

An Evaluation of Health News in Turkey in Terms of Media Ethics and Science Journalism

Ahmet Ender Uysal¹

Abstract

It is the political and economical context which detains us to give some thought to any subject and determines how we should approach to that subject. This case is not very different for science journalism. Monopolisation and nationalist discourse that we can consider in the political and economical context are the main factors which obstruct science communication. In this study, some chosen articles from different newspapers like Hürriyet, Zaman, Cumhuriyet in the time period of 2014-2015 will be analyzed through the notions of monopolisation and nationalist discourse by integrating them with media ethics. A total of 9 health news chosen from three separate newspapers that represent different investment groups will be analyzed by method of Van Dijk's critical discourse analysis. Since they are related to the term science communication, health news are about R&D (Research and Development) activities and performed surgical operations. For the news to reflect the actual agenda, they are selected among the publications within a two year period of time with regard to nationalist discourse and monopolisation.

Keywords: Science Journalism, Nationalism, Monopolisation, Ethics

1. Science Journalism and Turkey

In recent years, important efforts have been made in the world to increase the scientific literacy that is fundamental to science journalism (Miller, 2001). When science is thought to be for the sake of humanity, efforts to reach the people are of such importance.

¹Research Assistant, Department of Cinema and Television, University of Yuzuncu Yil, TURKEY.
E-mail: a.enderuysal@gmail.com.

Direct access to the public is much easier than the old one. Nevertheless, science journalism is imperative in bringing together all sorts of people with innovations. Einsiedel and Thorne (1999) evaluate the public understanding of science in two groups. The first one is a scientific heritage model and the second one is a scientific model of interaction. This model assesses the precise frame of science within the context of various cultural contexts. As can be understood from that point, the effective science journalism requires a public cultural heritage and expert communicators. Although the current developments can be transferred to the public, it is important to consider scientific activities in a wider context than to inform people, in terms of create scientific cultural heritage. In this respect, some writers have viewed the science journalism as a form of bilateral communication in which appropriate skills, media, and dialogue are used, by basing this broad context on the public (Burns et al., 2003).

As you can grasp from this, science writers are of great duties. Science journalism needs a great deal of science writers who take advantage of broad perspectives and synthesize different perspectives in the eyes of the public. It is seen that visualization of creative expressions can be important when considering how this broad perspective can be created. Visualizations that help us to solve problems faster can also help us to learn something new (Ware, 2013). In other words, the level of understanding of scientific information can be further increased by imaginary visualizations. Raising scientific culture in a society is based not only on the writing of science but also on the important connections between scientists and journalists. One of the important problems at this point is that scientists should not pass on productive links with journalists (Kennedy, 2010). Given the rapid developments in scientific research, it is important for journalists to communicate with scientists so that science journalism does not become a tool for the capitalism process.

Because science journalism is shaped according to the political and economic forces it is in, it cannot be considered separately from the ownership structure of the media. While this proprietary structure protects its own interests, the submission of scientific information without economic value is contrary to the market mechanism. From this point of view, there may be a lot of scientific information that is not circulated so that it does not contradict the mechanism of the market. Begley (as cited in Hartz & Chappel, 1997) working in the *Newsweek* magazine says that he writes scientific developments in everything from archeology to genetics and physics, but does not write science news about sick people. To be understood, it is difficult to think science journalism apart from economic context.

It can be said that Turkey's science communication is far adequate behind when it is looked at expanding science communication. Although a scientific organization which is the Scientific and Technical Research Council of Turkey has attempted to reach out to the public with popular science journals and popularizing books of science since 1967, a direct link to the public was occurred with publishing of the National Science and Technology Policy: 2003-2023 Strategy Record (TÜBİTAK, 2004).

If we consider that we cannot create a scientific value without sharing scientific production with the public, it can be said that Turkey is quite far away from this issue. Similarly, the position of health news in Turkey in science journalism is also quite declined. According to a research published in 2002, the newspapers in Turkey do not give any information on the first page from the medical field. While the newspapers such as the Cumhuriyet concentrated on the subjects compatible with their own ideologies, mainstream newspapers such as Hürriyet took the subjects which are sexuality, death, rejuvenation and weakening in the foreground in science journalism.

As a result of this study, it has been revealed that there is always hope for cancer type diseases, and rejuvenation, beauty, etc., which are exaggerated. In other words, the new trends in scientific developments and the relation of science to the related industry are mostly blinked in science journalism in Turkey. When health news is taken into consideration, it can be said that ignorance and lack of education also poverty and illness are presented together (Erdoğan, 2007).

