behalf of somebody else, and social relationship (Denis & Windahl, 2005, p. 167).

Since people try to satisfy their desires and wishes according to their own needs or to what they get from the contents they follow, studies on uses and gratifications mainly try to describe how people fulfil their essential needs through media.

Using mass media as a means of escape can be considered sometimes as isolation, sometimes as getting lost. Katz and Foulkes warn that this escape action should never be considered as a means to take people from one point to another. For example, television watching behaviour of the children who have problems in their families is high; but most of these children take this action not to solve these problems but to be away from them (Katz & Foulkes, 1962).

As for the relation between the term connectedness and the series, Russell and his friends have used this concept to put forth the interaction between the people and the series they watch with the scale they developed. According to this, people perform new behaviour with what they like in the things they watch. This is actualised sometimes as an inspiration, sometimes as an imitation, and sometimes as a mood (Russell, Norman, & Heckler, 2004).

The previous studies concerning television watching habits and their effects have tried to put forward the forms of consumption and their behavioural consequences. Erjem and Çağlayandereli (2006) have tried to examine the effects of television contents in terms of learning behaviour via modelling which is included in the social learning theory. The study revealed the impact of the series the youth watched on their daily lives. One of the striking findings is that the attitude to like or dislike the heroes depending on their appearance is related with the 'personal traits' of the characters. Researchers have found out that personality is much more important in the perception of the youth. Yet, this changes depending on the socio-demographical features such as income, education, the social class of their families. It is understood that when the levels of income and education are high, the modelling intention decreases. Furthermore, Özçetin (2010) analysed TV watching habits in terms of uses and gratifications and evaluated the effectiveness of the previous audience scanning researches. The researcher claims that a more sociological approach is necessary in terms of the cultural, practical attitudes, and the identities that define the target audience. His most significant criticism is about the intention of most of the studies to understand the television audience according to the demographical features. It is emphasised that this intention leaves out many questions, and that it is not right to leave the answers to these questions to future studies. It has been observed that this results from the lack of a sociological perspective, and similar studies are mostly based on psychological reductive interpretations. For instance, in such studies, the motivations and satisfaction conditions that describe the attitudes of masses, individuals are revealed; however, what creates these motivations and satisfaction conditions which constitute these attitudes has not been determined. One of the studies as a candidate to sweep away Özçetin's criticism has been carried out by Demir and Demir (2013), and it has been found out that the series create some effects, more precisely, expectations on the target audience which were not estimated. It has been concluded that sometimes the audience change position from active to passive, which is one of the results that Katz's theory, which assumes that the target audience is completely in an active role, failed to calculate. So as to exemplify this, it has been pointed out that the perception of reality increases when real products are used in the series and this creates a desire intention for these products which means that new needs and tendencies emerge. Moreover, Damlapınar (2008), in his study based on cultivation perspective, asserted that the rate of the acceptance of the reality presented by the productions on television as the social or current reality was high. Additionally, Köse's (2012) study which focuses on the impact of TV series on the daily language has put forward findings concerning the detection and use of the expressions, denotations, idioms that have entered the daily language. It has been found out that the youth do not show a complete voluntarily participation in the parlance of the domestic television series and is aware of when to limit this. İlhan and Ulusoy (2013) who examined TV watching habits and their reflections in terms of addiction have explained the motivation for watching television as 'to make oneself isolated from the real world for a period of time in order to run away from the problems'. Although it has been based on the research of American Psychologists Association that consumption of more than 2 hours is classified as excessive use, when the condition in Turkey or the fact that digital advancements have been placed in the centre of lives is taken into consideration, a new definition of period should be made. Taş and Yalçınkaya (2015) who have analysed the impact of the school-themed TV series on the students in the view of their teachers have come up with striking results. The data obtained have revealed that the educators do not feel comfortable about these series. The teachers have stated that the characters in the series do not have constructive effects on the students. The educators have emphasised that the negative behaviour in the series create negative effects on school life.

## METHODOLOGY

### Problem

What is the impact of connectedness to television series on the lives of university students? The sample of Sakarya University Faculty of Communication.

### Subproblems

1. Is there a significant difference between the escape from real life which is one of the motivations of watching television series and the demographical factors?
2. Is there a significant difference between the series that can be perceived as a means of escape and age, daily television watching time and the preferred genres?
3. Do they model the clothes and the hair styles of the characters in the series?
4. Is there a significant difference between the imitation behaviour concerning the discourse and style of speaking used in the series and the demographical factors and the forms of television watching?
5. Is there a significant difference between modelling the series in solving the problems of real life and other factors?
6. Is there a significant difference between the wishes and desires that the series create and the demographical and other variables?
7. Is there a significant difference between the interest in intellectual things that the series present and the demographical factors and television watching habit or the preferences?

### Research Model

For decades, thousands of researches have followed the way opened in the 19<sup>th</sup> century by Auguste Comte and later by his follower Emile Durkheim. Today, research in social studies falls into two distinct types: Quantitative or qualitative. Some studies combine both. Preferring a quantitative approach as the research paradigm requires the use of experiments, statistics and surveys. The reason for preferring this kind of a positivist method is that the results will be objective, repeatable, and the same even when the sample is changed; that is, the absolute and testable results will be reached (Gunter, 2000, p. 4).

The most widely-used of these techniques is survey study. Survey, which is a fully-structured scientific research technique, is applied to a certain fraction which is assumed to represent the society in order to reveal the general opinions and tendencies of the society (Edmonds & Kennedy, 2017, p. 133).

After the subject of the study has been determined, aiming to analyse the preferences of series which is a more limited tendency among television watching behaviour, along with their impact on daily uses, firstly, the literature has been searched and this background has been formed. Then, the research design has been determined and a constant design has been chosen for the hypotheses that are to be tested before and after the research to remain the same. By this way, it is aimed that the intention determined before the research will not change. As for the design, descriptive constant design has been preferred so as to make it understandable what the data mean by the help of tables, graphics and numerical summaries (Özdemir, 2000, p. 19).

### Population

The population of the study consists of students aged 17 and over as it is thought that they are the biggest audience of series. The university students, especially the students of the faculty of communication are assumed to be more interested and to have a deeper perspective.

### Sample

The sample in this study has been made up of 110 people that were selected with the appropriate sampling method from the students of the Faculty of Communication in Sakarya University. In appropriate or convenience sampling method, the subjects are selected because of their convenient accessibility and proximity to the researcher. The process of selection continues until the desired size of the sample is reached (Robson & McCartan, 2016, p. 144). Furthermore, it is apparent that selecting the sample from the future communication professionals will also provide an observation concerning the tendency of the future productions.

### Data Gathering Tool

The data gathering tool of the study has been realised by using the assessment and evaluation tools that were published in 2004 by Cristel Antonia Russell, Andrew T. Norman and Susan E. Heckler in their study (Russell, Norman, & Heckler, 2004).

Consumption of television programmes: The survey study which is used in the development and verification of the connectedness scale has been formed in compliance with the likert scale and is an approved study. For the survey study that was published in the *Handbook of Marketing Scales* (Beardan, 2011), the responsible author Cristel A. Russell has been contacted and permission has been taken.

### Data Analysis

The data obtained from the survey study has been analysed through quantitative data analysis. In order to meet the aim without deviation, the quantitative data has been analysed by SPSS programme. In the analysis, firstly, the general tendencies were put forth by calculating the percentages; then, with t-test and one way Anova analysis, the impact of series watching behaviour on the daily lives in terms of connectedness were tried to be understood. Thus, it has been measured whether there is a significant difference between the tendencies or not.

### Limitations

The research is limited with the students of the Faculty of Communication in Sakarya University and the population is formed in this way. The survey was applied to the 2017 Fall Semestre students of the Departments of Journalism and Communication Design and the Media. Due to the need of convergence, participants have been limited to 110 people.

### FINDINGS

The data has been analysed in terms of demographical factors (age and sex) and television watching habits and preferences by SPSS and has been transformed into tables.

Then, by t-Test and Anova analysis, whether there is a significant difference or not has been determined in terms of escape, fashion, imitation, wish/desire and personal belongings preferences.

### FREQUENCY CHARTS

The percentage distribution obtained by the results gathered after the data was analysed by SPSS is as follows:

**Table 1. What is your gender?**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
<b>Female</b>	55	50.0	50.0	50.0
<b>Male</b>	55	50.0	50.0	100.0
<b>Total</b>	110	100.0	100.0	

As it is seen in Table 1, the gender distribution of the survey participants was on equal levels. That is to say, 55 people were female and 55 people were male.

**Table 2. How old are you?**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
<b>17-19</b>	17	15.5	15.5	15.5
<b>20-22</b>	81	73.6	73.6	89.1
<b>23-25</b>	9	8.2	8.2	97.3
<b>Other</b>	3	2.7	2.7	100.0
<b>Total</b>	110	100.0	100.0	

As it is seen in Table 2, most of the survey participants (73%) were between the ages of 20-22. It is followed by the ones between the ages of 17-19 (15.5%). The sum of the ones in the group over 23 years was approximately 11% (10.9).

**Table 3. Daily television watching tendency**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
<b>0-2</b>	93	84.5	84.5	84.5
<b>2-4</b>	17	15.5	15.5	100.0
<b>Total</b>	110	100.0	100.0	

In Table 3, the daily television watching habits of the participants are presented. The participants gathered around only two options. The large majority (84.5%) indicated that they watch television for less than 2 hours, and the rate of the ones who watch television for 2-4 hours was very low (15.5%). Even though there was another option as watching television for more than 4 hours, none of the participants marked this option.



**Table 4. What type of series do you watch the most?**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
<b>Comedy</b>	39	35.5	35.5	35.5
<b>Romantic-Drama</b>	23	20.9	20.9	56.4
<b>Historical</b>	14	12.7	12.7	69.1
<b>Action</b>	34	30.9	30.9	100.0
<b>Total</b>	110	100.0	100.0	

Table 4 shows the type of series the participants preferred. The most preferred series was comedy series with 35.5%. The second most preferred series was action series (30.9%) followed by romantic drama series with 20.9%. The type of series that was found out to be the least preferred was the history category.

**Table 5. Watching series is an escape for me**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
<b>Strongly Disagree</b>	22	20.0	20.0	20.0
<b>Disagree</b>	32	29.1	29.1	49.1
<b>Neither Agree Nor Disagree</b>	23	20.9	20.9	70.0
<b>Agree</b>	27	24.5	24.5	94.5
<b>Strongly Agree</b>	6	5.5	5.5	100.0
<b>Total</b>	110	100.0	100.0	

A large majority of the participants did not consider watching series as an escape. The participants who strongly disagreed (20%) and who disagreed (29.1%) constituted almost the half. While the percentage of the participants who neither agreed nor disagreed was 20.9%, the ones who agreed (24.5%) and who strongly agreed (5.5%) were below the majority.

**Table 6. Watching series make me forget my daily problems**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
<b>Strongly Disagree</b>	17	15.5	15.5	15.5
<b>Disagree</b>	28	25.5	25.5	40.9
<b>Neither Agree Nor Disagree</b>	24	21.8	21.8	62.7
<b>Agree</b>	33	30.0	30.0	92.7
<b>Strongly Agree</b>	8	7.3	7.3	100.0
<b>Total</b>	110	100.0	100.0	

The participants who thought watching series made them forget their problems constituted of the ones who agreed (30%) and the ones who strongly agreed (7.3%). While 21.8% of the participants neither agreed nor disagreed, the sum of the ones who stated negative opinions (Strongly disagree 15.5%, Disagree 25.5%) was over 40%.

**Table 7. If my mood is low, watching series makes me feel better.**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
<b>Strongly Disagree</b>	9	8.2	8.2	8.2
<b>Disagree</b>	18	16.4	16.4	24.5
<b>Neither Agree Nor Disagree</b>	27	24.5	24.5	49.1
<b>Agree</b>	47	42.7	42.7	91.8
<b>Strongly Agree</b>	9	8.2	8.2	100.0
<b>Total</b>	110	100.0	100.0	

In this question which tried to measure the impact of watching series on the moods of people 42.7% of the participants agreed. The percentage of the participants who neither agreed nor disagreed was 24.5%, and who

disagreed was 16.4%. The percentages of the ones who strongly disagreed and who strongly agreed were the same, to be exact, 8.2%.

**Table 8. I like the clothes in the series**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
<b>Strongly Disagree</b>	16	14.5	14.5	14.5
<b>Disagree</b>	24	21.8	21.8	36.4
<b>Neither Agree Nor Disagree</b>	23	20.9	20.9	57.3
<b>Agree</b>	34	30.9	30.9	88.2
<b>Strongly Agree</b>	13	11.8	11.8	100.0
<b>Total</b>	110	100.0	100.0	

Table 8 shows the interest in the costumes in the series. While the highest percentage was the ones who agreed (30.9%), the lowest percentage was the ones who strongly agreed (11.8%). The percentages of the participants who disagreed was 21.8%, who neither agreed nor disagreed was 20.9%, and who strongly disagreed was 14.5%.

**Table 9. I like the hair styles and the haircuts in the series**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
<b>Strongly Disagree</b>	14	12.7	12.7	12.7
<b>Disagree</b>	19	17.3	17.3	30.0
<b>Neither Agree Nor Disagree</b>	28	25.5	25.5	55.5
<b>Agree</b>	40	36.4	36.4	91.8
<b>Strongly Agree</b>	9	8.2	8.2	100.0
<b>Total</b>	110	100.0	100.0	

Table 9 reveals the interest towards the hair styles and haircuts in the preferred series. The highest finding was 36.4% (Agree). The second high percentage consisted of the ones who neither agreed nor disagreed as 25.5%, and it was followed by 17.3% of the participants who disagreed. While the percentage of the ones who strongly disagreed was 12.7%, the percentage of the ones who strongly agreed was 8.2%.

**Table 10. I try to buy the clothes I see in the series**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
<b>Strongly Disagree</b>	58	52.7	52.7	52.7
<b>Disagree</b>	30	27.3	27.3	80.0
<b>Neither Agree Nor Disagree</b>	12	10.9	10.9	90.9
<b>Agree</b>	10	9.1	9.1	100.0
<b>Total</b>	110	100.0	100.0	

In this question which tried to measure the buying behaviour created by the costumes in the series, none of the participants chose the option Strongly Agree. The highest percentage was consisted of the ones who strongly disagreed (52.7%). The percentage of the ones who disagreed was 27.3%. While 10.9% of the participants neither agreed nor disagreed, 9.1% stated positive opinions (Agree).

**Table 11. I sometimes imitate the gestures and mimics of the characters in the series**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
<b>Strongly Disagree</b>	36	32.7	32.7	32.7
<b>Disagree</b>	29	26.4	26.4	59.1
<b>Neither Agree Nor Disagree</b>	10	9.1	9.1	68.2
<b>Agree</b>	30	27.3	27.3	95.5
<b>Strongly Agree</b>	5	4.5	4.5	100.0
<b>Total</b>	110	100.0	100.0	



In Table 11 which shows the results for the question that tried to measure the reflections of favourite series on the daily lives, the highest rate for the opinions concerning the imitation of gestures and mimics was observed in negative direction. While 32.7% of the participants strongly disagreed, 26.4% of the participants disagreed. The percentage of the ones who agreed was 27.3%, whereas the percentage of the ones who strongly agreed was 4.5%. 9.1% of the participants neither agreed nor disagreed.

**Table 12. From time to time, I realise that I use the dialogues and expressions in the series called ... in my daily conversations**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
<b>Strongly Disagree</b>	21	19.1	19.1	19.1
<b>Disagree</b>	18	16.4	16.4	35.5
<b>Neither Agree Nor Disagree</b>	19	17.3	17.3	52.7
<b>Agree</b>	43	39.1	39.1	91.8
<b>Strongly Agree</b>	9	8.2	8.2	100.0
<b>Total</b>	110	100.0	100.0	

The results for the question concerning the reflection of favourite series on the daily lives in terms of the impact on daily language are shown in Table 12. The highest percentage was observed with the participants who agreed (39.1%). 19.1% of the participants strongly disagreed, and 16.4% of the participants disagreed. 17.3% of the participants neither agreed nor disagreed and 8.2% of the participants strongly agreed.

**Table 13. I try to talk like the characters in the series**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
<b>Strongly Disagree</b>	41	37.3	37.3	37.3
<b>Disagree</b>	37	33.6	33.6	70.9
<b>Neither Agree Nor Disagree</b>	16	14.5	14.5	85.5
<b>Agree</b>	15	13.6	13.6	99.1
<b>Strongly Agree</b>	1	.9	.9	100.0
<b>Total</b>	110	100.0	100.0	

Another table that illustrates the results concerning the impact of the series on daily language is Table 13. It is observed that the action of talking like the characters was not realised at a high rate. 37.3% of the participants strongly disagreed and 33.6% of the participants disagreed. 16% of the participants neither agreed nor disagreed and 15% of the participants agreed. Only one participant strongly agreed whose sampling rate was 0.9%.

**Table 14. While watching series, I learn to overcome the problems I face in real life**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
<b>Strongly Disagree</b>	34	30.9	30.9	30.9
<b>Disagree</b>	40	36.4	36.4	67.3
<b>Neither Agree Nor Disagree</b>	18	16.4	16.4	83.6
<b>Agree</b>	17	15.5	15.5	99.1
<b>Strongly Agree</b>	1	.9	.9	100.0
<b>Total</b>	110	100.0	100.0	

Table 14 shows the results about the behaviour of taking the series as a guide and being inspired concerning the attitude towards the events that are faced in real life. The vast majority stated negative opinion. The percentage of the participants who strongly disagreed was 30.9% and who disagreed was 36.4%. While 16.4% of the participants neither agreed nor disagreed, 15.5% of the participants agreed. Only one participant strongly agreed whose rate among the whole was 0.9%.

**Table 15. While watching series, I learn how to treat the people in my life**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
<b>Strongly Disagree</b>		36	32.7	32.7
<b>Disagree</b>		35	31.8	64.5
<b>Neither Agree Nor Disagree</b>		17	15.5	80.0
<b>Agree</b>		19	17.3	97.3
<b>Strongly Agree</b>		3	2.7	100.0
<b>Total</b>		110	100.0	100.0

Table 15 presents the findings concerning the imitation behaviour resulting from watching series and the attitudes towards similar problems and events. Once more, most of the participants stated negative opinions. 32.7% of the participants strongly disagreed and 31.8% of the participants disagreed. While 17.3% of the participants agreed, the number of the ones who strongly agreed was 3 which correspond to 2.7% of the participants. The percentage of the participants who neither agreed nor disagreed was 15.5%.

**Table 16. I associate the events in the series with the events in my life**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
<b>Strongly Disagree</b>	22	20.0	20.0	20.0
<b>Disagree</b>	28	25.5	25.5	45.5
<b>Neither Agree Nor Disagree</b>	24	21.8	21.8	67.3
<b>Agree</b>	31	28.2	28.2	95.5
<b>Strongly Agree</b>	5	4.5	4.5	100.0
<b>Total</b>	110	100.0	100.0	

In Table 16, the results concerning the attitudes of the participants towards the events depicted in the series and their behaviour of relating these events to real lives are shown. Even though the majority stated negative opinions, the most frequently occurred response was Agree (28.2%). The percentage of the participants who strongly agreed was 4.5%, whereas 20% of the participants strongly disagreed. Yet, the second highest rate consisted of the ones who disagreed as 25.5%. Another high percentage was observed for the ones who neither agreed nor disagreed as 21.8%.

**Table 17. I would like to act in the series called ...**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
<b>Strongly Disagree</b>	23	20.9	20.9	20.9
<b>Disagree</b>	23	20.9	20.9	41.8
<b>Neither Agree Nor Disagree</b>	14	12.7	12.7	54.5
<b>Agree</b>	29	26.4	26.4	80.9
<b>Strongly Agree</b>	21	19.1	19.1	100.0
<b>Total</b>	110	100.0	100.0	

The most frequently occurred response for the question concerning acting in a favourite series was observed with the ones who agreed (26.4%). It is followed by the ones who strongly disagreed (20.9%) and the ones who disagreed (20.9%) with equal percentages. The percentage of the participants who neither agreed nor disagreed was 12.7%, and who strongly agreed was 19.1%.

**Table 18. I would like to meet the characters in the series**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
<b>Strongly Disagree</b>	13	11.8	11.8	11.8
<b>Disagree</b>	7	6.4	6.4	18.2
<b>Neither Agree Nor Disagree</b>	16	14.5	14.5	32.7
<b>Agree</b>	51	46.4	46.4	79.1
<b>Strongly Agree</b>	23	20.9	20.9	100.0
<b>Total</b>	110	100.0	100.0	

It is presented in Table 18 that the vast majority of the participants would like to meet the characters in the series. 46.4% of the participants agreed and 20.9% of the participants strongly agreed. The percentage of the ones who neither agreed nor disagreed was 14.5%. The percentage of the participants who strongly disagreed was 11.8% and who disagreed was 6.4%, sum of which constitutes the ones who stated negative opinions.

**Table 19. I have bought accessories, books, posters, etc. of the series called ...**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
<b>Strongly Disagree</b>	58	52.7	52.7	52.7
<b>Disagree</b>	36	32.7	32.7	85.5
<b>Neither Agree Nor Disagree</b>	6	5.5	5.5	90.9
<b>Agree</b>	9	8.2	8.2	99.1
<b>Strongly Agree</b>	1	.9	.9	100.0
<b>Total</b>	110	100.0	100.0	

Table 19 illustrates the results showing the reflection of buying behaviour of the participants in terms of books, posters or accessories emerged as an effect of the series. The vast majority stated negative responses. 52.7% of the participants strongly disagreed and 32.7% of the participants disagreed. While 8.2% of the participants agreed, 5.5% of the participants neither agreed nor disagreed. Only one participant strongly agreed whose rate among the whole was 0.9%.

**Table 20. I have read/am reading books about the series called ...**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
<b>Strongly Disagree</b>	48	43.6	43.6	43.6
<b>Disagree</b>	36	32.7	32.7	76.4
<b>Neither Agree Nor Disagree</b>	12	10.9	10.9	87.3
<b>Agree</b>	11	10.0	10.0	97.3
<b>Strongly Agree</b>	3	2.7	2.7	100.0
<b>Total</b>	110	100.0	100.0	

In Table 20, it is observed that the vast majority stated negative opinions about buying and reading books as an impact of the series. 43.6% of the participants strongly disagreed and 32.7% of the participants disagreed. The percentage of the participants who neither agreed nor disagreed and who agreed was 10%. Only 3 people strongly agreed whose rate among the whole was 2.7%.

#### **INDEPENDENT t-TEST APPLICATION**

In order to measure whether there is a significant difference ( $p \leq 0.05$ ) concerning the questions in terms of demographical factors, an Independent t-Test has been conducted. As a result of the tests, a significant distance was found only in one of the questions. The data concerning the significant difference is as follows:

**Table 21. Independent t-Test by Gender ( $\alpha < 0,05$ )**

		F	Sig.	T	df	Sig. (2-tailed)
I try to talk like the characters in the series	Equal variances assumed	3.253	.074	-1.982	108	.050
	Equal variances not assumed			-1.982	104.901	.050

Table 21 presents the only significant difference ( $p \leq 0.05$ ) found in the question “I try to talk like the characters in the series” with the application of Independent t-Test by gender. When the means in gender distribution is examined, it is observed that the males ( $=2.27$ ) had more tendency to talk like the characters in the series in their daily lives than females ( $=1.87$ ).

Since there was no other demographical factor with two options in the scale, another Independent t-Test was not conducted.

**ANALYSIS OF VARIANCE (ONE-WAY ANOVA)**

No significance difference ( $p \leq 0.05$ ) was found between the age groups of the participants (17-19, 20-22, 23-25 and other) and the questions. Also, in the one-way Anova analysis concerning the daily TV watching habits, no significant difference was found. However, two significant differences were found in the one-way Anova analysis concerning the series preferred. They are shown and interpreted in Tables 22, 23, 24 and 25.

**Table 22. One-way Anova analysis concerning the question “I associate the events in the series with the events in my life”**

	Sum of Squares	Mean Squares	F	P
Intergroup	13.101	4.367	3.189	.027
Intragroup	145.163	1.369		
Total	158.264			

A significant difference ( $p:0,027 < \alpha:0,05$ ) was found between the most watched types of series in terms of relating the events in the series with the events in their lives. The details can be interpreted in Table 23.

**Table 23. The descriptive statistics of the One-way Anova analysis concerning the question “I associate the events in the series with the events in my life”**

		N	Mean	Standard Deviation
I associate the events in the series with the events in my life	Comedy	39	2.7436	1.29204
	Romantic-Drama	23	3.3043	1.14554
	Historical	14	2.2143	.69929
	Action	34	2.5000	1.18705
	Total	110	2.7182	1.20497

When we examine the descriptive statistics (Table 23) to find out the reason for the significant difference found in Table 22, it is observed that Romantic-Drama viewers (Mean: 3.3) have been distinctive among others in terms of associating the events in their daily lives with the events in the series. This significant difference is higher especially with the historical series viewers.

**Table 24. One-way Anova analysis concerning the question “I would like to meet the characters in the series”**

	Sum of Squares	Mean Squares	F	P
Intergroup	11.934	3.978	2.759	.046
Intragroup	152.830	1.442		
Total	164.764			

A significant difference ( $p:0,046 < \alpha:0,05$ ) was found between the audience who would like to meet the characters in the series and the types of series. Table 25 indicates that this significant difference is between the

Action series viewers and the others. It is observed that the mean for the Action series viewers' wish to meet the characters in the series as 4.02 is higher compared to the historical (3.1) and comedy series viewers. The significant difference resulted from this factor.

**Table 25. The descriptive statistics of the one-way Anova analysis concerning the question “I would like to meet the characters in the series”**

		n	Mean	Standard Deviation
I would like to meet the characters in the series	<b>Comedy</b>	39	3.3333	1.42040
	<b>Romantic-Drama</b>	23	3.6087	1.23359
	<b>Historical</b>	14	3.1429	1.09945
	<b>Action</b>	34	4.0294	.90404
	<b>Total</b>	110	3.5818	1.22947

## RESULTS

The students that constituted the sample of the study were selected randomly, and the gender frequency has coincidentally been equal. When it comes to the other demographical factor, the age groups, most of the participants (73.6%) were between the ages of 17-19 as the study was conducted in a university environment. A surprising finding has been observed in the measurement of television watching habits that none of the participants spend more than 4 hours in front of the television. This data might be the consequence of the fact that the youth do not watch the series or their favourite programmes when they are aired anymore; they watch them on digital platforms. This data can be interpreted as the youth has pushed away television as a means of watching. The most watched type of series has been comedy with 35.5% followed by action series. Despite the current number of historical series and the television audience measurement results, the students of the faculty of communication are among the ones who prefer such productions the least.

Even though the number of the ones who considered watching series as an escape (total 30%) was lower than the ones who did not (49.1%), with the question of “Watching series make me forget my daily problems” the rate increased (37.3%), and it reached dramatic levels (50.9%) with the question concerning the impact of watching series on the moods of people.

When the participants' preferences about fashion are examined in terms of their interests concerning the hair styles and costumes in the series, it is observed that they responded positively about the costumes (30.9%) and the hair styles (36.4%); however, when it comes to buying these, 80% of the participants have opposed it. Moreover, it is remarkable that it is the only question in which the option “Strongly agree” was not chosen. It seems that the youth is not willing to express that they are influenced about fashion by television or they use other media for this. The current and future social media studies can reveal some findings to support this argument.

It has been revealed that there was no tendency for imitation in terms of nonverbal communication (59%), whereas the styles of speaking in the series were found out to be modelled by the participants (48.1%). The youth may be doing this deliberately or they may not be aware of the gestures and mimics they imitate. Another interesting result has come up with the question concerning the tendency to speak like the characters in the series. 70.9% of the participants have stated that they do not take the characters as a role model. How it is possible not to imitate the characters while using their expressions in conversations may be another research question.

The responses concerning modelling the series by relating them to real life have indicated different results. Although the participants stated that they did not learn to overcome the problems in real life (67.3%) or how to treat people (64.5%) by being inspired by the series, they demonstrated equal distribution in relating the events in the series to the events in their lives. This approach may also be an expression of “I am not going to learn life from series”.

The university students who stated negative responses concerning acting in the series did not hold the same opinion about the characters in these series. The motivation behind their wish to meet them can be explained by modelling or wish/desire factors.

The fact that the youth has mostly demonstrated a negative attitude about their choices of personal belongings related with the series, especially books or posters may have resulted from the understanding that in Turkey, promotional activity is not considered as a part of the production process. On the other hand, world giants (*Game*

of *Thrones*, *Breaking Bad*, etc.) regard this process as a whole; and sometimes the income from promotions reaches considerable amounts.

The question whether the result indicating that the males have more tendency to talk like the characters in the series in their daily lives than females requires a generalisation or not is another research topic. This may be the consequence of the dialogues and characters in the series aired in this period which seem to address males more. It should be remembered that once there were many female viewers who talked like the woman characters in the popular series like *Avrupa Yakası*.

The result indicating that the viewers of Romantic-Drama series related the events in their real lives with the fictive events in these series more often can be interpreted as the emotional needs are satisfied better with these productions. However, the fact that the characteristics of the period series are determinative should be remembered. It should also be taken into consideration that the language and the social behaviour patterns in period series do not reflect contemporary examples but the tendencies of that specific period.

Considering the characters, the feeling of reality, and the need of reality, the result showing that the viewers of action series are willing to meet the characters in these productions more can be explained with the excitement factor. Furthermore, before such an observation, it should be noted that televisions have relied heavily on action series because of the traumas the country has recently been through. Moreover, it should be taken into consideration that aforementioned series have been aired in the best hours, written by the best scriptwriters, and have included the best actors and actresses. Therefore, it can be concluded that the finding indicating that the characters in these productions gained appreciation is understandable.

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## HOW DO FORMATS AND INFORMATION PRESENTATION MODALITIES INFLUENCE VIEWER'S RECALL, RECOGNITION AND BRAND AWARENESS?

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### ABSTRACT

This paper tests through the five-minute video, which was produced in a Web content format reflecting the consumption patterns of young consumers in snack culture age. This study examines how do contents format such as documentary format and entertainment format, and information presentation modality such as visual modality and audio-visual modality influence viewers' memory and attitude for information through experimental research method. Depending on the contents format, significant differences were found in viewer's recall and attitude, except for recognition. For viewer's recall, the entertainment format ( $M=3.341$ ) was found to be more effective than documentary format ( $M=3.096$ ). For attitudes, documentary format ( $M=3.180$ ) showed a more positive attitude than the entertainment format ( $M=2.508$ ). The results of recognition and attitude were statistically significant based on information presentation modalities (visual, audio-visual), excluding recall. For recognition and attitude, the audio-visual information was higher than the visual information. The interaction effects of content formats and information presentation modalities on recall, recognition and attitude were not statistically significant ( $F=.007, p=.932$ ). The interaction effects of content formats and information presentation modality on recall have been shown to be statistically insignificant. Two-way interaction effects of the contents format and information presentation modality to recognition were statistically significant ( $F=25.260, p<.001$ ). The effects of the interaction of contents formats and informational presentation modalities on attitudes were not statistically significant. Attitudes based on contents formats are different, but differences in information presentation modalities are not significant. Young consumer's focus on web contents is weakening. In this regard, consumers' recall and recognition and brand awareness of web content are important for enhancing the effectiveness of communication.

**Keywords:** format, visual, audio-visual info, recall, recognition, brand awareness

### INTRODUCTION

The 'snack culture', which is the new culture consumption trend where people watch drama and entertainment with a short clip of 3 to 5 minutes regardless of the location, has settled in mobile media age. Young consumer's focus on web contents is weakening.

As the use of contents through mobile devices has spread, preference for media formats is changing. Young consumers usually use video clips that show three to five minutes of drama or entertainment instead of a 40-50-minute TV program.

The concentration of mobile content users is decreasing. Concentration is the ability to focus and immerse oneself in one place over a limited period of time. Concentration is a long-term memory of understanding, primarily in the left side of the brain. Memory is, moreover, an important element in the digital environment. As presented in the Limited capacity model of the processing of the mediated message in Lang (Lang, 2000, 2006), because the user's mental resources are limited, they experience a cognitive overload that fails to handle all of the information provided. As a result, users may actually consume content but not have the communication effect.

It is also widely linked to the storage of memories, which reconstructs key information to remember. They can cut, add, decorate and distort memories. This coordination is a working memory. The working memory forms the schema over time and remains the brand awareness. Memory is a major factor in checking the effectiveness of learning. Memory differs in influence according to information presentation modalities. A variety of new forms of information expression in mobile communication are used to integrate disparate information types such as video, text, and voice into a single medium. It is evolving from text-oriented to graphic, animation, and video. The concept of memory in cognitive processing of information presentation patterns in mobile environments is sometimes defined as the ability to properly position visual and auditory information within existing knowledge, experience, and conceptual understanding and context. In this regard, consumers' recall and recognition and brand awareness of web content are important for enhancing the effectiveness of communication.

This study examines how do contents formats and information presentation modalities influence viewer's recall, recognition and brand awareness for information. This paper sets up the docu-format and entertainment-format

as the media contents format and measures recall, recognition and brand awareness depending on these formats. This paper divides the visual modality and audio-visual modality as the information presentation modalities and measures recall, recognition and brand awareness depending on the modalities.

**LITERATURE REVIEW**

*Communication effect by contents format.*

Formatting is the form and order in which the information is organized. In a broadcast program, the format refers to the essential elements, appearance and style of the program maintained throughout each episode of the series. The format of the past was understood as the basic idea, composition, and development process of a television series. The current format is conceptualized as a package containing all the programming, or as a strict meaning targeted for remake or traded through contract (Shim, Doobo, 2017).

The format for export consists of 'bible', 'flying producer' and 'business kit'. 'Bible' is a manual that details how to organize a program, which character is the right person for the MC, where the camera should be and how to size it. 'Flying producers' will be sent from the format exporting country to the format importing country. He & she is the advisor for the proper production of the program. 'Business kits' explain more in detail. It also provides a good position and how to promote programs. 'Business kits' also include a list of advertisers and the type of PPL.

Providing the same message in different formats can enhance the effectiveness of the message, not only because of increased access to the information, but also because people are interacting and interacting with the message in different ways. Depending on the type of message that major media such as newspapers and TV send out, the message's signifier is likely to change. Posters and magazines tend to present messages in language and visual strategies, but television tends to generate viewers' interest by providing more visual and auditory cues and maintain interest through reports of diversity and personal interest (McQuail, 2005). There is also a tendency to become less perceptive as a story by first becoming involved in entertainment elements. In particular, tension or expectations about the story make it difficult to contemplate the message in detail (Kim Soyoon, Lee Hyunou, 2007). A study on the communication effects of formats analyzed the impact of recall and recognition by comparing the pre and post program ad format and intermediate ad formats (Hong, Jongpil & Lee, Youngah, 2010). Research has found that the intermediate ad format recalls and recognizes a larger number of brand names and ad messages than the pre and post program ad format. The format of the intermediate ad format has been shown in a more effective way than the pre and post program ad format, as it facilitates the user's memory of advertisements.

Table 1 Comparison of contents format between documentary format and entertainment format

	<b>Documentary format</b>	<b>Entertainment format</b>
	<b>&lt;Knowledge Channel ©&gt;</b>	<b>&lt;SNL Korea Special Lecture&gt;</b>
<b>Time</b>	An average of five minutes	An average of five minutes
<b>Configuration</b>	Subtitles, Still Cut, Video	Subtitles, Narrative narration, Video
<b>Format</b>	A super-mini documentary	A mixed entertainment
<b>Information Presentation Mode</b>	Visual + audible(background tone)	Visual + audible(background tone + narration)

*Communication effect by information presentation modalities.*

Effectiveness studies based on message presentation modalities mainly deal with the effects between types of media, communicator, and messages. Message delivery forms appear to affect the understanding and persuasion of the message and attitude changes (Andreoli & Worschel, 1978; Chaiken & Egly, 1976; 1983).

Mainly, message presentation modalities are divided into visual and auditory information. Researchers claim that using multiple informational formulas facilitates learning. They argued that providing learning to use both the hearing and vision of learners is more effective in memory and also activates working memory (Penny, 1989; Low & Serller). Some studies suggest that auditory information affects consumers' attitudes and behaviors and that visual information has a strong effect at the beginning of the message, but that auditory factors work strongly in the second half.

According to Limited capacity model of mediated message processing by Lang, because the mental resources that viewers use at a certain point in time are limited, when large amounts of information are presented, viewers experience cognitive overloads (Lang, 2000, 2006). The effect of news formats such as Pyramid shape and Reverse Pyramid shape: the pyramid shape of the time sequence was shown to influence the understanding and

recall and recognition of viewers (Lang, 2000, 2006). Whether photos and graphics are inserted increases the viewer's news memory (Newhagen & Reeves, 1992; Lang, Newhagen, & Reeves, 1996; Fox et al., 2004). Depending on the format of the online and printed newspapers, news is perceived differently and the agenda provided are taken differently (Althaus & Tewksbury, 2000; 2002). Message presentation modality appear to affect understanding, persuasion, and attitude changes on the message (Andreoli & Worchel, 1978; Chaiken & Eagly, 1976, 1983).

Pavio's dual-coding theory (Pavio, 1990): As learning is presented as auditory and visual information, it is entered into the human sensory memory, respectively. The auditory information is organized by the speech processing system and the visual information is organized by the visual processing system into images. These organized information creates responses through reference links to each other. It is more effective to present information using both visual and auditory at the same time than using either visual or auditory (Mayer & Anderson, 1991).

Cognitive Load Theory (CLT) starts with the premise that human cognitive capacity is limited. When visual and auditory information is presented in media usage learning, the learners will be able to process information without any cognitive load. Effective learning is interrupted when too much learning information is provided.

Cognitive Load Theory (CLT) describes as split-attention effect the phenomenon that too much information distracts the attention of the learners, which reduces learning effectiveness. Previous study compared groups of video + narration with groups of video + narration + subtitles. The result of the experiment showed that groups of video and narration had a high learning effect.

Subtitles are primarily concerned with information delivery, content understanding and attention focus. Text subtitles in advertisements are text coded information provided by the voice. The complexity of these information can lead to cognitive loads (Jung, Kihyun, 2003). News Ticker, a text-messaging information, was also found to have a negative effect on understanding and remembering news information (Lee, Hyemi et al, 2009).

Narration refers to "an explanation or explanation of a story from outside as the scene progresses, without showing up on a scene in a movie, a broadcast play, or a play". The sound effect is sound except speech, music, and commentary, or intentionally added sound.

### Research Question

This study has several questions:

RQ1: What are the recall, recognition and attitude depending on the difference of content formats?

RQ2: What are the recall, recognition, and attitude depending on the difference of information presentation modalities?

RQ3: What is the recall, recognition and attitude depending on the interaction of content formats and information presentation modalities?

### Research Methodology

The five-minute video, which was tested in this paper, was produced in a Web content format reflecting the consumption patterns of young consumers. As an experiment, we produced video related to the subject "fast food" in the modality of documentary like < knowledge channel © > and entertainment format like < SNL Korea >. The first experiment was composed by mashup the video of "Deep Tree" using the format of < Knowledge Channel © >, the representative content of EBS. The second is a 'fast food' conversation in the hit drama 'Dokkaebi', which is based on the format of "SNL Korea Special Lecture" by tvN. Information presentation modalities were presented as visual (video + subtitles) and audiovisual (video + subtitles + narration + music) information.

### Variables

- Formatting refers to the essential elements, appearance, and style of a program and refers to a scheme or form that contains the core of a particular program.
- Information presentation modality refers to a combination of visual and visual information. Visual information is defined by images and subtitles, and audio-visual information is defined by images, subtitles and sounds.
- Memory is defined as working memory. Memory is divided into sensory, working and long-term memory. Working memory refers to the state in which information that progresses in any area of cognitive activity is stored

temporarily. Memory related to information stored in temporary storage that is easily accessible for a short period of time without special effort and repetition. There are two ways to retrieve these memories. It is recall and recognition.

- Brand awareness is the amount of positive or negative emotion a person has about a subject (Thurstone, 1931). That is a learned predisposition to react consistently, and favorably and unfavorably to a target (Fishbein & Ajen, 1975).

## Research Result

### *The effect of viewer's recall, recognition and brand awareness depending on the contents format?*

Depending on the contents format, significant differences were found in viewer's recall and attitude, except for recognition. For viewer's recall, the entertainment format like <SNL Korea Special Lecture> (M= 3.341) was found to be more effective than the documentary format like <Knowledge Channel®> (M=3.096). For attitudes, <Knowledge Channel®> format (M = 3.180) showed a more positive attitude than the <SNL Korea Special Lecture> (M = 2.508).