2. Nationalism And Monopolization In Terms Of Media Ethics

While media ethics is developed through a set of rules, these rules are based on social work rather than being ethical or honest (Bertrand, 2004). Social function logic helps journalists make moral and professional decisions when they promote certain common values (Kirtley, 2010). The application of these general values within the media depends directly on the media employees. The real problem here is the obligation to comply with sanctions according to the power relations within the media. These sanctions are directly linked to the political power together with the economic rules in which the media is located (Ünlüer, 2006).

The media ethics discourse is shaped around the ideal of neutrality as well as power relations (Altun, 2014). The discourse of impartiality is a kind of antidote to emotionalism and ultra nationalism in the media (Streckfuss, 1990). Two of the concepts that disrupt the neutrality in science writing therefore, constitute the subject of nationalism with monopolization. Nationalism can be thought of as a question of belonging to which values are common to others and what distinguishes you from others (Weeks, 1998). Similarly, Millas (2009) discusses the concept of nationalist thinking while referring to the concept of the obligatory other that any community has acquired meaning.

The prejudices people make against the other cause them to be unaware of others, or reluctant to relate to others. The perception of others as direct threats also facilitates the border of the ideology of nationalism. When it is looked at the ideology of nationalism in terms of Turkey, it can be said that many *homo-sacers*² have been created together with the nation-state construction. When considered from the point of view of the today, it is seen that the nationalist policy preferences take more support from the liberal values and the social state concept is put back into the plan (Coşar & Özdemir, 2014). This situation has broadened the scope of science journalism in Turkey and facilitated its descent into the public. Nevertheless, the media continue to build solid solidarity groups by deriving imaginary communities through the language they utilize (Anderson, 2007). This distinction created between science and media culture through the ideology of nationalism in Turkey is one of the most important problems to be overcome. This situation causes the people not to understand the standards of science, the misrepresented scientific information and the unilateral view of the people to be increased even more.

In science journalism, monopolization which is the other obstacle to prevent the neutrality means that a small number of firms in the market to establish dominance over the market by negotiating among themselves (Avşar, 2004). Nowadays, media associations that are generating in media sector have created the so-called *partisan* media and the so-called *opposition* media groups that are far from the norm or not. Even if the discourse of polyphonies evokes freedom of the press, it is understandable that the modern media throw back the science journalism in need of great investments and continuously renewed technologies. Since the media sector does not limit its own structure, it always limits its opposition to the economy in which it is involved in (Çavdar, 1980). Science journalism has no purpose to preserve the economic structure which is connected to media sector.

²Homo-sacer or sacred man. According to Agamben (1998) homo sacers are excluded from legal state protections therefore, can be murdered with impunity.

Today, intense monopolies in the media cause media companies that are weak to be removed from the environment, and large media organizations that directly integrate with the economy cause them to manipulate the information for the sake of their own interests.

As can be understood from this, transition from multi-voiced to mono-voiced in the media evokes ideologies such as nationalism in the daily structure of the media and the cooperation of the media in economic structuring. Being able to maintain neutrality in journalism requires liberation from disciplined minds and desires that embellish a story, besides economic freedom (Umeogu & Ojiakor, 2012). For this reason, it can be said that the media sector has always continued with the tensions between ownership and control.

3. Methods and Findings

In this study, a total of 9 health reports selected from Hürriyet, Zaman and Cumhuriyet newspapers, between 2014 and 2015, will be analyzed according to the method of critical discourse analysis of Van Dijk in the axis of nationalization discourse and monopolization. Health news took the research and development activities and performed operations as topic due to its proximity to the concept of science journalism.

The newspapers to be examined depend on different groups of capital. The capital groups and the political views that are attached to them are these. The Hürriyet newspaper, which is affiliated to Doğan Group, represents the center-right values in the mainstream media. Even though some media groups are deleted from time to time in the media structure of the country, it can be said that Doğan Group dominates the media sector in general.

The Zaman newspaper, which is affiliated to Feza journalism, which is the chairman of the board of directors Ali Akbulut, is the most important one among the Islamic media groups together with Cihan News Agency, TV and radio channels which are connected to the same group. The Cumhuriyet newspaper, belonging to the Cumhuriyet Foundation, is a newspaper with a left-wing opinion that embraces Kemalist values. The reason why the handling of the newspapers with different political views is to see the discourses of economic, political connections and changing science journalism more facilitated. The aim of the research is to be able to read nationalism and monopolization through health news related to science journalism.

The method of analysis of discourse that will be used in the research is a method to examine the news together with its context and tries to find out how the relations of power in the news, the dominant discourses of the society and prejudices are established in discourse (İnal, 1996). Critical discourse analysis also deals with how various social phenomena such as power relations, ideologies, identities are reflected in the language and the social plan through language (Dijk, 2003). The works of Van Dijk to focus more on media texts are of great importance in resolving the hidden discrepancies in science journalism. Another important feature of this method is that it can explain not only the textual and structural aspects of news, but also the level of production. In other words, relations are evaluated in a broad social context (Ülkü, 2004).