Table 2 The effect of viewer's recall, recognition and brand awareness depending on the contents format

	Contents Format	Sample Number	Mean	SD	Difference of M	df	t	p
<b>recall</b>	Entertainment SNL	127	3.341	.770	.244	239	2.804**	p<.01
	Documentary KC®	114	3.096	.549				
<b>recognition</b>	Entertainment SNL	127	3.092	1.321	.244	239	2.854	p=.324
	Documentary KC®	114	2.913	1.380				
<b>brand awareness</b>	Entertainment SNL	127	2.508	.564	.179	239	.988***	p<.001
	Documentary KC®	114	3.180	.808				

### *The effect of viewer's recall, recognition and brand awareness depending on the information presentation modality*

The results of recognition and attitude were statistically significant based on information presentation modalities (visual, audio-visual), excluding recall. For recognition, the audio-visual information (M = 3.455) was higher than the visual information (M = 2.575) and the audio-visual information (M = 2.968) was more apparent than visual information) (M=2.706) in the attitude.

Table 3 The effect of viewer's recall, recognition and brand awareness depending on the information presentation modality

	Information presentation modality	Sample Number	Mean	SD	Difference of M	df	t	p
<b>recall</b>	Audio-visual	110	3.188	0.636	-.069	239	-.781	p=.435
	Visual	131	3.257	0.723				
<b>recognition</b>	Audio-visual	110	3.455	1.405	.069	239	.790***	p<.001
	Visual	131	2.575	1.140				

<b>brand</b>	Audio-visual	110	2.968	0.764	.879	239	5.137**	p<.01
<b>awareness</b>	Visual	131	2.706	0.751				

*The effect of viewer's recall depending on the interaction of content formats and information presentation modalities*

The interaction effects of content formats and information presentation modalities on recall, recognition and attitude were not statistically significant ( $F=.007$ ,  $p=.932$ ). The interaction effects of content formats and information presentation modality on recall have been shown to be statistically insignificant.

Table 4 The effect of viewer's recall depending on the interaction of contents formats and information presentation modality

	Sum of square	df	Mean Square	F-value
<b>Contents formats(A)</b>	1.397	1	1.397	.851
<b>Information presentation modalities(B)</b>	42.420	1	42.420	25.843***
<b>Contents formats * Information presentation modalities (A*B)</b>	.012	1	.012	.007
<b>Error</b>	359.479	219	1.641	
<b>Total</b>	2423.000	223		

*The effect of viewer's recognition depending on the interaction of content formats and information presentation modalities*

Two-way interaction effects of the contents format and information presentation modality to recognition were statistically significant ( $F = 25.260$ ,  $p < .001$ ).

Table 5 The effect of viewer's recognition depending on the interaction of contents formats and information presentation modality

	Sum of square	df	Mean square	F-value
<b>Contents formats(A)</b>	30.835	1	30.835	74.143***
<b>Information presentation modalities(B)</b>	5.736	1	5.736	13.792***
<b>Contents formats * Information presentation modalities (A*B)</b>	10.506	1	10.506	25.260***
<b>Error</b>	98.566	237	.416	
<b>Total</b>	2065.375	241		

*The effect of viewer's brand awareness depending on the interaction of content formats and information presentation modalities*

The effects of interaction between content format and information presentation modalities were verified through a two-way ANOVA. The results showed that the two-way interaction effects of content format, visual and audio-visual modalities on brand awareness were not statistically significant ( $F=3.698$ ,  $p=.056$ ). Thus, the hypothesis of study was rejected. Although there is different brand awareness depending on the contents format, it seems that there is no interaction effect as there is no significant difference between the information presentation modalities (visual and audio-visual).

Table 6 The effect of viewer's brand awareness depending on the interaction of contents formats and information presentation modality

	Sum of square	df	Mean square	F-value
<b>Contents formats(A)</b>	3.188	1	3.188	7.078**
<b>Information presentation modalities(B)</b>	.271	1	.271	.603
<b>Contents formats * Information presentation modalities (A*B)</b>	1.666	1	1.666	3.698
<b>Error</b>	106.747	237	.450	
<b>Total</b>	2619.063	241		

## CONCLUSION

Depending on the differences in format, more 'fast food' words and key messages were recalled and recognized. It is shown that sending the same message in different formats can increase information accessibility and enhance message effectiveness. It is more effective to present information using both the visual and auditory at the same time than using either the visual or auditory modalities. This result demonstrates the dual-coding theory and split-attention effect.

It infers that recall and recognition function differently in memory in the process of processing information of human. Recall is the memory of direct withdrawal, and the recognition is the indirect withdrawal. The research result is interpreted although it is seen that entertainment format increases level of attention and sense of immersion, it does not help level of understanding. Although it is single visual information, recognition of images and text is not effective when they are overloaded. Thus, the double-information, audio-visual information is helping the recognition. These findings demonstrate a prior study (Moreno & Mayer, 2002) that provides additional sound to enhance acceptance. Brand awareness can affect long-term memory by cognition, emotion and behavior, and can be expected to form a priori trend to maintain a sustained response. The interaction between content formats and information presentation modalities has enhanced the recognition effect.

Research results have the following implication in terms of web content creation and acceptance. Entertainment format helps the recall and brand awareness. The audio-visual presentation modalities help the recognition and brand awareness. In order to be more receptive when producing web content, it will be important to store it in direct memory in fun and entertainment formats, and to increase the recognition through double information (audio-visual). These will also be useful in shaping brand awareness in the long run. The interaction between the content format and the information presentation modalities affected the recognition. Therefore, it is important to keep in mind in production because the interactions increase understanding.

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## MEDICAL ANIMATION IN EDUCATIONAL VIRTUAL ENVIRONMENTS AND ITS EFFECT ON MEDICAL REALITY PERCEPTION

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### ABSTRACT

Medical animation as a visual simulation is a very effective tool in communicating medical information with more emotional impact, and more compelling, memorable, objective and succinct at a faster rate more dramatically than traditional dry oral or written formats. Medical animation plays multiple roles in shaping the notion of medical reality. It is an integral aspect in teaching, learning, and communication. Animation modules provide patients, medical educators, healthcare professionals with visual support, increasing understanding and retention of important issues, so they can develop mental models to understand the behavior of a complex physical system in the real world. This graphical representative medium doesn't only reflect and report reality, but also filters and shapes understandings of the mechanism of action of a biological system, bio-medical technology, pharmaceutical drug or an anatomical process. This paper demonstrates medical illustrative styles and the use of animation characteristics as an instructional communicative tool for medical educators and patients to experience situations through edugraphic games in a virtual environment that may be difficult to experience in reality. This paper aims to highlight an important question: does medical animation represent reality in a fully accurate or proportional way or it has sometimes false appearance due to the user's perception, or mainly due to subjective impression as well as illustrative manipulations of artists and designers as being creators of visual simulations? So getting misrepresentations and misinterpretations question the credibility of documentation and prediction of medical subjects. Finally, ended to several results the most important are: the variations in illustrative styles in medical animation depicting the movements, process of the inner workings of biomedical issues depend on spatial and temporal design considerations, perspectives, angles of views of the illustrated elements and techniques used to create proportionally accurate motion visualization in a virtual environment. Continuous co-operation between scientists and creators as media artists, designers and animators has to take place in order to achieve scientific validation of the illustrated reconstructed models and to maintain accuracy, consequently affecting the communication and perception process.

### INTRODUCTION

Visualizing complex and dynamic medical scenarios is the key in the analysis and understanding of these scenarios. Medical animation as a reality depicting visual medium plays a fundamental role in the notion of medical information and health care culture. (Patrick 2018; Hajar 2011; Stephen et al 2005; Oai & Ning 2013) For patients and low health literacy people animated videos have been found to be effective, eye-catching in providing information, as it is perceived as familiar and accessible across age groups, cultures and literacy levels, it may hold the attention of viewers and improve patient recall. For medical educators animation has shown to be more effective for conveying symbolic theories and demonstrating key concepts of devices, procedures, and technology advances by delivering clear visuals in a simple format, with sufficient fidelity to cope competently with real-life critical situations. It is also a key strategy to teach crisis resource management skills. (Sheba et al 2013; Matt 2016; Datta et al 2012) For medical experts and healthcare professionals as scientists taking management decisions, depicting their own understanding about the scientific data, animation helps to gain insight into the information they are studying engaging the imagination besides revealing all the details of the subject converting complex scientific information into a compelling visual which tickle their imagination as thinkers and thought provokers (medical-animation2018) to expand their ideas, facilitate sharing of information with other scientists and researchers.

Delivering medical reality as animated visualization is particularly significant because it involves human life, especially in a virtual environment as virtual reality, where users are fully immersed removing their reality, or augmented reality where virtual presences is allowed to be blended into their reality with minimal interference. (Herron 2016). Medical animation can be combined within virtual environments which offer skills in contexts that users could never participate in naturally, to see features that are invisible in real environments as cellular and molecular structures and provides a training environment that is rich and responsive as surgical or clinical training to control variables that are not possible to control in the real world, and to see these in action. (Oai. & Ning 2013)

Medical animation may be viewed as a standalone visualization, such simulations may be viewed as an animated scene or time line or a process as mechanism of action animations or as emergency care instruction

animations.(Choa et al 2008;Choa et al 2009)with the possibility of using interactive controls in different levels. The simulation of hand-eye skills using haptics is another possible use of medical animation technology, as the one that stems from the replacement of cadavers in surgical classrooms with task trainers and mannequins.(Kathleen 2008) . A very important question arises : does medical animation represent reality in a fully accurate or proportional way or it has sometimes false appearance. There are many options for how the artists, as image creators, might depict medical issues with greater control over presentation, characterization, staging and timing.(Sheba et al 2013)They usually create or re-create illustrated structures depending on references as photographs, drawings, a live recording, developing videos, medical imaging<sup>1</sup>, movies, or links to either as a medical experts' idea or an assumption. References are the basic and the most important beginning point of creation or depiction, though must be verified to provide accurate information for animators to show preference for coloration, style, movement, complexity, realism in design. That can help accurately to communicate the importance and meaning of what is being seen in a planned and prescribed manner without compromising ethical and legal rights.(Datta et al 2012)(Biomedical, Biotech, Cellular & Molecular 3d Animation Visualization 2018)

The virtual models created on a computer passes by sequenced stages controlled by artists, designers and animators from simple to highly detailed storyboards in the concept phase till constructed models and final presentation format. The designer develops the beginnings of a script of the medical scenario. He sets up what should happen and in what order, how long the medical animation should play and how should it appear. The artists control subtle properties and aesthetic choices to achieve the clear vision of the processes as the appropriate illustrative style, color, lighting scheme and motion techniques that are suitable for clarity. Identifying the target audience and their cognitive and perceptual aspects is critical to proper animation design. (biomedical-3d-animations2018)(Medical animation 2018) Animation programs offer increasingly adaptable and realistic tools, which give wide free space to the artists to construct, change and correct already rendered animations to users specifications. So this paper pegs two main questions: does the artistic intervention in creating medical animation in educational environment shape the notion of medical reality ? does the constructed medical illustrations, degree of manipulation and credibility of motion construction, editing techniques consequently affect the user perception and experience.?

## EFFECTIVENESS OF EDUCATIONAL VIRTUAL ENVIRONMENTS ON MEDICAL REALITY PERCEPTION

The mechanisms underlying the educational benefits of animation in serious<sup>2</sup>/edu-graphic<sup>3</sup> games in virtual environments as an instructional tool lie in their capacity to improve the enjoyment, engagement, and motivation of users. Educational games teach complex cognitive skills, provide meaningful and challenging tasks, with flexibility in use and scalability where users can directly experience the consequences of their decisions in an extraordinary new way, from unique points of view and motivate them to go deeper where they are immersed in complex, feedback rich problem spaces. They can practice specific scenarios which help them effectively transfer the acquired skills to the real world. The effect of educational games on medical users satisfaction, knowledge, skills, attitude, and behavior are still in debate, depending on the validation and reliability of information, mode and the delivery format of medical content and other aspects. (Dankbaar et al 2017;S. De Ribaupierre, et al 2014 ; IV. Alexandrova et al 2011;Christopoulos 2013)

The game scenario designer often has his own personal view on how to arrange the scenario. The designer can control different presentations of animation in educational games as:

- one scenario which usually do not confer actual practical skills because it prevents the user from being fully immersed in the situation such simulations may be viewed passively (Figure 1)<sup>4</sup>but sometimes interactive controls are added from low to higher levels.(Figure 2)<sup>5</sup>(Kathleen2008) The scenario

<sup>1</sup>Computer imaging in medicine :using medical scans, such as computed tomography (CT)using thin pencils x-rays beams or magnetic resonance imaging (MRI)using large magnetic fields with pulsed radio waves. Ackerman, MJ. (2011)

<sup>2</sup>A serious game is a game designed for a primary purpose other than pure entertainment. serious games are a subgenre of serious storytelling, where storytelling is applied outside the context of entertainment, where the narration progresses as a sequence of patterns impressive in quality.(lugmayr, artur et al 2016)(djaouti, damien;et al 2015)

<sup>3</sup>educational graphics, or edugraphics, are graphic visual representations of educational information intended to simplify social culture content, the term "edugraphic" is born from a related term :infographic the first international conference on graphics education, was held in alvor, algarve, portugal 1993 with the name edugraphics. santo, harold p. (1993).

<sup>4</sup>Figure 1: watch video on <https://www.hybridmedicalanimation.com/work/virtualreality/tradeshaw-vr-intracellular-experience/>(accessed February2018)

<sup>5</sup> Figure 2: watch video on <https://3d4medical.com/support/complete-anatomy/multiselect> and for more information watch also the cystic fibrosis-crispr hololens experience trailer <https://www.youtube.com/watch?v=XWCd5k2ygrI>(accessed February2018)

usually designed to explain surgical procedures or pharmaceutical mechanisms of action in terms simple enough for a layperson to understand, also may be used in order to get fully informed consent from patients facing surgery or medical treatment.(Lai-Chu et al 2011) or learning mechanism of action of certain subject.(Figure 3)<sup>6</sup>

- multiple scenarios :where the level of interactive training and immersion can be increased by creating a realistic working environment as virtual reality based training exercises to teach procedural skills in situations of varying complexities as surgical simulation, a simulated intensive care unit coupled with feedback from observers(Figure 4)<sup>7</sup>or High fidelity Software Simulation which is designed to allow the mimicking of human physiological conditions for a variety of clinical scenarios,in addition to high fidelity manikin where realistic, programmable manikins behave like real patients that are capable of simulating a wide range of clinical scenarios; including simulating cardiac arrest, seizure, etc. Finally,Virtual Patient Game where interactive clinical scenarios take place in an entirely virtual world designed to practice team training in high risk situations like avatars within a virtual health facility. (Kononowicz et al 2015 ). Role-playing with someone taking on the role of a patient, interacting with the trainee, was one of the first types of serious games introduced in nursing education(Minhuaet al 2014)

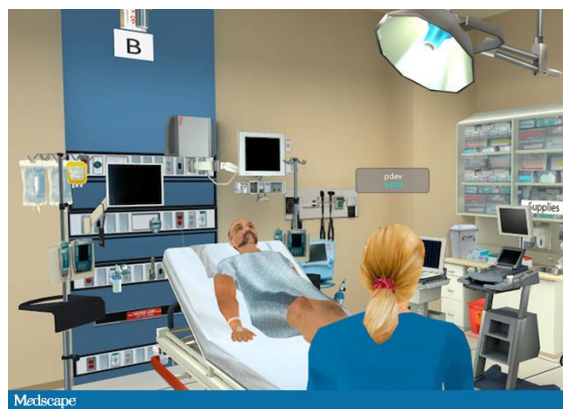


Figure 5 : A Digital Revolution: Games, Simulations, and Virtual Worlds in Nursing Education (Stokowski2013) [https://www.medscape.com/viewarticle/780819\\_4](https://www.medscape.com/viewarticle/780819_4) ( accessed February2018)

More accurate structure in the design process must be taken in consideration, thereby creating more effective scenarios, guiding design principles are needed to help game scenario designers where the focus lies on one scenario or on the progression of multiple scenarios.(Hartog 2009)

Coming to the concept of ‘unconstrained play’ rises risk-free training , and brings into sharp focus the necessity of a clearly articulated well-designed accurate instructional content for medical educational games. Selecting the games, the sequence order for the user, the interaction mode are main considerations, the games are adapted to the current level of the user to ensure the optimal degree of challenge without cognitive overload. The majority of users prefer to explore with a human guide, because it allows direct interpersonal interaction with which the educator can immediately adapt to the users and solve doubts or provide more information. The role of the medical expert as a teacher and a guide should ensure that the user does not over-learn one small fragment of a necessarily broad skillset. (S.DeRibaupierre et al2014;Hargreaves2018;Hartog2009; Christopoulos 2013)

The plausibility illusion which is the illusion that what is apparently happening in the virtual environment is really happening and defines that the key component for its realization is the existence of events in the virtual world over which the user has no direct control . So a bidirectional flow of information and action, by handing at certain moments control over to the game, so that not all information and actions would come from the educator. Through the usage of in-game characters at the various interest points in the virtual environment and mainly during the completion of a task, medical information is provided and events initiated which advance the

<sup>6</sup>Figure 3:watch video on <https://www.hybridmedicalanimation.com/work/animation/vr-real-time-capabilities/>(accessed February2018)

<sup>7</sup>Figure 4:watch video on <https://www.hybridmedicalanimation.com/work/virtualreality/medical-device-virtual-reality/>(accessed February2018)

storyline. Both the educator and user are forced to cooperate in order to advance the story. The reception of information and tasks both from the educator and the animation allows not only the direct participation in an interactive experience but also the passive observation placing the user in the middle of the action. (Christopoulos 2013). If the game is so engaging, the context and conditions in a scenario have to be designed taking into consideration: task (subject) arrangement, complexity progression and the balance between short and long cyclic scenarios.

Designing a game scenario mainly consists of the translation of learning goals into specific elements in a scenario to create the right elements associated with each competency or learning goal by confronting the users with various elements of the scenario - in clinical or emergency situation -they are required to assess the situation (situational assessment), make a decision and task selection and sequencing, followed by the task activities, thereby acquiring the necessary competencies (Hartog 2009) in such a way that the learning goals are reached, and the user as a learner has experienced all aspects of his real job and has built the necessary practical experience. Experts as well as educators will have to work in collaboration with the artists, designers, animators, computer software or game developers. Ideas can be tested very early in the concept process or in the design stage, or through creating a clickable or coded prototype. It also means that a scenario should give proper feedback on the performance of users. The elements in the final scenario should consequently be 1) of educational value, 2) technically feasible and 3) realistic. In which a conceptual design is continuously refined into an implemented final version. Objective measures based on speed and accuracy at all levels not only provide an evaluation of the learning process, but serve as the scores for these gaming activities in virtual environment for healthcare education. (S. DeRibaupierre et al 2014; Hargreaves 2018; Hartog 2009)

When evaluating medical animation in an educational game a fundamental question arises: How well does the final visualization represent the underlying medical information to achieve the user's goal? This question involves two aspects:

First: the evaluation of the technical efficacy, intrinsic quality, or technical image quality of the representation. How well does the visualization approximate the medical information to be understood? Is the visualization realized through graphic illustrative styles and motion editing that will produce the final animated images? Though analyzing the characteristics of the model, as timings, rendering, processing, frame rates within its hypothetical/original context, as well as matching any hypotheses alternative to the shaping of some of its parts are basic considerations of design. In addition to checking if the visualization: 1) successfully highlights the target medical information, does it distort this information, if it transforms it in some way, while providing context for that information. 2) transforms nominal interval, and quantitative information properly. 3) reveals trends, patterns, gaps, or outliers. 4) provides insight to some situation or answer a specific question. (Aragon 2017; Hartog 2009; Beatriz & Dillenseger 2005; Beatriz 2008).

Second the evaluation of the semantic efficacy: the performance of the user at interpretation tasks when using the visualization, which implies the understanding of the underlying medical information, considering the purpose of the medical visualization and who is the intended audience, the user's motivation or goal: how well does the construction of a specific model from the data help the users to understand the underlying subject and perform their task? Examining readability of the visualization whether it is immediately understandable after a short period or does it require excessive cognitive effort? How does this make users feel? Is the process clear? Are designers thinking of the user's wants and needs, or their own vision only? What do the designer want users to do?

Strategy is then translated into design through illustrative and technical styles determining the emotional reaction to the visualization, whether it is generally positive or negative, with examining in detail which helps to better understand not only what works and what doesn't, and also by how much, to gain insight into why. (Interrante 2005; Aragon 2017; S. de Ribaupierre, et al; Katharine 2018; Beatriz & Dillenseger 2005; Farouk 2017)

### **MEDICAL ILLUSTRATION CREDIBILITY AND DEGREE OF MANIPULATION: BALANCING CREATIVITY, CLARITY AND REALITY**

Artists have been visualizing medical world bringing a reinterpretation of medical issues throughout centuries in various forms of artistic expression. Artistic intervention of medical illustrators and animators as image creators presents a potential tool for facilitating and deepening communication that redress the balance of power in interaction between health professionals, medical experts, medical educators and students or patients. The artist goal often concerns the provision of emotional insight, rather than purely medical education knowledge. The



artist doesn't act as a conduit for science, but account for a medical aesthetic beyond didactic when interpreting and visualizing medical data.(Tsafrir& Ohry 2001; Hajar2011).

An artist can articulate an alternative aesthetic illustrated image to that of reductive plain medical information. He has the ability to tell stories through medical animation and potentially widen accessibility to medical imagery. This does raise several questions about the integrity of the illustrated and animated images :How far does the artist interpret the medical data? Does the artist reflect or construct reality? exactly or distortedly? Does the artist imitate and project or embody and build up medical reality?.A major issue is the aesthetic choice of where to strike the balance between realism and clarity in medical animation. (Weber2002; John2010; medical-animation-2018)

Illustrating a medical concept is difficult and can be tricky.(Hajar2011)Artistic manipulation is regarded as involving material changes in the processing of an image construction through the addition or subtraction or modulation of content.(Boering 2015) Medical images' manipulation has been used legitimately, to allow superposition or clarity enhancement, for medical educational or experimental and scientific purposes without physical intervention, to avoid misrepresentations and though misinterpretations.(Tsafrir& Ohry 2001)But artists as visual communicators adapt certain techniques, not with an intend to change the truth of what they were attempting to articulate, but to make images featured and characterized (McNally2015)to attract the attention of the recipient and keep him on the path of the image not through the process of revoking the reality but may sometimes beyond the limits.(Mike M.1993)Such manipulation questions the credibility of documentation in medical animation.(Tsafrir& Ohry2001) Some artists think any degree of manipulation is possible so they may filter and manipulate for the sake of aesthetics striving for an impossible level of perfection and idealism in their work. (Lyttle2015)

Artists aim to highlight medical world and tell stories in their own artistic vision depending upon their own experiences plus the credit medical reference which determine the motivation behind each stage of the animation from the concept creation to the final representation.(McNally2015)for example medical illustrators draw the steps taken during procedures and create illustrations of both healthy and diseased body parts to explain the effects of medical conditions. (Hajar 2011) demonstrating how healthy tissue functions or how various ailments impair that function. Claiming that neither illustration, nor animation certainly isn't all the truth, an artist can formulate or stylize the same animated elements in different ways, with different interpretation of the real world.(McNally2015)Manipulation is not equivalent to processing or editing through an illustrative style. All images are processed or edited, and levels of processing are aesthetic judgments and do not by themselves violate real medical reality information. The only point at which processing becomes manipulation is when transforming significant parts of an image(Campbell 2015) as addition or subtraction to the medical content or moving around information blatantly.(McNally2015)The medical artist should draw or animate the medical issue with scientific precision and at the same time brings artistic creativity to his work. (Hajar2011)

Creating medical animation requires a significant amount of technical experimentation prior to any creative intervention. Visualizing real reality may require the highest degree of mechanical artificiality. Articulating, stylizing, processing, editing and even manipulation has penetrated so deeply into the reality construction in order to appear real .‘The clearer real reality is suggested the more constructively there is behind it’. The appropriateness of a more abstracted visual narrative need images that describe medical scenarios in a more accessible and holistic way, as rendering on a higher level of abstraction, semantics and user interaction have to be taken into account.(John,M2010 ; J. Diepstraten et al 2003 ; Weber2002)

There is a potential for artistic intervention at almost every stage in medical animation practice, from the concept (creative) development including; Storyboarding, (Figure 6) animatics or pre-visualization (Figure 7)<sup>8</sup>, concept art (character and environment)passing by the production phase as character creation, the environments that run the story of the animation, modeling, texturing, rigging, animating, lighting, rendering and animation tests,(Figure 8) ending to post production phase including editing compositing, adding visual and sound effects,titles and credits andfinal rendering and presentation. (Boering2015 ; Getting start with a 3D animated movie 2015)

<sup>8</sup> Figure 7 : watch animatics on <http://www.chicagomedicalgraphics.com/animation/>

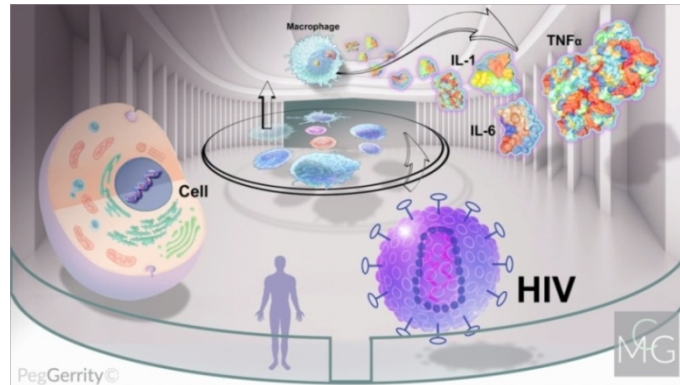


Figure 6 : biomedical virtual reality Storyboard  
( artistic intervention in the concept development phase)  
<http://www.chicagomedicalgraphics.com/animation>  
Chicago Medical Graphics 2017/ accessed February 201

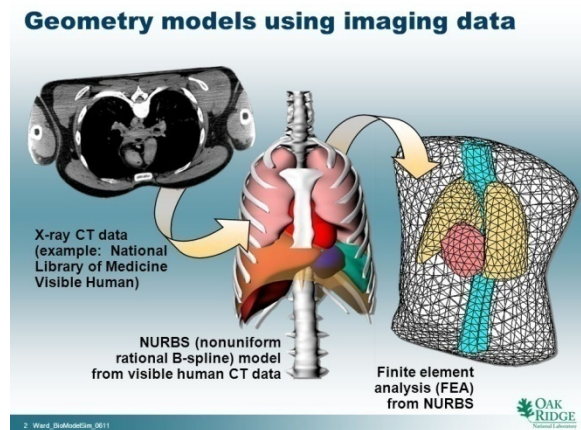


Figure 8: ( artistic intervention in the production phase  
(from medical imaging to artistic editing)  
Presentation on theme: "Biomedical Modeling and Simulation"  
Richard C. Ward 2007 <http://slideplayer.com/slide/4806689/> (accessed February 2018)

There is and always will be much debate about the degree of modifying of medical illustration. (Campbell2015)The mere fact of replacing or changing places to produce an image involves a choice that might represent reality in a partial manner.(Boering2015). This doesn't mean to emphasize and suggest a culturally critical pessimism in the sense of a loss of the reality or a distancing from one reality and proposing a reality of distorted media constructions.(Weber2002) and also doesn't mean to direct the composite images to falsify awareness and hide the truth, and perhaps to raise the value of surface issues, temporary and transient things over the real, because the images are no longer based on similar , but on the basis of composition and hybridization, which gave a way for the potential of counterfeiting and forgery.(Mike 1993)So minor changes may be accepted while excessive changes are prohibited, but what counts as minor versus excessive changes are necessarily interpretive with artists and judged by medical experts who value those images on a case-by-case basis. There should be a clear line demarcating these concepts, the ways used to explain the rules on artistic manipulation should be cleared improved for example setting up a series of video tutorials that show artists what kinds of manipulations are not allowed, regardless of the technical process through which that addition or removal is achieved.(Boering2015)An artist and scientist interaction is extremely useful in advancing art and medical issues.(Hajar 2011)

### FORM STRUCTURE OF ILLUSTRATIVE STYLES IN MEDICAL ANIMATION

Constructed images in medical animation has a high ability to attract attention, as it guides the user as students patients or medical educators to meanings that help his mind to recognize and translate its content and relate it to familiar reality. The constructed illustrative styles may raise mystery and surprising in the image especially when finding a difference or unpredictable when linking between the real world view and the user physiological

and social needs. The artist is able to influence the recipient using unusual forms, and combination of existing and non-existing visible. A huge potential ways and methods of various images' manipulations depict, reflect, produce a new or unusual represented vision as 1) modification of familiar forms 2)changing or modifying known laws of nature 3)interactions or blending between different forms (metaphor) 4)giving unreal features or characteristics to certain characters 5)Combining things that are impossible to meet in real world. Those techniques consequently affect the recipient mental and visual perception and shape the notion of medical issues. When he sees such strange and different forms from what he has accustomed to and stored in his mind, he attempt to find a relation between these forms and others, the mind begins the process of building a new database of these forms, which may require a relatively long time to realize the differences with new characteristics, then he tries to link between them finding convincing reasons for these changes, until they are well understood and interpreted. The process of cognition is equipped and prepared to recognize each element on its original real form, as well as to recognize its properties and characteristics that are familiar to the mind and have acquired knowledge during experience and perception.(Mikkel & Rudolph 1992 ; Mike 1993 ; Giemsa 2007;Wettlaufer 2003). so adding any new modulated information is at stake, especially that medical information is almost new for the user.

Creating medical animation depend mainly on identifying the appropriate kind of illustrative style which represent the medical issue and affects its validity and reliability. Those styles are specified to encode particular information about important features of the subject within the graphical representation. Concentration on certain issues and subjects with certain representative styles leads the users to perceive those issues as more important than others (John 2010 ; J. Diepstraten et al 2003 ; Weber2002).

Concerning the degree of visual realism whether it is actual/apparent realism or iconicity/ symbolic, there are different illustrative styles how the medical subject can be represented graphically: If the purpose of the medical issue is to depict a specific location of an organ for example and the users are supposed to recognize elements in that issue, then the degree of realism should be high, and it will be necessary to use the most detailed information which is easy to interpret with extraction of the relevant features, as accuracy addresses the issue of the truthfulness or fidelity of the visualization imagery to the actual or expected appearance of the medical subject. Medical illustrations can be created as perspective representations, the more natural the perspective the more complex it will be. Using vanishing point perspective depict bodies as realistically as possible, while parallel perspective may be used to improve the recognition of the shape and structure of objects, their orientation, or spatial relationships in non photo realistic styles.

**Realistic representations** depict the medical subject and its physical characteristics in the simulated environment depending on creating and composing alternative world to reflect facts as close to reality as possible and suit the medical subject documentation.The task is to record imagery in all its details and simulate the desired effect for convincing using computer graphics imagery as pictorial elements to create the illusion of reality which in fact might either does not exist or cannot be seen by the human eye. (Figure 9)<sup>9</sup>Highly stylized realistic illustrations with most details available in the medical information requires a great deal of knowledge about both the 3D modeling and the rendering of a specific type of virtual environment, as hyper real visualization incorporates and often capitalizes upon photographic limitations such as depth of field, perspective and range of focus to create a tangible solidity and physical presence through subtle lighting and shading effects so the users can recognize the features' identities in the virtual environment which affect spatial cognition.(Figure 10)

<sup>9</sup> Figure 9: watch video on <http://www.peggerrity.com/animation/>



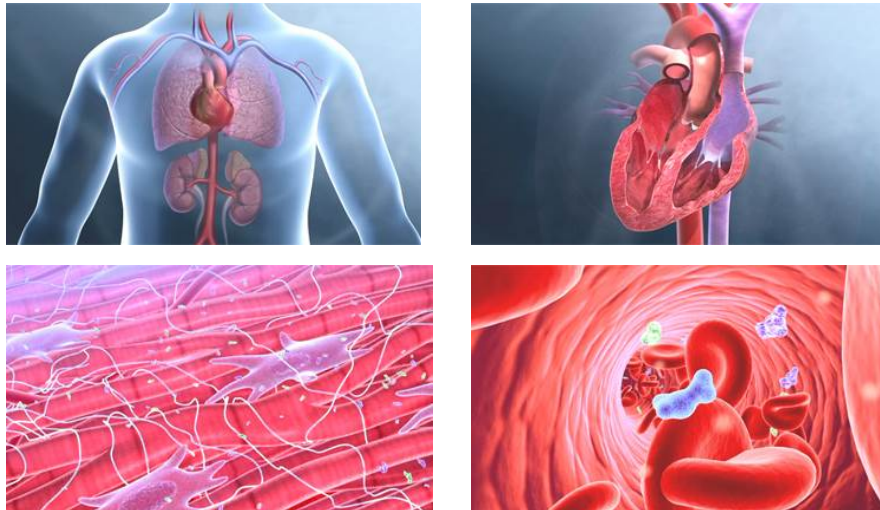


Figure 10:Realistic representation with various point of views depict the medical subject and its physical characteristics in the simulated environment  
still scenes:Diastolic cardiac insufficiency  
watch video on <http://kostudios.com/diastolic-cardiac-insufficiency>  
KO Studios © 2013 All rights reserved

**Non realistic representations** as stylized and abstract imagery can reduce visual complexity of images, and the level of detail which guide the user's eye towards important features in an animation. Non realistic representations may take several forms as iconic, symbolic, and others to visualize abstract information, communicate spatial complex and thematic information for medical issues. (Figure 11) These representations facilitate guidance of a user's gaze to prioritized information and predicted steps which may exist only in the scientist's imagination. When it comes to concentrate on essential features and reveal concepts, low visual realism is applied which requires interpretation of the abstract symbolism in the animation. It may possible to reuse existing objects or drawn elements but adapt the size and orientation of each element as it will change wherever it appears in the new issue. (J. Diepstraten et al 2003;Giemsa, 2007;Dykes et al 2005; Bishop & Ecrat 2005; Kettunen et al 2012; Farouk 2016)

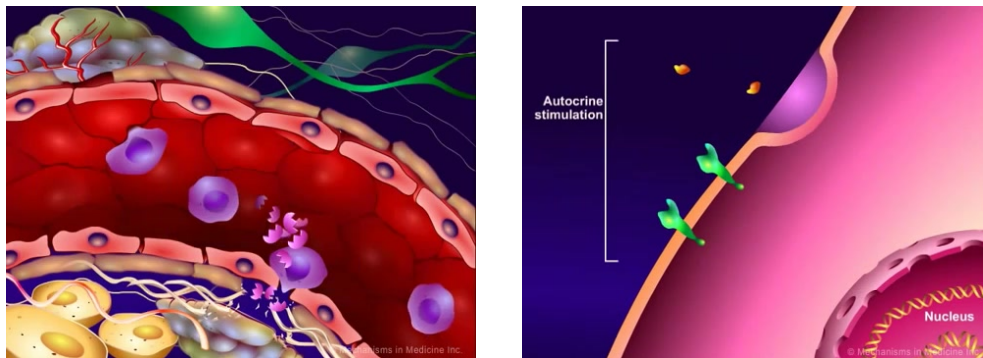


Figure 11: non realistic representations of stylized imagery reduce visual complexity of images, and the level of detail  
still scenes: mechanism of action- intro to cancer biology  
watch video on <https://www.pinterest.com.au/pin/843439836434445151>

medical scenarios may vary between realistic and nonrealistic or a combination of both styles based on the relation between the representation and its referent and the complexity of the information represented. The illustrator has artistic freedom to use various stylistic devices to support the purpose of the animation. The use of perspectives, graphic devices and simplifications are valuable tools for emphasising key details in an animation. Illustrations reveal the shape and appearance of important parts, plus the position and orientation of these parts in the context of the surrounding structures. However, creating illustrations that clearly depict the spatial relationships between parts is not an easy task. The primary problem is matching and managing. Most complex 3D objects contain many tightly connected and intertwined parts that occlude one another.

Illustrators carefully choose viewpoints that help the users to see the spatial relationships between the internal target parts they are interested in. Typically, the viewpoint not only centers the target parts in the animation, but also minimizes the number of occluding structures. This strategy makes it possible to expose the parts of interest with relatively few cuts, leaving more of the surrounding structures intact for context. For example, when depicting the inner workings of biologic systems as the events that take place inside of cells which are nearly invisible to all forms of visual analysis. If interior parts are to be shown, the occluding parts can be shown as transparent, or completely cut away, or removed in sequence as during a surgical technique where inner structures gradually come into view as the surgery progresses. (medical-animation2018) There are variety expressive visualized representation methods that artists can create with several illustrative styles, the purpose of the animation distinguish the choice of that representation method, the most important of these representations are: 1) Cut-away/cross section views where a section or part section which allows to see through the surface and perceive other surfaces or structures behind. (Figure 12). (J.diepstraten et al 2003; Giemsa2007; Ivan&Gröller 2005; Farouk 2011)

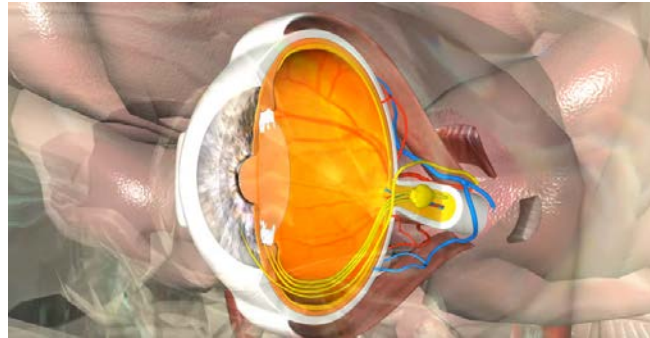


Figure 12: Eye Anatomy Cross Section

still scene : 3D Medical Animation watch video on <https://medical3danimationcompany.com/project-attributes/medical-illustration/page/2/> (accessed February 2018)

2) Ghosting views in which transparency is used as the dominant method. so elements or objects are semi-transparent illustrative views. The inner parts of an object can be seen by displaying the outer case as if it is transparent. (Figure 13) (Giemsa, 2007; Ivan& Gröller 2005; Farouk 2011)

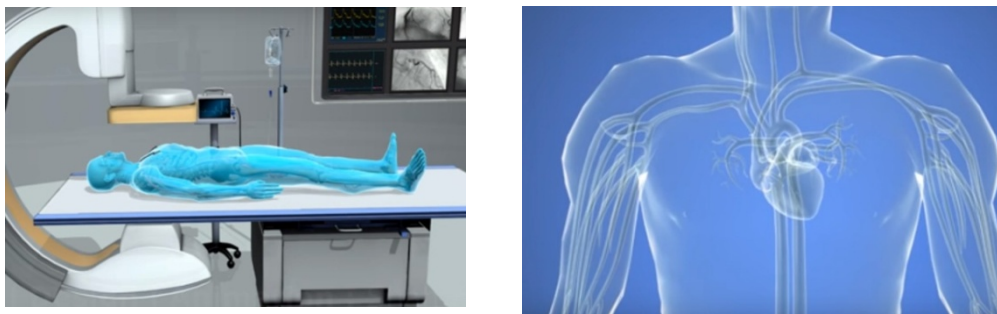


Figure 13: ghost view Cardiac catheterization - 3D Animation 1080p

still scenes watch video on <https://www.youtube.com/watch?v=Y2fmJgt3cms/> (accessed February 2018)

3) Exploded Views in which the spatial arrangement of features are modified to uncover the most prominent ones. It is also a very effective way to present assembly instructions. (Figure 14)

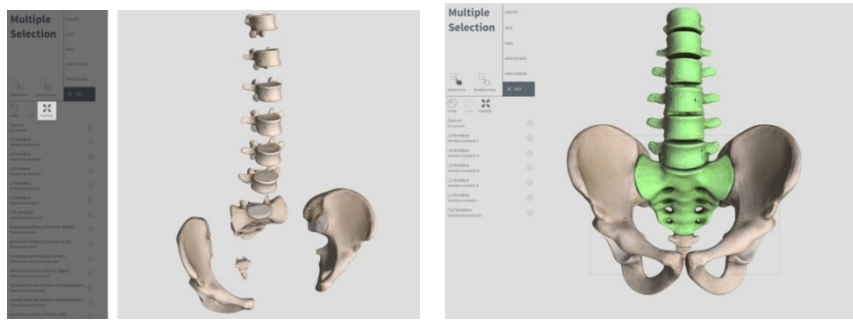


Figure 14 : exploded views .Control Multi-select with Surface Dial *still sciences* watch video on <https://3d4medical.com/support/complete-anatomy/multiselect> (accessed February 2018)

The artist controls constructing stylistic devices to shape the user notion of medical reality are varied which enables him to percept the meaning of the illustration more easily such as line weights, line types which may form patterns to convey regular and irregular textures through choosing appropriate weighs and spacing for those lines. Illustrative rendering techniques include the use of non-physical or exaggerated lighting and shading models that emphasize the shape, texture and reflection properties of the depicted elements. The artist should think about what to depict and how to arrange the parts so that the structure is clear and avoid making the visualization too ornate as too much detail will distract the viewer and obscure the meaning. In this context the effects and strengths of various stylistic devices become apparent as it enables the user to see the meaning of the illustration more easily.(Mitra et al2010;Giemsa 2007;Ivan& E.Gröller 2005;Farouk 2011)

#### **MOTION CONSTRUCTION AND MOTION EDITING IN MEDICAL ANIMATION:**

The main goal of medical animation is to synthesize the desired motion effect precisely which is a mixing of natural phenomena, perception and imagination. The animator designs and specifies the dynamic behavior of the elements in medical scenarios not only with his mental representation of causality and academic backgrounds but with a help of a medical expert to produce an accurate dynamic visualization in a fraction of the time. He tries to transform the vision of the elements' behaviors into a realistic and conceived animation depending on the required result and how the user is going to interact with.(Thalmann2001;Steven et al 2003; medical-animation 2018)

The motion in medical animation can be created or derived from a reconstruction of the subject with motion control methods as keyframe (computer animation), simulations and motion capture to translate the desired motion according to the context subject. Amotion control method specifies how the mechanism of action of elements in a biological system, bio-medical technology, pharmaceutical drug or an anatomical is animated. A combination of blending of methods can be used and provide good results. There are two aspects of a motion representation: the representation of the medical element character at any given instant in time and how these specific instants are varied across time.(M. Jung et al 2000;Thalmann,2001;Patrick 2018)

The user as a recipient is not assigned to analyze the motion techniques used in medical edugraphics , whatever the method is, his relationship to those techniques is a relationship of vulnerability, not analysis, and the process of understanding and perceiving the contents of the medical subject comes in the first place. If the user begins to analyze the construction of used motion technology, it will get on the content or the meaning presented, which separates the user from that meaning in favor of technological use . Using motion techniques within the context has a direct emotional impact on the user so technology must remain within the context of the receiving sense and not perception . Diversity and differences in techniques, just are creative agents that the creator seeks for high communicative level, to achieve more interaction with the user. This means to send signals and semantics which help to build the imagined image in his mind . responsiveness with intents and desires arises as a result of mental and emotional connection between the user and the animation in the virtual environment . All this leads to the creation of a specific communication, whatever the motion technique used, it is employed to serve the aim of the animation and correspond to the nature of the users.

#### **Key framing motion(key frame animation)**

Creating realistic motions with accurately mimic subtle characteristics requires a great deal of skills to build objects and scenes to achieve medical reality. An animator creates a simplified representation of an object anatomy which is called skeletal animation.The position of each segment pose of the skeletal model is defined by animation variables(avars). Animators specify a series of many individual poses to create properties of the



motion using key frames to define the position and orientation of objects at specific points in time so changing the values of avars over time and the computer provides the motion in between to achieve the smooth motion of the objects. Realism in computer animation can mean making each frame look photorealistic, in the sense that the scene is rendered to resemble reality and make the animation believable and lifelike. Diagrammatic or schematic illustrative styles can represent physiological processes and the mechanisms of dysfunction that cause disease as an abstract concept. The animator has his own space to think and create real or false appearance of the medical elements in certain time with certain movement; what motion is going to be added or emitted depending on his accurate interpretation and understandings of the represented medical subject. (Gleicher 1999; Patrick 2018; Steven et al 2003; Masson 1999; Parent 2012; medical-animation 2018)

**Computer simulation (simulated motion):**

Simulation generates motion of objects using numerical simulation (algorithmic) methods depending on computer programs, which rely on the laws of physics and engineering to analyze the event and produce the motion. (Figure 15a-b) Simulation is the artificial representation of a complex real-world process to simulate physical processes and phenomena with sufficient fidelity and relies on the input data to be consistent with the elements in portrayed medical scenarios with the aim to facilitate learning through immersion, reflection, feedback, and practice minus the risks inherent in a similar real-life experience of which can be complicated, hazardous, expensive, and time consuming in many situations. (Figure 16)<sup>10</sup> Medical simulation offers numerous potential strategies for comprehensive and practical training, and safer patient, the output data from simulation are fed directly into animation as if both steps take place simultaneously. One key problem facing algorithmic methods is how to describe a complicated motion or a subtle nuance. So the animator credibility creation depends upon his skills and equivalent of the constructed motion to reality. Simulation Perceptual accuracy require stability, ease of use, speed, robustness to transform science into a technically-accurate, visually-dramatic experience. (Datta et al 2012; Oai & Ning 2013; Patrick M. 2018; Gleicher 1999; hybrid medical animation 2018)



Figure 15 a: Virtual Medical Simulation Laboratory  
<https://contest.techbriefs.com/2016/entries/medical/6915>(accessed February 2018)

Figure 15 b: Virtual Medical Simulation  
<https://techli.com/2012/04/government-unreal-engine/>(accessed February 2018)

<sup>10</sup> Figure 16 : watch video on in vivo Surgical Simulation Trailer <https://vimeo.com/193605703>(accessed on February 2018)

**Motion capture animation:**

Capturing the motion is an aspect of creating medical animation from observations of real motion. An artist create animation from observation through several steps :1) Planning the motion capture shoot and subsequent production.2)Capturing the motion.3)Cleaning the data.4)Editing the motions.5)Mapping the motions to the animated elements.When computer animation is driven by motion capture, a real motion is recorded to a computer using video cameras and markers,or a real performer acts out the scene as if he is the character to be animated and that motion is then applied to the animated subjects or character especially in clinical or surgical animation virtual cases.Motion capture is appropriate in situations where believable, realistic behavior and action is required, as it provides a large collection of realistic motion data.(Masson1999) (Figure 17a-b) (Figure 18) <sup>11</sup> (Figure 19)<sup>12</sup>

Changing and editing motions seems to be a big part of the use of motion capture where reality is reconstructed. There is a need to create the observations that are then interpreted, motion capture creates a representation that distills the motion from the appearance; that it encodes the motion in a suitable form for the kinds of processing or analysis needed to be performed depending on the final result. Motion capture for animation implies that the animator will somehow be changing something about what have been recorded.in other words to what extend and how farmotion database reusability and flexibilityis going to take place.The limitations of editing come from the library of motions available to adapt, and the quality of the tools available for adapting motions to new needs.(Gleicher 1999)

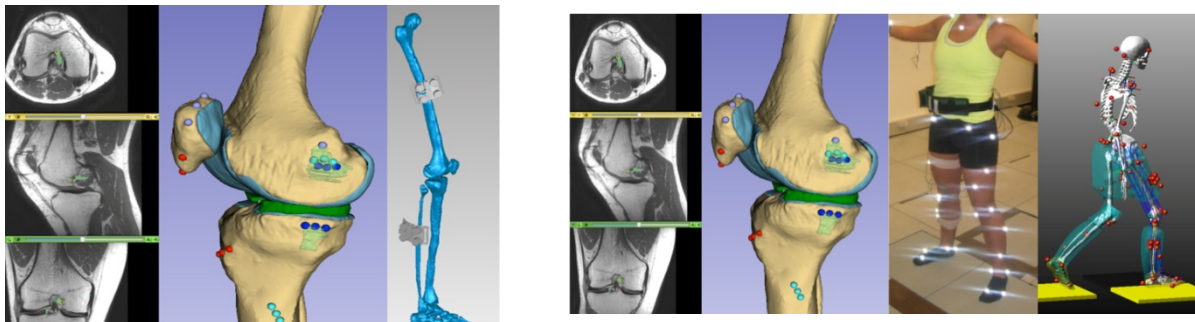


Figure 17 a-b: motion capture  
subject specific con current simulation of movement and natural knee contacts mechanics  
evaluation of knee ligament mechanics  
still scences watch video on <http://faculty.missouri.edu/guesstr/Knee%20KEM%20Video.html>  
Copyright © Mizzou Motion Analysis Center All Rights Reserved

**MOTION EDITING**

The need to control the motions of objects is an essential part of any animation. The animator as a creator control over the motion to better convey- not to manipulate - clear biomedical content which accordingly affect the user perception. Motion editing can be applied to motion created with key-framing and simulation, as well motion capture. Animators edit created, recorded or real observed motions of medical data, they often make alterations to the motion, for reasons including:

- 1) reflecting an accurate reconstruction through the clean-up process which is a specific type of edit to motion capture.
  - 2) re-using the medical data for something slightly different as a different action from the exactly recorded data.
  - 3) creating infeasible motions and impossible actions or experimenting some speculations or predicting alternatives.
  - 4) adjusting imperfections of reality.
  - 5) addition of secondary motion.
- (Gleicher1999;Komura2006; Rick 2006;M. Jung et al 2000)

Adaptation, retargeting, editing and reusing motion is challenging, because the motion was acquired for a specific character within a specific environment in a specific style and mood. so constraint-based approaches

<sup>11</sup>Figure18: watch video on ArthroPlannerSurgical planning solutions 2014:2016  
[https://www.medscape.com/viewarticle/780819\\_4](https://www.medscape.com/viewarticle/780819_4) (accessed February2018)

<sup>12</sup> Figure19: watch video on MyHipDynamic planning for THA 2014:2016  
<http://www.artanim.ch/en/projects-detail.php?id=1>(accessed February2018)

specify features to be retained, new features to be accomplished with a new motion to satisfy given constraints, while preserving the characteristics of the original motion as much as possible. Relation with environments, dynamic constraints, subtle details accomplish new features for the target motion and new characters/environment, new style/mood are defined. Animators select motion segments from the database that will be modified, blended, and stitched using variety of motion editing tools. (hybridmedicalanimation 2018)

Creating a believable realistic performance and designing effective real motion through motion editing, shouldn't depend mainly on the artist imagination and technical skills but presenting the medical elements or objects' behaviors is the main goal, not how good the animator is at making something move. The animator should understand exactly the mechanics of the action of the animated elements, study how the character whether a human or an object moves: timings, arcs, speed changes, overlapping actions compression and extension, balance, weight, motivation, the medical issue or objective behind the action, to determine the past and the following steps. Discussing the action with the medical expert or the specialist involved with the issue is very significant to determine the accurate location of the action need to happen, in a certain distance and exact timing interacting with other objects to make the action feel more responsive. Adjusting a good motion can lose something of the depicted reality, the motion may no longer be physically correct, or may lose some nuance given by the animator. Good transformations preserve important aspects of the motion by altering less important ones. The animator must look at motion editing as a creative process where decisions are made as to how best to keep the originality of the motion while meeting new needs. Over all, medical animation should have no limits on creativity, and overtly constructed imagery has much to say about medical world. But for educational documents and evidence images clear standards are necessary to underwrite their credibility. (Campbell 2015) and shouldn't depend mainly on pure artistic imagination but should also rely on scientific facts and hypothesis of a team of researchers and experts.

## CONCLUSION

Medical reality could be recorded, reconstructed or processed in as an animation in a virtual environment depending on the accuracy of the artist's references as a visual creator, and his perception, interpretation of scientific information, imagery, in addition to his constructed illustrative styles, his motion controls of medical elements in the final visualization.

Balancing realism, aesthetic and clarity in medical animation depend on spatial and temporal design considerations depicting the movements, process of the inner workings of biomedical issues perspectives, angles of views of the illustrated elements and techniques used to create proportionally accurate motion visualization.

Medical simulations in virtual environments mannequin based, screen based and virtual reality simulator provides multiple benefits to different users as medical educators and patients to understand the known and explore the unknown, practice rare and critical situations. But educational serious games for medical and health care learning is not effective and do outcome negative learning, change awareness and twist the notion of medical reality without a good evaluation of the visual content, objectives, in addition to studying the user behavior during the development of the game scenario design to create safe and controlled virtual environments which eliminate risk to patients, enhance visualization, and contexts for learning and assessment.

Credibility of medical animation has to undergo several verifications to ensure the accuracy of the delivered information though bridging the gap between scientific instrumentation and the artist's experimentation. Finally, continuous co-operation between scientists and artists has to take place in order to achieve scientific validation of the illustrated reconstructed models and to maintain accuracy, consequently affecting perception of medical reality.

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## PEACE EDUCATION: THE EXCELLENT PROPERTY OF HUMANITY

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### ABSTRACT

The confrontation in the present day of the planet is dynamic planet since society has spontaneous the primitive society from the primitive to the modernization which be engaged from materialism, consumerism and information-ism. Unfortunately, the violence and structural violence have been situated in the global phenomena. Peace education which is the excellent property of humanity will be taught in oneself and the others by the followings: 1) be faithful and respect in the goodness of yourself and the others. 2) be aware of conflict normality of learning. 3) be concerned in the individually differentiated ideology. 4) be understood of the changing and dynamic planet. 5) be taught in school by using the systematic thinking processes of all problems solution. Certainly given PEACE Model must be concerned as the followings, P= People those who understand in the human being differences, E=Education it should be run in every level of schooling, A=Activeness all of social institutions have to take effective actions, C=Community gaining the similarities and reduction of differences will be done, E=Earth the global will promote friendship, unity and fraternity both into direct and indirect ways.

**Key words:** Peace Education; the Excellent Property; Humanity; PEACE Mode

### INTRODUCTION

In the wildly changing world science and technology play the major role of every dimension of development, politics, economics and socio-cultural, and also science and technology. Easiness of science is found possibly to accommodate human being prosperity. As we known already, materialism, consumerism and monetarism practically act on the social chaos, easily seen as in the present day. Selfish and actual violence is now impacting so what the damage of society decay. Peace which human being has been in the nostalgia will be taken place at all places. As the matter of fact, the binary of peace always shows in the social phenomena and the social condition, peace and conflict seem to be the homogeneous matter. However, peace and conflict is not the frozen phenomena of human being and is the open to challenge on ideological practice.

### PEACE EDUCATION: THE MYTH OF BEING

The complexity of social phenomena in the present day rapidly spread out to human life especially self understanding together with the others understanding necessitated fruitful in the same doctrine. Based on the foregoing it should be declare with individual and interpersonal relation. The first element of conflict which is the primary of peace destroy is from one mind and his thinking negatively. Anyway, good mind and good thinking will be created for the better way of peace. (Strike, 1982)

Actually, the truth of peace is the metaphysics of global education. Education also takes part of gaining the habitant ideology of the nation development. Social order is also one category of discourse both of manifest or latent that be cultivated people for peace. Peace and conflict is naturally the binary opposition judged by people as the sides of good/bad. The myth and being of peace is projected into knowledge builder and knowledge acceptor.

### WHAT IS PEACE?

Accordance to the definition of Peace by Webster's New Encyclopedic Dictionary is:

1: a state of tranquility or quiet as (Webster's New Encyclopedia Dictionary, 1993)

- a: a freedom from civil disturbance or foreign war
- b: a state of security or order within a community protected by law or custom
- 2: freedom from disquieting or oppressive thoughts or emotions
- 3: harmony in personal relations
- 4: a: a state or period of agreement between governments
- b: a pact or agreement between combatant to end hostilities

Peace is very common sense of people since it covers a whole perspective of individual differences. People from their own culture sometime cannot get the full perspective and go not know why their behavior follows this grated pattern. Indeed, culture of peace is influential one's life from how they think and their practices. The ultimate action of peace is to create harmony and understanding clearly. With every community or organization's ideology or perspective, it is to create the great solution beyond the best solutions.

### Why PEACE UNDERSTANDING?

There are some characteristics of peace which fulfills the humanity happiness. It is formed by the first small group in family. Individuals and community with complementary skills of basic under the differences are usually needed to form the prosperous happiness. Humanity is the recognition its global nature, the next step is the understanding to one another. Since we know that global is not the melting pot where all people blend in and become a homogenous mixture. People in the planet is also much more like a rich fruitcake where the yellow contrasts with the brightly colored strawberries and rich hues of the raisins. (McShane and Glino, 2005) The easy and high light of peace is education commitment. Education does not exist or act in a value free way, whatever it takes places in every space of learning. It must be formed by certain values. There is dividing between education and beliefs. Education normally embraces a commitment to 1) respect for the persons 2) the promoting of well-being 3) democracy 4) fairness and equality 5) opportunity and the last one 6 is the growth of all mental and physical body. (Somboon, 2003)

Understanding the principles of peace and for the citizenship is one thing. Putting the learners in active practice and manifesting them in order to behavior is quite another thing. It remains for us to examine the ways and means of training for good citizenship. However, the attainment of qualities and accomplishment envisaged the concept depends upon the, 1) innate abilities and capacities of learners 2) home influences and training 3) education program offered in the school for developing peace. (Tanej, 2001). All perspectives of mentioned are that developing peace programs out of learners' abilities, experience and know ledge will be and effective and interesting method of making them effective citizen in the future. Work selected or skill manifested should improve the learners' understanding of their role as civic people. Meanwhile, the first instructions of peace are imparted at home. It is the first lesson of living with the others. Here the learners become good considerate, thoughtful and well behaved. The civic responsibilities that begin at home extend in ever widening circle of school, community and the country.

### IMPLICATION OF PEACE FOR INTERNATIONAL UNDERSTANDING

For the promotion of peace for international education is essential to

1. **Know** and understand how to people on other lands live;
2. **Recognize** the common humanity which underlines all differences in culture;
3. **Work** for fair and just world-order with security, freedom and fair-play for all people;
4. **Maintain** interest in the world affairs;
5. **Recognize** and help to solve world problems according to practices of democracy;
6. **Appreciate** the contribution of all people to world citizenship and that there is a human culture;
7. **Combine** love of one's own country with abroad social consciousness towards the problems of the world;
8. **Understanding** the economic and cultural factors which make the world inter- independent community of the nation;
9. **Respect** the dignity and worth of men by giving him equality of right and opportunities;
10. **Take** world one unit;
11. **Realize** the truth alone triumphs and leads to human progress and prosperity;
12. **Believe** in common values and goal for the world community;
13. **Understand** that victories of peace are greater than victories of war. (Taneja, V.R., 2001)

Once these basic concepts are realized by human being, achieve the goal of peace and world- understanding is very easily possible and practicable. Peace for international understanding we should try in our family firstly and then spread out to the community and other places conducted to men everywhere respective of different culture or nationality which we belong.



### **How to Handle Peace: Peace Model**

Throughout the world, most of global citizen currently want peace since they are missing out of on education because they live in or come from conflict. Education is the fundament process for building up the global peace as urgently required. Overall picture of the world civil war and international conflict have completely devastated. Through socialization process, people are normally educated to follow norms, folkways and most people were not opposing it. In peace or homogeneous, norms reaching to “understanding the others” convention on how the human being should conduct themselves, approach things, as well as roles and requirement. It is also the process of reaching a balance.

**PEACE Model** is the one tool for gaining and developing the total happiness of the world.

1) **P = People**, the current world situation are conflicts. These are not to say, however, that the present study subscribes to the view that certain conflicts are rooted in primordial, ancient, or “tribal” hatreds that are incapable of resolution or change (see, for instance, Kaplan, 1994). The term of condition such as politics, economics and socio-cultural perspectives. In the “P” represented as people, all nations have to concerns about majority and minority in the slogan of “*reduce the differences and gaining the similarities*” as process of life with able to participate.

2) **E = Education**, Education is an important significant component for promoting interpersonal understanding. Normally education is divided into three types, formal education, informal and non-formal education, but their objectives totally put into the learners in cognitive domain, affective domain and psychomotor domain. Today’s learners will finish into the world where demand of individual differences, other understanding and societal live grow more every year. Thus, education must play the role of in creating or promoting the correct perspective of peace while they are in schooling. The skills to fuel peace are as the follows, participation, communication, connectivity, cooperation, coordination and collaboration (1P5C’s). As mentioned, education is wildly in the 21st century and learners who are civically literate, globally competency and digitally literate are better. Education especially national curriculum has to regularly emphasize peace studies in all levels. Curriculum must be paid interest in the personal development and can help them bridge the gap from childhood to adulthood with less pain than themselves perhaps experienced.

Thus, teacher is very essential key of education and knowledge distributed becomes “the power of academic status”. The task of teacher is to help learners and to facilitate their helping each others to comprehend that the future made. The way in which inquiry and debate or discussions are conducted in the classroom.

3) **A = Activeness**, both public sector and private sector will increase the involvement of all activities of public relations on promoting peace in policy, processes and operation. Responsible funding has to close every organization. Most of the traditional or historical views of the funding distribution experiences in only the private sector and sometime easily seen non beneficial usage.

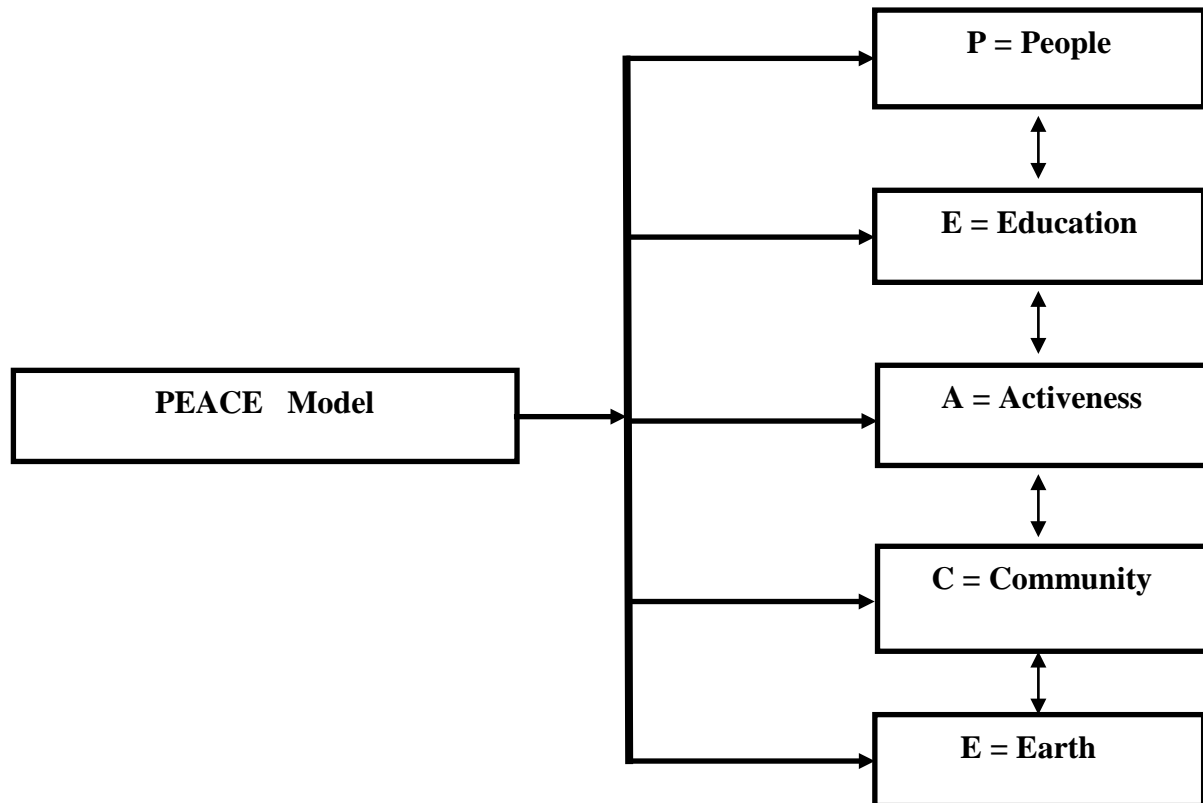
In case of all activities promoted on peace must be practical frequently and public demands for accountability may results in more suits in the future.

5) **C = Community**, as known already community usually consisted of structure, format, pattern and members. The differentiated culture of community must be concerned because of its identity. The difficulty of much of this community, combined with an norms, rites or ritual which are formulated from community members. Issues on this perspective that particularly foster to the way of “Gaining of Similarity, Reduction of Differences”.

6) **E = Earth**, earth or the global is the same meaning, in today’s global community, teaching peace is very essential duty that must be undertaken by everybody. Happily cultural isolation is becoming a thing of the past. In order for the learners to be able to progress harmoniously through their life, restraints formally tolerated or imposed by societal attitude must be done away with. Everybody must seize the initiative and celebrate cultural diversity as the great quotation of Socrates that “*We are all citizens of the world*” People share the same universe, globe, country, cities and schooling places.

As mentioned already, peace can be taken place in every sphere and every level of society since we cannot refuse that happiness for all of those global people comes from peace earlier. Instead of looking the way when face the differences, all of people must seize the initiative and cerebrate cultural diversity. In summary PEACE can be projected as the chart following;





### CONCLUSION

If communities are to help the growing generation to imbibe in them the art of living successfully and effectively, Peace education or education for peace should be the primary aim of the national education process which is the pillar of those who are in the nation happy. As the matter of fact, we are now living and spend our lives in the struggle and rivalry world. Human being is coming to realize, with disappointment and fear, war, scientific and technology progress, does not necessarily entail moral progress. Truly simplicity of living with care to each other and be understood the differences of culture among or in all contextualization of the world will become the global sustainable of peace.

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## THE ANALYSIS OF THE TARGET AUDIENCE HAVING A PART IN THE SUCCESS OF AN ADVERTISING CAMPAIGN IN TERMS OF THEIR DEMOGRAPHIC CHARACTERISTICS

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### ABSTRACT

As the successful elements of an advertising campaign are taken into account, it is different from similar campaigns and has the purpose of convincing the target audience to buy that product or service. For this reason, the advertiser has to follow a process that involves striking and interesting work on a certain topic at a certain time. In this context, a successful advertising campaign in this process emerges as a result of a realistic evaluation and identification of the demographic characteristics of the target group. This study involves explaining the demographic characteristics (such as age, education, gender, place of residence, occupation, income and marital status) that are vital in defining the overall profile of the target group, which are effective in the emergence of a successful advertising campaign.

**Keywords:** Target Audience, Advertising Campaign, Demographic Characteristics

### INTRODUCTION

With the emergence of the mass phenomenon of communication, the rapidity of the transmission of the message to as many persons as possible has brought about the time and space that triggered great transformations in cultural structures. The fact that massive communications are open, independent of each other, have begun to affect their level of knowledge, attitudes and attitudes (Aziz, 1982: 48). The concept of mass communication, which is the "mass communication" in English, emerges as a process in which, in the first place, antisocial social groups or individuals try to convey or convey symbolic contents to other people. Among the most important factors of this process are the fact that other people who constitute the mass have different characteristics from the ones that constitute the symbolic contents and the other is the use of technical tools in reaching the contents (Gökçe, 1993:81). The transformation that mass media has experienced in today's world, also called Network Society or Post-Industrial Society; have created significant differences in the mechanism of operation of these vehicles from the past. As a result of developments in Internet technologies and leaps in mobile technology, people are now able to communicate with each other on social networks online 24 hours a day and exist in new public spaces where they can interact and interact. As a result of the changes and transformations that technological developments cause in daily life practices, the main difference between the new mass communication channels that are developing alternatively or in parallel; all users can produce content independent of content providers and have reached the capacity to publish this content. The conceptual framework drawn by Laswell (Mutlu, 2008:178), which introduced the concept in the 1940s, is that the prominent discussion areas of mass communication in academic meetings held in the 1970s (Alemdar and Kaya, 1983:15) seen. After the periods when the owners of media tools have discussed the dimension of the capacity to establish cultural hegemony or the existence of large institutions that are necessary for content production, social networking is now the most penetrated penetration of society as a whole; the right to create content derives from the monopoly of media ownership and democratization as all the individuals have reached this capacity.

Advertising derived from the word "clamare" meaning "to call" in Latin; is generally defined as the act of promoting and adopting the people, institutions, products and services to the target group. (Karpas, 1999: 35). Advertising is the most controversial item on marketing communication. With the development of marketing, products, services, individuals and ideas are also considered within the scope of marketing, and the focus areas of advertisements are enlarged in this way. (Odabaşı and Oyman, 2002: 95) In the marketing process, advertising is accepted as part of mass communication in terms of communication. When considered by communication as an instrument of information and persuasion, It is also used to advertise a product or service in large quantities. (Gürüz, 1999: 20). Thus, it is ensured that the product or service is announced to the target masses determined by the mass media, and attitudes and behaviors are made in the desired direction.

Social responsibility campaigns can be defined as a strategic positioning and marketing tool in which various agencies use an agency or individual to connect to a related social purpose or problem within a certain period, period and movement plan to provide mutual benefits (Elden, 2009:302). Institutions contribute to a specific problem with social responsibility campaigns; At the same time, consumers have the opportunity to find an emotional connection with the media and find a place in the media. Long-term and successful campaigns; the institution is able to be news in the media and increases the likelihood of institutions in the consumer's eyes.

Being news in the media about a social campaign will attract even those who are opposed to the ad; they can create positive judgments in the minds of the institution indirectly. (Karahan, 2006: 62).

The person intended to reach the message in the communication process is one of the basic components of the target communication process, defined as a cluster or a mass. Through the mass communication, the target can be expanded from person to mass; (Mutlu, 2008: 126), which defines specific audience segments and has the definition of reaching them with the most effective channel available.

The success of an advertising campaign is assessed based on whether it can convince the target mass to meet its campaign objectives. If the advertising campaign can create a positive attitude towards the product or service on the target audience, it means fulfilling the advertising campaign objectives if it can increase the awareness or recall of that product or service. In order to achieve this, the demographic factors including age, gender, place of residence, occupation, income and marital status, which help to segment the target population according to certain numerical and livelihood characteristics, need to be recognized in the context of the basic characteristics of the target population.

### DEMOGRAPHIC CHARACTERISTICS AND SAMPLES OF TARGET AUDIENCE

**Age** is creating differences in Consumer's age group consumption behavior. For example, young age group clothes, cassette, cd products, middle age group, household goods, etc. products (Gürüz, 1999: 87). In this context, advertisers should set up advertising strategies by taking into account the age range of the target masses they are aiming to call, and identify the advertising content accordingly. The perspective of the target group that sees associations of its own age group in an advertisement for a product or service will therefore also differ in its perspective and hence in its buying behavior (Elden et al., 2008:105). A consumer in the 15-20 age group tries to follow the fashion while choosing products such as clothing, plaque, and magazines. In this way age groups are important in determining consumer characteristics due to the needs and desires of different products at different ages (Yaylacı, 1999:133). In this context, advertisers should set up advertising strategies by taking into account the age range of the objects they are aiming to call, and determine the advertising content accordingly.

In an ad for a product that one child will use, attention will be drawn to the target item, and cartoon characters, animations, or the use of real animated children as protagonists will draw attention to the child's product (Elden, 2009: 369). For example; In the Pınar Kido Fruity Milk advertisement, an advertisement consisting entirely of cartoon characters was prepared and the advertisement was animated with a clown to attract children easily.

Likewise, advertisements in which the character of Lion King Max, identified with the product by Max freezes and helping children in difficult situations, play a role in real life children in the foreground can be given as examples of advertisements prepared for children. As can be seen from the examples above, these images used in advertising campaigns show that the success of the campaign for the age factor is significant at the point of describing and attracting interest.

Like age, it plays a very important role both in the purchase decision and in **gender** differences in the choice of product or service and brand. Some products or services are directed towards women by some products or services to men. Again, while men are more decisive in the purchase of certain products or services, women have a say in the purchase decision of some products or services. For this reason, it must be determined which product or service the product or service is intended for and what the gender of the person making the decision to purchase the product or service is (Kocabaş and Elden, 2006: 60).

For example; Orkid Alldays is directly proportional to the gender factor due to the fact that the target audience for the product of the use of a woman figurine (mother, business woman, friend, etc.) who wear different collective roles in social life.

It is also possible to find advertisements in which some women's products are included as final decision makers. For example; Gillette's shaver is shown as a woman who tests and certifies the utility of the product. As can be seen from the above examples, the gender roles used in advertising campaigns indicate that the success of the advertising campaign is important in terms of defining the target audience.

Another factor that has a significant effect on the buying behavior of the target group is the **marital status** of the group in which the advertisement is voiced. The marital status also increases the needs for certain products or services, and can be influenced by specific brands or services, such as how, gender, and age group they are

involved with, which brand they are heading to, which needs and desires will emerge, and which products or services it leads to more orientation.

In terms of marital status, it is possible to categorize as the target groups, young single, young married children without children, young married children with a child under the age of six, young married children with a child older than six, elderly married children with children, elderly married children without children and single widows. Especially at this distinction, the target is decisive on the life span of the kittens, the need for children to be newly married, the need for children to be newly married, and the tendency towards certain products decreases while increasing the orientation towards certain products. This creates a point for marketers to form a basis for market segmentation and sets the path for advertisers to improve the effectiveness of advertising by preparing appropriate messages for the marital status of the target audience. For example; children's toys that are not needed during the young single age are at the forefront in the young married stage of children (Odabaşı, Barış, 2002: 254).

For example; baby grooming and baby food advertising, couples waiting for babies, and young married children under six years of age, there will be no sense for young married children aged six or over. However, Akbank's Baby Fund advertisement, where a newly married and expecting baby can be found, can be seen as an advertisement for married couples who are both waiting for a new baby and younger than six.

For older married or married children, my children will be able to focus their time on travel, entertainment, and product needs so that this kind of product or service advertising will be more targeted to this audience. For example, a pair of couple and families are shown in the advertisements of Kilim Mobilya firm and the bride who answered "enough of rug" in order to ask the mother-in-law "what you want" is displayed while shopping at Rug Store. The second ad of rug focuses on the need to renew the sofa sets in the husband's house in preparation for marrying his sons. These rug ads, new married young couples, or young singles preparing for marriage take their children as the target audience for elderly married couples in preparation for marriage. As can be seen from the above examples, the marital status of the target group and the stage of marital status have an important influence on the advertising content in terms of advertisers.

It is important to note that the target groups have different cultural backgrounds, diverse elements of subcultures, lifestyles, habits, and differences in tradition-customs, where the masses in which they advertise different **geographical locations** or advertisements in different countries offer significant clues and are not eligible for creative work in creative work (Elden et al., 2008: 111).

In international or global advertisements, preparation of contents that will not be contrary to the social values and cultural structure of the addressed country, and where necessary, advertising of the local content specific to the addressed geographical area is effective on the success of the advertisement, as well as the effect of subcultures - rural, east-west etc.) should not be ignored. The place where sustains his life can differentiate his viewpoints on visual and auditory codes in the context of the advertisements, as well as his consumption and buying habits, lifestyle, increased need for certain products, and cultural influences. For this reason, advertisers should pay close attention to the perceptions of the cultural aspects that arise as well as the needs and requirements that the geographical location is active when creating the advertising content (Elden, 2009: 374-375).

For example; In addition to global advertisements being launched worldwide by companies operating in world markets such as Coca-Cola and Nike, advertisements that include Coca-Cola's unique symbols, such as the month of Ramadan, in particular the Turkish society and their values are geographically influenced by local advertisements to advertisements that are used.

However, one of the examples of advertisements in which elements such as life styles and traditions of subcultures are emphasized in the same country is Doğuş Çay commercial, in which Sinan Çetin also plays a role. In this advertisement, a peasant girl who lives in Karadeniz, a region where tea is grown in our country, says "The most beautiful tea is Doğuş Çay" with her regional Black Sheik Shivi in her local clothes.

**Educational status** provides useful information for determining the level of education of consumers, preparing advertising plans and strategies and implementing them effectively. Buying behaviors also vary, as a consumer with a high level of education and a consumer with a low level of education may differ in the demand for a particular product or service. In this way, the selection of the media in which the advertising messages and messages will take place is determined, taking into account the educational situation of the consumer (Yaylıcı, 1999: 134).

A target group with a high educational level is more oriented towards technical products, complicated features and esthetically different products. In this context, it is much easier to perceive the content of a rational message that conveys these characteristics of a product with complex technical features in an ad that appeals to a target audience with a higher level of education. If an educational message is prepared for a target audience with a high level of education, the expected behavior of the target audience or the resultant emphasis on them can create a disturbing effect on the target audience at this level. They want to make their own decisions about what to do, or to arrive at themselves in the end. For this reason, the messages emphasized directly as the result should not be preferred while calling this mass (Elden, 2009: 371-372).

For example; In the Turkuaz Water advertisement, indirect benefits are used instead of direct benefits of water benefits, benefits of the consumption of the body and turquoise water properties. The advertisement, which starts with a mother who drinks a baby in a park and a turquoise water girl starts to take flowers from a child, helps the flower girl to download a little girl's kitten from the tree, this girl crosses an old uncle and her two uncles fight the two lovers, he continues to take the falling wallet of a certain person, who is a business man with a dress, and give it to him. At the end of the ad, the male character comes to the house and his wife, who sees the turquoise water at the beginning of the commercial, welcomes him. The advertisement, which ends with the slogan "Goodness is in its essence," is told that doing good will return to the person as finding goodness, and the goodness chain starts with the mother character who drinks Turkuaz Water. In this ad, there is no emphatic message about what to do directly to the target group, and the goodness, purity, health and benefit in the essence of the water are emphasized with an indirect expression.

Advertising messages to be prepared for low-level educational targets need to be prepared with clearer content that is simpler, easier to understand, leaner, and will not challenge the target audience, in contrast to the higher-level educational level. From this point of view, it will be a suitable strategy to prepare one-way message contents with direct narration instead of indirect narratives, instead of rational stimuli, where emotional stimuli and humor items are foregrounded at the end of the advertisement message (Elden, 2009: 371-372).

For example; the Ali Desidero Derby Shave Banner commercial, which struck a turning mark, has a direct expression of appeal to a lower level of education. Ali Desidero is presented as an opinion leader, approval authority, and goes to the factory where the razor blades are produced. "I see it all as educated children" seems to offer direct messages directing consumers as a person who decides on behalf of the advertisers.

**The income situation**, the economic situation in which the country is located, is one of the economic factors affecting the agency operations as well as all the production enterprises (Yaylacı, 1999: 135). The state of the national economy is a loyal feature of consumer behavior. In the economy, the situation of the Gross National Rate, which is the monetary expression of goods and services created in a year, is considered as the most important data in determining per capita income. In countries where income per capita is high by increasing Gross National Rate, it is easier for people to turn to consumption. In such countries, where resources can be allocated for eliminating other necessities after eliminating their compulsory needs, management managers perform activities such as product diversification and product differentiation in a more intensive manner, and accordingly marketing and advertising activities develop and become active (Gürüz, 1999:87).

For example; Peti Danone, a food item for the child to use, is advertised in advertisements containing a vitamin that contributes to the child's healthy development of the product as well as the child being affected by the user in order for the child to be bought by his parents, rather than by his / her own paternity, and if you want your children to develop healthy as a conscious mother, you should buy Peti Danone "and parents and daughters are affected as purchasers and money is separated from family income.

Although the woman who will use the washing machine as an individual in the white goods advertisement will also need to separate a share from the family income, besides facilitating the housework of the woman, the issues such as the stability in general, economic washing programs and long- income is being tried to be shared with a common decision.

For example, Istikbal Regina Ready Kitchen is trying to make it easier to get a common share of family income through the presentation of "this is your living space" by presenting the kitchen as a living room where only the woman does not eat and eat food, where the whole family can spend time, even as a baby room .

## RESULT

The ability of brands to sustain their lives depends on their preference by a specific target audience and the existence of loyal target kits. Advertising campaigns fulfill key objectives such as bringing brands together with target groups, informing target groups about the brand, and enabling the target group to choose brands. In fulfillment of these objectives, it is necessary to consider the demographic factors that are effective in shaping the buying behaviors of the consumers who constitute the target group to be effective in order to create ads that attract attention to the advertisement targeted by the advertisements and to ensure that the advertising content can create the desired effect.

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## THE RELATION BETWEEN INFOGRAPHIC AND VISUAL LITERACY

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### ABSTRACT

The developments in communication technology didn't only affect the visible side of life but also transformed the ways of thinking, perception and interpretation. The form of communication through visuals is accepted to be the reality of today. On the other hand, the digital evolution due to the advances in technology has had the advantage of ever increasing flow of data and information. Therefore, processing the intense, unorganized and complex data to transform them into meaningful and useful datasets has become an area gaining more importance. Making information more understandable for wider audience requires the presentation of data through systematic visualization. Therefore, infographics have become an element that is used more frequently in every media. Infographics fulfil a very important need in this age by presenting the information and data that increases due to technological developments through an understanding focusing on functionality and aesthetics where visual communication is in the center. In understanding infographics, the visual literacy level of the user is a factor that is as important as the quality of the design. This article examines the relation of visual literacy with the process of reading, perceiving and interpreting the infographics.

**Keywords:** Infographic, visual literacy, data visualization.

### INTRODUCTION

Ever increasing data and information flow has been another advantage of the age in addition to the dominant power of visuality and visual communication. In the age of information, the importance of visual design in the presentation of complex, unorganized information and data through a certain systematic organization is increasing. Therefore, there is also an increase in the use of infographics that presents information through visualization in various communication media. The subjects addressed by infographics are the multilayered, intense and complex information contents that need to be presented systematically. Infographics are strong instruments that present information through stories and that have the qualities of being educational, persuasive and guiding depending on the content. Infographic applications can be used every media from printed ones to digital ones in manner which is stationary, animated or interactive. In the design of infographics, various elements including data visualization, map, illustration, photograph, typography and colour are used depending on the content. An infographic, which has a high aesthetic quality and which is functional, includes variables that affect the result from the relations of all these elements to the design principles like integrity, balance and hierarchical order. From this point of view, the success of infographics to fulfil their purposes is considered to be depending on only the performance of the design team. This article deals with the infographics as the structures that require reading practice and examines their relation with visual literacy.

### THE CONCEPT OF LITERACY

The concept of literacy is frequently used in the same meaning with reading and writing skills. This traditional perception dates back to the period when printed media was dominant and it considers the literacy as the skills of reading and writing and as the process of acquiring cognitive skills. However, literacy has a wider conceptual content than the reading and writing skill which is an act realized with writing symbols. "Contingency is the leading essential quality that distinguishes literacy from reading&writing. Reading&writing is a process that requires communication by the reader between the written material and the scope of the reading condition while literacy refers to the ability to make changes between contexts and to the transfer of skills to different contexts (Gül, 2017, p.19). Literacy includes not only the reading&writing skill but also the mental processes that require processing and interpreting the information at a conceptual level.

Technological, social and cultural developments have widened the content of the literacy concept during the course of time and caused the emergence of new literacy types. There are several types of literacy including Information literacy, media literacy, cultural literacy, emotional literacy, critical literacy, web literacy, universal literacy and financial literacy etc. Evaluation of the concept of literacy by the own theoretical points of view of every discipline caused the increase of terminology variations and some differences in definitions. Under every condition, literacy is considered to be a sign of a certain competency in the concerned discipline. The common qualities in the definitions of all literacy definitions are the abilities of interpreting information, using it functionally and producing new meanings by associating it with different information.

### VISUAL LITERACY

Mirzoeff stated that "human experience is now more visual and visualized than ever before" (1999, p.1). Several

studies demonstrate that we live in a visual age that reshapes social processes, communication, ways of perception and interpretation (Barnard, 1998; Lester, 2000; Parsa, 2004; Sartori, 2004). All applications that have changed everything of man and life radically including the Internet, smart telephones as an indispensable instrument, social media, mobile applications, video games, virtual reality and augmented reality are visually oriented. The transition from page to screen and from word to image due to the developments in communication technologies has also caused changes in the concept of literacy. The fact that the people today are facing too many visual images ever before increased the need for visual literacy.

Visual literacy can be defined to be the abilities to define visual, solve their messages, use a visual language and create new meanings. According to Felten (2008), visual literacy includes the skill to interpret, design, produce and use cultural based images, objects and visual resources. Yenawine (2015) defines visual literacy to be the skill of finding the meaning in images while Sinatry (1986) considers visual literacy to be the effective restructuring of visual messages by past visual experiences to create a meaning.

Visual literacy is a skill that can be learned and improved like a language. Seeing is before speaking and words in the development process of humans. In visual literacy, visuals are interpreted depending on environmental conditions including past experiences, culture, education level, social and economic levels. “Visual literacy, like language literacy, is culturally specific although there are universal symbols or visual images that are globally understood” (Stokes, 2002, p.12).

Irvin Rock (1995) states that the brain doesn't perform a simple identical recording of the world but creates a unique picture of it. Signals transferred to the vision center go through an interpretation process by the brain with regard to what the seen thing is. Therefore, human beings are not passive audience in perceiving the world. Cognitive data, memory and experiences are combined to create a meaning about what is seen and the world is almost restructured in the mind. The previous experience and knowledge have a dominant role in this interpretation process. John Berger (1990, p.8) supports this idea by stating that “the way we see things is affected by what we know or what we believe”.

#### **RELATION OF VISUAL LITERACY AND INFOGRAPHIC**

Old definitions on visual literacy focus on the skills of analyzing and evaluating the image and establishing communication. However, most of the modern definitions on visual literacy includes all the components of design and creation as well as the interpretation of visual images. Visual literacy is considered by Avgerinou (2009) to be a series of acquired competency for producing, designing and interpreting visual images and messages while Seels (1994) sees it as a gained skill for visual communication, visual thinking and visual learning. In this aspect, visual literacy is a competency that needs to be present within all process from the creation of visuals to the interpretation of them by the person.

From the designer's point of view, visual literacy competency has to be high. As mentioned above, visual literacy also covers the design and creation processes. Therefore, the subject has to be considered from the perspectives of both the designer and the user when evaluating the infographics in the context of visual literacy. Infographics are usually produced by a team work depending on the scope of the subject matter and on the qualities of the content. For example, if the subject matter requires expertise in a certain field, the team includes an expert managing the content while interactive applications may include a software programmer. In every condition, the designer is responsible for the face of the infographic seen by the user. Visual decisions in the elements of infographic including data visualization, illustrations, colour, typography and map are given by the designer. At this point, it is necessary to emphasize the fact that the visuals are carriers of culture. Culture is an important element that affects the production process of visuals. There are some cultural differences in visual communication according to several studies (Kress & Leeuwen, 2006; Jun & Lee, 2007; An & Kim, 2007; Callahan, 2007; Wu, 2008). There are different visual languages just like the different alphabets and verbal languages in the world. Visual languages vary among cultures just like the verbal language. Gunther Kress and Theo van Leeuwen argue that visuals have also a grammar structure like the verbal language. The visual grammar concept introduced by Kress and Leeuwen (2006) in their book 'Reading Images: The Grammar of Visual Design' is a new approach on reading visuals. Kress and Leeuwen suggest that visual images can be read like texts and the grammar may be method used when working on visuals. “Grammar” is a sequence of resources that are combined for structuring the meaning rather than a sequence of rules for the proper use of visual language. Kress and Leeuwen state that the visual language which is specific to every culture has a specific visual grammar like the grammar of every verbal language includes unique differences. The fact that visual language and visual grammar are culture-specific elements is a very important guidance point for the process of infographic design. The precondition of an effective visual communication is the match of the visual language of infographics with that of the user. Again, the level of visual literacy of the user is very important for the

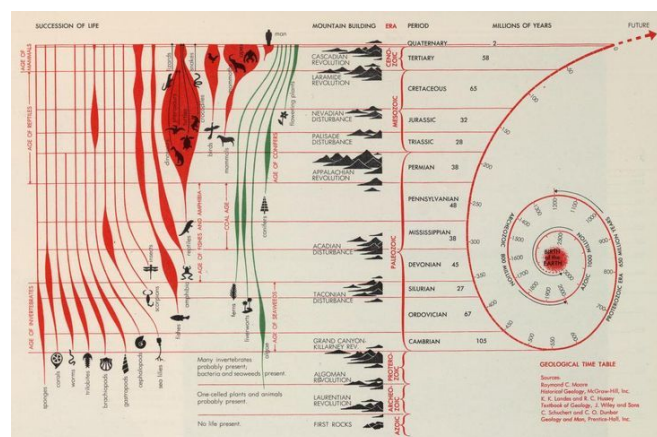
establishment of an effective communication by the infographics despite all these preconditions.

It requires a general competency to read visual language and solve the codes in the images. However, it requires even more to be able understand infographics. At this point, it would be useful to state that this article deals with infographics which visualize broad subjects that include all or a big part of the elements such as illustration, map, data visualization and typography. For example, Herbert Bayer's 'World Geographic Atlas: A Composite of Man's Environment', a book of 363 pages which he designed in 1953, is considered to be a milestone for the visualisation of information and it includes many comprehensive infographics (Figure 1).



**Figure 1:** World Geographic Atlas: A Composite of Man's Environment, Herbert Bayer, 1953.

The Atlas contains comprehensive infographics with several information data as well as conventional geographical maps. Therefore, it can be shown in the article as an example of the infographics with layered information sets and pattern structure to the extent of addressing within the context of visual literacy. The infographics in the atlas provide a comprehensive overview of the economy, geology, demography and climate of countries and they require the skill of visual literacy. For example, one needs to have the skill of “using the past information and associating information” as included in the definition of literacy to be able to understand the geographic time chart. (Figure 2). Although the illustrations and shapes that are used are understood at a single glance, it is not possible to solve the infographics without perceiving the functional structure of the unique design of the time chart. People are used to timelines however Bayer created in his work in Visual 2 a unique and brand-new time chart which is so improved that it can contain more information. The user should have the skill to use the functional logic of the timeline which he or she is used to for using as a guide to understand this chart which he or she is seeing for the first time. If reference is made to the definition of visual literacy from this example, visual literacy means not only knowing a thing but also making new deductions by using the possessed knowledge.



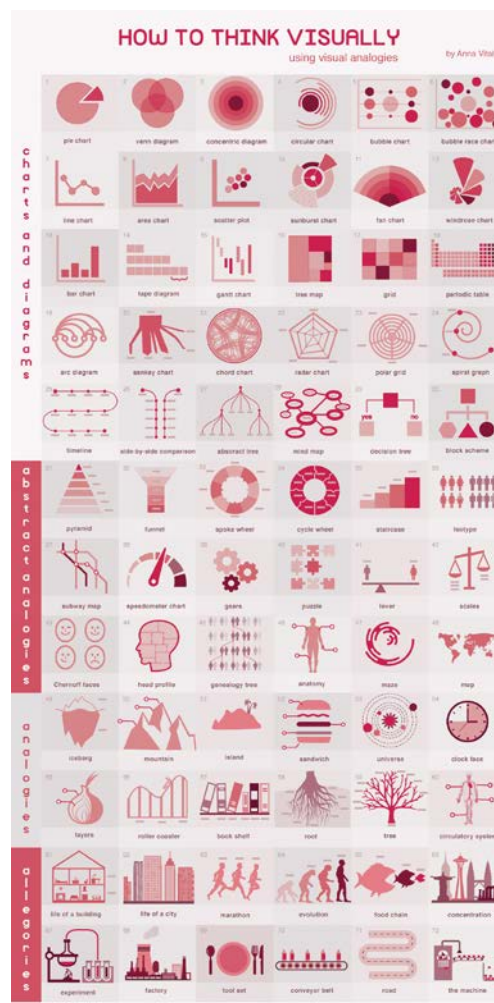
**Figure 2:** World Geographic Atlas: A Composite of Man's Environment, Herbert Bayer, 1953, p. 17.

Infographics are different from graphical design works like posters that are expected by its nature to transfer a message at one sight. Although the easy and fast perception of data is within the success criteria of infographic,

it is clear that the infographics require a certain reading process to understand information, to solve patterns and to fulfil functionality as a whole. This matches to the suggestion that “visuals can be read like texts”. On the other hand, it is necessary to state that the “first sight” is important in infographics. Reflection of aesthetically quality works and systematic information structures to overall of design.

As mentioned above, in the concept of literacy, the skill of using existing knowledge and associating it with the new information is very important in infographics. Here, what is meant by “information” is not the content/subject of the infographic but the whole of its structure and design that require visual literacy. The elements like illustration, graphic, typography, data visualization and map that are used in infographics are broad application areas that have meaning on their own and require visual language reading. The pattern emergence with the combined use of these elements in infographics can be analyzed with the skill of a person to combine and associate information.

Understanding various charts, tables, diagrams and maps used in infographics is usually associated with the previous encounter with them and acquisition of a certain reading practice. Although it dates further back, many graphic forms that are currently used were found in the 18th century. A certain level of reading maps and graphics was achieved with the increase of printed publications. Again, the perception difficulties in infographics are usually experienced in graphics with the most intense information. The elements used for the visualization of intense information and numerical values are generally called as “graphics”. As a general topic, graphics refers to the various visualization ways like chart, table, diagram and cartogram. Although the types of graphics are not within the scope of this article, the infographics consisting of visual analogies classified by Anna Vital from simple to complex may present a general overview (Figure 3).



**Figure 3:** How to Think Visually, Anna Vital.  
<http://anna.vc/>

In the context of graphics, there are many ways to visualize information. The visual library collected by Severino Ribeca through the search of different types of information visualization includes the variety of methods



(Figure 4). Rebecca revealed the method of each graphics to present information (operation principle) and the data content where it is more effective in presenting.



**Figure 4:** The Data Visualisation Catalogue, Severino Ribecca.  
<https://datavizcatalogue.com/>

As shown, there are several graphic instruments to visualize information. A certain competency of visual literacy is necessary for these instruments to provide an effective communication and transfer information. Types of information visualization like network diagram which indicates in the interconnection of facts, tree diagram which indicates the hierarchical classifications and timeline which indicates process can be perceived more easily since they don't include numerical data (see visual 2). Data visualizations including numerical values require a more improved level of visual literacy to understand if they are not one of the frequently encountered graphics. At this point, it is necessary to deal with the question of what can be called as data visualization. A frequent mistake is to call graphics without numerical data as data visualization. Data visualization can be called as the visualization of numerical values through tables and graphics and as the conversion of raw data to visual information. The most important aspect of it that it includes clear information based on measurable statistical data. For Friendly, "data visualization, the science of visual representation of "data", defined as information which has been abstracted in some schematic form, including attributes or variables for the units of information" (2009, p. 2).

Since data visualization contains too many numerical values, it is one of the strongest instruments used in infographics. As the data layers included by these strong instruments increase, a more improved level of literacy is required. For instance, "A classic "bar chart uses horizontal or vertical bars to show comparisons among categories. One axis of the chart shows the specific categories (dimensions) being compared, and the other axis represents a discrete value (metric)" (<https://support.google.com/datastudio/>). Bar graphics including only double layered information set are read more easily (see Visual 2). In addition, people are more used to bar graphics and pie charts as they are used very frequently. Radar/spider chart is a graphical method of displaying multivariate data in the form of a two-dimensional chart of three or more quantitative variables represented on axes starting from the same point (<https://appsourc.microsoft.com/>). Therefore, a more improved level of literacy is required to understand the radar graphics which include more data layers (See Visual 2). The phrase of "improved level of literacy" is intended to refer to a previous encounter with the "visual" information which is mentioned earlier. The visual literacy required by the modern age is the fact that the person has the motivation to understand or to look for the ways of understanding the new information with the existing qualities. It requires a literacy skill where more active processes are involved like searching, finding, processing and interpreting knowledge. In addition, new literacy skills are variable. Visual contents that are continuously spread from the Internet, social media and television require a skill of visual literacy that can adapt to changes more rapidly.

"Leu, and colleagues (2013) examined and analyzed the existing studies and proposed the principles of the theory of new literacies" (Destebaşı, 2016, p. 897). Some of these principles can be listed as: "The Internet is this



generation's defining technology for literacy and learning within our global community; New literacies are multiple, multimodal, and multifaceted; Critical literacies are central to new literacies; New forms of strategic knowledge are required with new literacies" (Destebaşı, 2016, p. 897).

Current studies associate visual literacy with the skills of adapting to the digital world and virtual media, understanding the visual contents produced by this media and creating content. In this context, the relation of animated and interactive infographics require more different competencies. The skill of effectively using the instruments of digital world makes it easier to understand interactive infographics. The interactive infographic applications can be web-based as well as included offline in the interface of a software product or a mobile application. The user has an active role in the interactive infographics. The user interaction includes controls like selecting the information, conducting searches and actively shaping the content to be shown. Thus, the user controls himself or herself when and how detailed to control the information. The user having such a control on the information enables interactive infographics to contain more information than their static (printed, non-interactive) versions. In this sense, the ability to better use the possibilities of the digital world with respect to visual literacy has a significant effect in the stage of analyzing the meaning structures in the interactive infographics.

Visual literacy cannot be considered to be separate from media literacy. Media literacy is defined to be the skill of reaching, analyzing, evaluating and conveying the messages in a diversity of formats (static, printed, visual, audio, motion, interactive, multimedia etc.) (<https://www.medyaokuryazarligi.gov.tr/>). In this aspect, it is necessary to have the skill of using digital media technologies that provide new communication forms to understand the "interactive infographics" that include elements like "interaction, audio, animation" together with the visuals.

## CONCLUSION

Infographics provides functional and aesthetic presentation of multilayered intensive information and processes that include not only visuals but also elements like audio, animation and time depending on the media. Infographics consist of the combination of elements like "typography, image, illustration, map, data visualization, audio, animation and time" which are contained in its structure. However, none of these elements can be an infographic on its own since infographics tell a comprehensive story by using all of these elements. Therefore, it is not sufficient to understand each of the said elements for understanding the infographics and for achieving the maximum benefit from the information. Understanding the whole story takes place by understanding the structure that consists of the interrelation of all these elements. With this aspect, infographics require an improved skill of visual literacy.

The relation of infographics with visual literacy doesn't only arise from the fact it is a structure that presents information through visual way. Understanding the pattern of all elements in the infographic with each other and the story told by this pattern requires an analytic approach where the visual structures are analyzed and re-combined. Messaris (1994) also reports that the visual literacy skill is a derivation of the general cognitive skills of a person.

Infographics intend to create a change in the audience. This basic goal sometimes involves the increase of information level of the user, sometimes persuasion of the user for an idea, directing the perception of the user and sometimes mobilization of the user directly. Significant components of visual literacy include the skill of questioning the accuracy, validity and reliability of images. Infographics have a great power of persuasion and guidance as they include numerical data and use the visual communication channel which is the most effective interaction method. From this aspect, questioning the accuracy of the information in the infographics and recognizing possible manipulations can only be possible by reading, understanding and evaluating the infographics by an analytic approach. Critical approaches without sufficient information cannot provide realistic results. As a result, establishment of effective communication by infographics doesn't depend only on the fact that is designed well on its own (ideally). The communication success of infographics takes place through a double-sided effort. The visual literacy level of the user is a factor in understanding the infographics as important as the quality of the design.

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## THE ROLE OF GATEKEEPERS IN AGENDA-SETTING IN SOCIAL MEDIA: THE TWITTER SAMPLE IN TURKEY

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### ABSTRACT

The main purpose of this study was to reveal the extent to which the role of gatekeepers in traditional mass media is realized in agenda-setting in social media. In this context, this study focused on Twitter, the most common microblogging service classified under social media, examining the role of gatekeepers in agenda-setting on the Twitter accounts of major newspapers in Turkey. The Twitter accounts of three major national newspapers in Turkey were used as the research sample. The results revealed that all three Turkish newspapers followed their own agendas to a high degree, and those agendas demonstrated continuity. Namely, the newspapers continuously reported on certain issues on Twitter, which led to continuity within the own agenda of each newspaper. One of the most important roles gatekeepers play in the media in terms of agenda-setting is that of focusing on the same issues and report the same items in foreign and political news, as well as in sensational tabloid press news for creating a dramatic effect (Erdoğan and Alemdar, 2002: 215). It was observed that in the Twitter accounts of the newspapers in Turkey, the role of gatekeepers in agenda-setting mainly occurred within this context.

**Keywords:** Gatekeepers, Agenda-Setting, Social Media, Twitter, Turkey

### INTRODUCTION

Gate-keeping, a term suggested by German-American psycho-sociologist Kurt Lewin with respect to the field of communication, was historically applied as a tool in traditional mass communication (Narmanlıoğlu, 2016: 157).

As is known, not all news materials that are acquired by communications outlets can be turned into news; therefore, they do not all reach the community. Rather, gatekeepers inspect and make selections from the materials they have acquired and determine which to re-edit and present it to the public (Tekinalp and Uzun, 2009: 94). Thus, the term gatekeeper or door holder is used to refer to those individuals who handle the messages that are distributed to receivers through a mass communication outlet (Tekinalp and Uzun, 2009: 93). In other words, gatekeeping involves the process of taking control of the coding of messages or message components by selecting the information to be disseminated and making choices about a message's display, presentation, timing, storing and repetition (Donohue et al., 1972: 53).

Gatekeepers can refer to individuals or groups of people through whom a message passes as it proceeds from the sender to the receiver; the main purpose of the gatekeeper is to filter the messages that are sent. In this sense, while a gatekeeper may allow some messages to go through, they may also stop others from being distributed. For instance, an editor may decide to include one issue and to withhold another (Tekinalp and Uzun, 2009: 94). Weaver et al. (1975: 460) contend that gatekeepers always decide what is to be news and what is not, but that the news that is to be made public is not always evaluated justly. For instance, as they explain, in traditional newspapers, some items may be handled extensively, while others can be cut short; some stories may make the headlines, while others are left to a corner of the page. In this manner, newspapers reveal the importance they place on a story by the size of the headline and the arrangement of the page (Terkan, 2005: 71). Likewise, cases where some of the truth is included in the news, while some is left out; or where stories are edited to hide the facts of a political, economic or cultural interests issue, are also included as actions related to gatekeeping. Moreover, according to Narmanlıoğlu (2016: 156), covering the main news stories in detail or leaving being covered with details or leaving certain events out altogether also comprises gatekeeping activities.

Even if the term gatekeeper is mostly based on news media's own economy politics, publisher's rules made in this line -general publication policy- other dynamics that affect this process are also mentioned. For instance, the personalities of those that make the news materials are also an important filter (Narmanlıoğlu, 2016: 158).

Gatekeeping takes place in the important tasks that shape the agenda in media routines (Terkan, 2005: 69-70). As such, McCombs and Shaw (1972: 176) asserted that editors and publishers, through their choices, have an important impact on shaping the political reality. Because of this, the term gatekeeping is closely associated with agenda; by choosing the most important stories to disseminate, editors affect the public view according to their agenda (Carter, 1998: 392, as cited in Narmanlıoğlu, 2016: 157). According to Mcquail and Windhal (1993: 145), gatekeepers are the primary managers of the agenda of the organizations they work for, and as such, they contribute to defining the public agenda (Yaylagül, 2006: 73). Yüksel (1994: 109) likewise states that gatekeepers have significant influence on defining the agenda, a function that is considered as an extension of gatekeeping (İnceoğlu, 2000: 158, as cited in Terkan, 2005: 70-71).

Also, according to Erdoğan and Alemdar (2002: 212), with respect to agenda-setting, a given issue may or may not be repeated in the media in consideration of their importance in media. Mass communication outlets monitor information about agenda-setting; and in fact, agenda-setting and gatekeepers (also known as door holders) are equivalent in terms of the tasks they entail. In the process of agenda-setting, news and information pass through various gatekeepers before they are released for audience/reader use (e.g., for publication). For example, wire services such as the AP, AA and Reuters are important determinants or gatekeepers of a news agenda; the news items they emphasize are typically adopted by local mass media. Thus, gatekeepers' decisions about the selection, design, manifestation, timing, restriction, lack of delivery, and repeating or not repeating are important aspects of information supervision. In this sense, Erdoğan and Alemdar (2002: 214-215) summarize some important findings about the important roles of gatekeepers in agenda-setting in the media:

1. Gatekeepers act without thinking about their audience when making a decision about information bearing news content. Gatekeepers' decisions are more linked to what publishers or editors think than what the audience is interested in.
2. Wire services influence editors-in-chief.
3. In foreign news; politic news; sensational news that is reported to create a dramatic effect; and tabloid thematic news, gatekeepers dwell on the same issues and deliver same news. In this context, generally, there are rarely any news items delivered by one of these that are not delivered by the others.
4. Most news sources utilized by gatekeepers are official. News items are obtained from reporters' own efforts (interviews and research), from semi-official sources (confidential, other non-governmental organizations and institutions) and from the reporting of other news media.

When the media focuses on a particular issue, it has a tendency sustain the news related to that issue. As such, there are generally no other issues in an agenda when it is focused on a specific issue. Incidents may only enter a media agenda after they have reached a certain point in terms of politics and quality, after they have been viewed one by one. In short, the media keeps bringing forward the same issues in order to keep them on the agenda, thus increasing the interest of the public in the news (Retrieved July 13, 2016, from: [http://hbogm.meb.gov.tr/modulerprogramlar/kursprogramlari/gazetecilik/moduller/gundem\\_organizasyonu.pdf](http://hbogm.meb.gov.tr/modulerprogramlar/kursprogramlari/gazetecilik/moduller/gundem_organizasyonu.pdf)).

Considering that nowadays news reporting has expanded to various forms of social media, it appears that gatekeepers have filtered into the realm of social media, as well. As with the traditional news media, the filter of the publisher also affects the information disseminated on the internet. However, the ease of use and the diversity of the internet allows us access, through diverse sources, to the information that any particular editor may have missed, deemed to be irrelevant or consciously left (Kahrman, 2013: 75).

## THE PURPOSE OF THE STUDY

The main purpose of this study is to reveal the extent to which the role of the gatekeepers in agenda-setting in traditional mass-communication outlets is actualized in social media. In this context, the study focused on Twitter, the most popular micro-blog, as a social media source and examined the role of gatekeepers in agenda-setting in the Twitter accounts of major newspapers in Turkey. The goal of this effort was to determine the relationships between their own issue agendas of the Twitter accounts of major newspapers in Turkey.

## METHOD

### The Population and the Research Sample

The Twitter accounts of all national newspapers in Turkey make up the main population for this study. As entire the population was too large to be practical, the research sample was selected through purposive, rather than random sampling. As it is in all sample types, in purposive sampling, the ability to generalize from the sample to the larger population is fairly limited. However, in cases where there is extended information about a population, purposive sampling is recognized as a good alternative sampling method (Böke, 2009: 125). This method was

considered to be appropriate for agenda-setting research, as it allows the researcher to sample from media that have been shown in previous studies to play an agenda-setting role (Kushin, 2010: 56-57).

In this case, the Twitter accounts of Turkey's three leading major national newspapers were chosen as the research sample, including *Hürriyet*, *Sabah* and *Sözcü*. The Twitter accounts of these newspapers were chosen due to the newspapers' role as the most important agenda-setting channels, as opposed to other media sources (such as television). These newspapers were chosen on the grounds that they are the leading newspapers in Turkey, thus representing the other newspapers of the nation; more importantly, they are the newspapers with the highest profile in social networking. The chosen newspapers, published by the Press Ad Agency of national newspaper circulation in Turkey, are ranked among the top five newspapers in Turkey, according to the ranking report for September through October 2014.

The *Hürriyet* newspaper, which was established on May 1, 1948, joined Twitter in August 2009. From approximately 1.78 million followers on Twitter in October 2014, *Hürriyet* has 4.23 million followers as of July 2018 (Retrieved July 15, 2018, from: <https://twitter.com/Hurriyet>). This newspaper has the highest number of followers on Twitter among other newspapers of Turkey. Furthermore, the *Sabah* newspaper, published since April 22, 1985, joined Twitter in October 2009. From approximately 537,000 Twitter followers in October 2014, *Sabah* has 1.92 million followers by July 2018 (Retrieved July 15, 2018, from: <https://twitter.com/Sabah>). This paper has the second highest number of followers on Twitter in Turkey among the other newspapers in the sample. Finally, founded on June 27, 2007, the newspaper *Sözcü* joined Twitter in November 2010. There were approximately 486,000 followers on Twitter in October 2014, increasing to 1.57 million followers by July 2018 (Retrieved July 15, 2018, from: <https://twitter.com/gazetesozcu>). *Sözcü* ranks third in terms of the number of followers on Twitter among the newspapers in the sample.

### Data Collection and Coding

In this study, the data were collected via content analysis. This step of the content analysis process, where the collection and coding of the data are carried out, is the one in which categories, time frames, coding units, and analysis units (also called contexts or resource units) are identified (Roberts et al., 2002: 457). This step, which McMillan (2000) also refers to as *defining the categories*, is the phase in which the time frame to be considered with the measuring instruments and units to be used in the study are determined. Budd, Thorp, and Donohew (1967: 33-36) identified two primary units of measurements used in content analysis studies as coding units and context units. Coding units are the smallest segment of content counted and scored in the content analysis. The analysis unit (source or context unit) is the body of material surrounding the coding unit. Therefore, it is the source of the variable to be measured. For example, if the coding unit is a word, the unit of analysis (the context unit) might be the sentence in which the word appears or the paragraph or the entire article. Many researchers use the term "unit of analysis" to refer to the context from which coding units are drawn (McMillan, 2000: 81-82).

The unit of analysis used in this study consisted of the tweets/posts that the three major national newspapers in Turkey shared in their official Twitter accounts. Furthermore, the coding units of the study consisted of content categories, which are commonly used by researchers working on content analysis on Web (see McMillan, 2000: 87). *Subject matter categories* are the most frequently used categories in content analysis. The goal is to determine what the communication is about (Holsti, 1969: 104). In this study, the content categories consisted of "subject matter categories". When the focus of study is on a specific issue, rather than on all the news stories published during a particular period, such an approach may overlook a clear relationship between agendas. Therefore, in this study, subjects that were routinely covered for a period of time were examined via the Twitter accounts of the major newspapers in Turkey, to reveal a clear relationship between their own issue agendas. The content categories/subject categories were used as coding units in the study were developed based on the previous literature and according to the contents of the tweets that the newspapers published on their official Twitter accounts during the time period examined.

In this study, the content analysis conducted in order to determine issue agendas of the Twitter accounts of major newspapers in Turkey, the resulting 21 subject categories are as follows:



**Table 1:** Issue Agendas of the Study

	<b>Issue Agendas on Twitter of the Three Major National Newspapers in Turkey</b>
1	Terror in Syria
2	USA
3	National Security
4	Terror in Turkey
5	National Policy
6	Foreign Policy
7	Military
8	Economy
9	Education
10	Science and Technology
11	Health
12	Sports
13	Art and Culture
14	Crime
15	Media
16	Environment
17	Law
18	Magazine
19	Human Rights
20	Travel and Transportation
21	Immigration

These 21 subject categories were defined and coded via content analysis. The total number of tweets in the Twitter accounts of the three major newspapers in Turkey and the issue agendas raised in this study are presented in Table 2:

**Table 2:** Total Number of Tweets and Issue Agendas

	<b>Tweets</b>	<b>Issue Agendas</b>
<b>Hürriyet</b>	965	2248
<b>Sabah</b>	334	951
<b>Sözcü</b>	491	1839

As shown in Table 2, during the time period the Twitter accounts were being examined, Hürriyet newspaper for a total of 965 tweets; Sabah newspaper 334; and Sözcü published a total of 491 tweets. The total number of agendas for all the issues covered in these tweets was 2248 for the Hürriyet newspaper; 951 for the Sabah newspaper; and 1839 for Sözcü. Among the newspapers, the one with the highest number of tweets, and in direct proportion to this, the one with the highest issue agenda, was Hürriyet.

One of the first steps in the content analysis was to specify the time frame of the study in which the categories were to be identified and the data collected. So far, there has been no research showing definitively the time period over which the agenda-setting process takes place on the Internet and/or social media. Winter and Eyal's (1981) standard duration of 4 to 6 weeks is still in use by most researchers, although it is known that researchers covering other forms of social media often use a period of several weeks (e.g., Dunn et al., 2007).

As such, in this study, the Twitter accounts of the major newspapers in Turkey and the relationships between their own issue agendas were examined over a 4-week period in October of 2014. This specific period of time did not include any kind of groundbreaking or milestone events that endangered the stability of the news coverage. Namely, October of 2014 was chosen because it was a normal time period during which Twitter's newspapers were not exposed to external shocks; nor did it encompass a political campaign period, so as not to cause a convergence between their own weekly agendas. This was done in consideration of the fact that an important event or a political campaign can affect the entire agenda, as the media in general will continuously depict the same event or political content; thus, the various outlets display a convergence in their own agendas over time. With this in mind, a normal time frame was chosen to investigate the Twitter accounts of each of the selected newspapers in terms of whether there was a clear relationship between their own agendas. In this manner, it was assured that the situation under normal conditions was presented and that the surveys were objective. In other words, in case of an extraordinary event, the impact that the media takes the same event

constant on its agenda, the impact was under control. In this study, a 4-week time period was used, as suggested by Winter and Eyal's (1981) assertion that a 4- to 6-week time period is traditionally used in agenda-setting studies. Because the goal of analyzing each of the major newspaper's Twitter accounts was to determine the clear relationships between their own issue agendas, it was considered necessary to analyze the news tweeted over a sufficient period of time. Thus, a 1- or 2-week period was deemed to be insufficient. Moreover, a 4-week period was believed to allow for a more objective relationship analysis, since newspapers may not publish tweets on their Twitter accounts for some days (for example, on weekends), whereas during other periods, they may publish a large number. Thus, the 4-week time period was chosen to allow observations of both short-term (1 week) and long-term relationships (4 weeks) between the own issue agendas on the Twitter accounts of the newspapers. Furthermore, Lee, Lancendorfer and Lee (2005: 62-63) suggest that in such studies, it is more convenient to use four-time span than two-time span. For this reason, in this study, the time period for analysis was determined as four-time parts. These were arranged as follows. Week 1: October 1-7, 2014; Week 2: October 8-14, 2014; Week 3: October 15-21, 2014; and Week 4: October 22-28, 2014. Each week included 7 days, and the relationship between weeks was examined. In other words, the extent to which each newspaper maintained its own agenda for 4 weeks on Twitter was determined by examining each newspaper's relationship with its issue agendas on a weekly basis. Tweets were collected twice a day for 4 weeks, between 7:00-9:00 in the morning and 7:00-9:00 in the evening, because these are the time periods during which Twitter is most intensely used for news and the most tweets are sent. As such, these time periods are commonly known as morning and evening news hours.

### **Analysis of the Data**

The data collection method for this study consisted of content analysis, which is one of the qualitative analysis types. Additionally, the data were analyzed with the use of frequency and Pearson correlation analysis, which are types of quantitative analysis. On account of this, this study is considered as mixed-method research.

Content analysis is considered as a first step in agenda-setting researches (Kushin, 2010: 62) and content analysis software is often used in for this purpose (e.g., Tedesco, 2005a; Tedesco, 2005b; Wallsten, 2007) (by Kushin, 2010: 64). The analysis that is carried in order to present the agendas of media outlets is considered content analysis (King, 1994: 50). The content analysis in this study consisted of an examination of the posts/tweets of the Twitter accounts of the major newspapers in Turkey in order to identify their issue/news agenda.

In this process, the statistical significance and relationships between the agendas were tested in the agendas that were identified by the researcher. The relationships between the issue agendas were identified using the Pearson correlation analysis method.

## **FINDINGS**

### **Relations among Newspapers' Twitter Agenda Contents in Turkey**

The Pearson Correlations showing the relationships among the Twitter accounts of three major national newspapers in Turkey and their own issue agendas are shown in Table 3 below.

When the autocorrelations of Hürriyet's 4-week agenda in Table 3 were examined, it was determined that the correlation values were between about 0.86-0.93. This finding revealed that Hürriyet followed its own agenda to a high degree, and those agendas demonstrated continuity. When the autocorrelations of Sabah's Twitter agendas were observed for 4 weeks, the correlation values were found to be between about 0.72 to 0.93. These high autocorrelations indicate that Sabah is also a follower of its own agenda. When Sözcü's autocorrelations of Twitter account agendas were examined, it was found that the correlations were between 0.76 and 0.97. Maintaining its own agenda, which was observed in Hürriyet and Sabah, was also valid for Sözcü.

**Table 3: Pearson Correlations among the Contents of Twitter Accounts of Turkish Newspapers**

	Hür(T1)	Hür(T2)	Hür(T3)	Hür(T4)	Sab(T1)	Sab(T2)	Sab(T3)	Sab(T4)	Sözcü(T1)	Sözcü(T2)	Sözcü(T3)	Sözcü(T4)
Hürriyet(T1)	<b>1</b>											
Hürriyet(T2)	<b>0,870**</b>	<b>1</b>										
Hürriyet(T3)	<b>0,870**</b>	<b>0,855**</b>	<b>1</b>									
Hürriyet(T4)	<b>0,851**</b>	<b>0,919**</b>	<b>0,921**</b>	<b>1</b>								
Sabah(T1)	0,779**	0,806**	0,676**	0,697**	<b>1</b>							
Sabah(T2)	0,633**	0,754**	0,530**	0,538**	<b>0,806**</b>	<b>1</b>						
Sabah(T3)	0,626**	0,768**	0,574**	0,590**	<b>0,875**</b>	<b>0,928**</b>	<b>1</b>					
Sabah(T4)	0,679**	0,762**	0,667**	0,714**	<b>0,920**</b>	<b>0,711**</b>	<b>0,836**</b>	<b>1</b>				
Sözcü(T1)	0,462*	0,348	0,198	0,200	0,637**	0,653**	0,515**	0,463*	<b>1</b>			
Sözcü(T2)	0,507**	0,639**	0,376*	0,410*	0,696**	0,942**	0,796**	0,562**	<b>0,758**</b>	<b>1</b>		
Sözcü(T3)	0,550**	0,563**	0,448*	0,456*	0,765**	0,857**	0,777**	0,693**	<b>0,826**</b>	<b>0,882**</b>	<b>1</b>	
Sözcü(T4)	0,458*	0,540**	0,394*	0,413*	0,693**	0,861**	0,737**	0,632**	<b>0,797**</b>	<b>0,916**</b>	<b>0,968**</b>	<b>1</b>

\* and \*\* indicate statistical significance levels of 5% and 1%, respectively.

## CONCLUSIONS AND RECOMMENDATIONS

In this study, the relationships between the own issue agendas of three major newspapers in Turkey, as evidenced by their Twitter accounts were investigated according to their autocorrelations. In other words, the autocorrelation of the four-week agenda of each newspaper in Twitter was examined.

In this study, it was found that statistically significant positive autocorrelations between its own issue agendas of Twitter accounts of each major newspaper in Turkey; the findings revealed high agenda autocorrelations in all three newspapers of Turkey over a four-week period. While *Hürriyet* had the greatest autocorrelation, *Sözcü* had the second-highest; and with a slight gap, *Sabah* had the third-highest autocorrelation.

These findings indicate that all three newspapers followed their own issue agendas throughout the period of examination. In conclusion, it has been found that all three newspapers followed their own agendas on Twitter and that they had a high level of continuity in this respect. *Hürriyet* followed its own agenda on Twitter most, often, followed by *Sözcü*, and then *Sabah*, with a slight gap.

The major Turkish newspapers put forward specific issue/issues in their agenda to attract public and followers' attention to these issues. This resulted in a continuation of agenda in each newspaper for four weeks, which accounts for the high agenda autocorrelation in each of these three newspapers. This finding can be explained by the role of gatekeepers in agenda-setting. In other words, the most important reason for the continuity of agendas in the Twitter accounts of the Turkish newspapers was the gatekeepers' agenda-setting role in the media.

As explained previously, one of the most important roles that gatekeepers play in agenda-setting in the media is their emphasis on the same issues in foreign news, political news, and also sensational (disruptive) and magazine themed news that creates a dramatic effect (Erdoğan and Alemdar, 2002: 215). The role of gatekeepers in the agenda-setting through Twitter accounts of Turkish newspapers has increased in this context, as the newspapers have made specific issues constant news items (for example, the *Hürriyet* magazine issues, or terrorism in Turkey; as well as in each of the three newspapers, the Syrian crisis, national security, foreign policy and national policy issues).

For example, in this study, it is seen that in the *Hürriyet*'s Twitter account, by giving place to issues that concern the whole country, as well as regular magazine issues, they keep this news at the top of their agendas, and that the magazine news has continuity in *Hürriyet*'s Twitter agenda. On the other hand, while this situation puts forward the role of gatekeepers in agenda-setting in the *Hürriyet* newspaper's Twitter agenda, the lack of magazine news that is put forward on the Twitter accounts of *Sabah* and *Sözcü* can again be explained by the role of gatekeepers in agenda-setting. A similar example from this study can be given in relation to sports news. Namely, while the sports news in *Hürriyet*'s Twitter agenda was given as much place as other important issues and events concerning the country, in the *Sabah* newspaper, only the most important sports news was given place in their agenda. In *Sözcü* newspapers' agenda, it was found that only the issues concerning the country are given more importance. On the other hand, as long as the terror in Syria, which stood out in October 2014, Turkey's most important agenda issues/problems terrorism and the issues relating to national security has also been seen on Twitter kept on the top of continuous agenda for 4 weeks by the newspapers. These examples show that the gatekeepers of all three newspapers are making decisions about which issues to keep at the top of their Twitter agendas.

The examples above support the findings of İrfan Erdoğan and Korkmaz Alemdar (2002) on the roles of gatekeepers on agenda-setting in the media, and indicate that these roles are also applied by Turkish newspapers on Twitter. Thus, in this study, the high autocorrelation levels on the Twitter agendas of Turkish newspapers are explained by the role of gatekeepers on agenda-setting in the media.

The most crucial benefits of this study are as follows:

- This study investigated the relationships between their own issue agendas of the Twitter accounts of major newspapers in Turkey.
- This study shows that Twitter is used by major newspapers in Turkey as an active and effective reporting tool in order to spread the news nowadays.
- This study shows that the specific issues that become prominent in mass media become also prominent in the Twitter accounts of major newspapers in Turkey; and that these issues are also frequently presented as news in the newspapers' Twitter agendas just as they are in the traditional media.
- This study shows that, just as the traditional and/or online media follow their own issue agendas, the major newspapers in Turkey also maintain their own issue agendas on Twitter.

- This study supports the findings of İrfan Erdoğan and Korkmaz Alemdar (2002) with reference to the roles of gatekeepers on agenda-setting in the media, and it also has revealed that these roles are also applied on Twitter by Turkey's newspapers. As such, the study shows that the role of gatekeepers on agenda-setting in the media are also applicable in the context of the newspapers' Twitter accounts.
- This study has extended the role of gatekeepers on agenda-setting in the media to Twitter.
- This study has important results regarding the media market and its implementers in Turkey. From the perspective of media markets, it is found that the Turkish newspapers are stable in terms of following their own agendas on Twitter. As such, there are no disruptions of their Twitter agendas in any sense and Twitter is consistently used by newspapers as a media tool. Thus, it can be seen that newspapers use Twitter as a media tool in terms of traditional media.
- This study shows the implementers of the news media embrace social media and use it actively. Because of this, it appears that traditional media has been integrated with social media, especially Twitter, in newspaper applications. The evidence in this study shows that social media tools such as Twitter have been embraced in terms of gathering news, publishing, sharing with followers and other media.

The most important recommendation arising from this study is that other social media tools, which the traditional media use as a news tool, should be used in order to test the role of gatekeepers on agenda-setting in terms of different media forms, time periods and issues.

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