The following is seen if it is referred how analysis of critical discourse is applied to the news. First of all, the news is divided into macro and micro structures. Macro structures are divided into two sections again, as thematic and schematic analysis. The thematic analysis consists of sections such as news headlines, subtitles, news entry and spot.

In the thematic analysis, the macro structure of the news is tried to be revealed in general terms. Schematic analysis takes precedence over situations and interpretations. In the situation section, the structure of the story, information about whether the information is given in full or not, and information about the way the event is processed is examined. While background information expresses the social and political aspects of events, the comment section refers to the knowledge of the parties involved. At the micro level of the news, word choices, sentence structures, causality relations between sentences and rhetoric logic are examined. It is also important that the culprits be set up actively or passively as linguistically. Thus, in the news, who are benefited from and the persuasive elements are understood more readily (Dijk, 1988).

3.1 Quantitative Findings

The distribution and topics of the nine newspapers published between April 2014 and April 2015 are as follows. One operation and two r&d activities news were selected from Hürriyet newspaper, three r&d news were selected from Cumhuriyet newspaper, two operations and one r&d activities news were selected from Zaman newspaper. When it is looked at the photographs published in the newspapers, the following are seen. One photograph was used for all news in Zaman and Cumhuriyet newspapers.

A total of seven photographs were used in the Hürriyet newspaper. The fact that the news in the Hürriyet newspaper belongs to the Kelebek Annex is a big part of it. Hürriyet Kelebek newspaper magazine presents news about the culture, art and television world. It contains the photographs about news, scientists and doctors. Photographs about the r&d activities abroad are photographs in which do not includes the scientists and have general knowledge about the subject.

The news that most of the photographs are used is the news of the Hürriyet Kelebek newspaper, titled "We have produced a medicine that no one can produce", where four photographs used belonging to the same person. This newspaper has used the people front panel for news photographs. In Zaman and Cumhuriyet newspapers, photographs are used which are related to more than one person and general or subject.

3.2 Thematic Analysis Dependent on Macro Structure

3.2.1 Headings

None of the news appeared on the first pages of the newspapers. The headings that form the main text and read the main idea of the text can be considered collectively. Hürriyet: 1. Diyarbakır has left the US behind in organ transplantation (28 April 2015). 2. Turkish doctor entered the medical literature (28 February 2015). 3. We have produced medicine that no one can produce (6 April 2015). Cumhuriyet: 4. A breakthrough exploration in the treatment of cancer (12 February 2015). 5. Grand prize for the Turkish scientist (30 April 2014). 6. The English also favored Karatay (10 February 2015). Zaman: 7. Historical invention of Turkish geneticists, hope for heart attack (16 November 2014). 8. Turkish doctors transplanted liver for the first time in Kazakhstan (December 20, 2014). 9. Turkish doctors make Nigerian Mahmud laugh (24 November 2014).

Although the details of the events from the headlines are not understood, it is seen that some titles are directly answered about people and where the event happened. While 1st news took the city of Diyarbakır as the venue, 2nd, 5th, 6th, 7th, 8th, and 9th news respond to ethnic identities.

Whilst the 3rd news links the question of whom directly with Turkey, the 4th news has described an important scientific development in the world by addressing a fatal disease other than nationalist rhetoric. The Hürriyet newspaper has used its nationalist discourses as its backbone as other newspapers, but also used the backward-looking statements of its ethnic identity rhetoric compared to other newspapers. The Cumhuriyet newspaper has used ethnic identities intensively in its titles and has also published the interesting health news. The Zaman newspaper has used ethnic identity discourse in all news.

It can be said that all news titles are sensational ones when it is approached to the titles in terms of science journalism. News headlines have always approached health developments from a positive angle. The titles outside of the Turkey are used to make incidents credible, to show resources and to raise the country's image. Hürriyet's first news focuses directly on the city of Diyarbakir. The title is presented in the form of competition between the United States and Diyarbakir. However, in science journalism first of all, it is important to show correct references. In the title, there is no clue as to the scientific institution or persons when the states are prominently in competitive.

Other news published by Hürriyet is presented in a way that reflects Turkey's situation in the face of developments in the world. The news published by the Cumhuriyet titled "The British also favored Karatay" (February 10, 2015), while comparing a scientist with Britain, established scientific discourse directly over the UK. In the title of this news, it is seen that the UK, which is shown as a leading country in science, plays a role in increasing the credibility of the events.

3.2.2 Presentation of Main Events in News Entries

The news spot titled "Diyarbakir Gazi Yaşargil Training and Research Hospital" which was given to Hürriyet by the Organ Transplantation Center in 2013, carried out kidney transplant to 70 patients in 20 months"(April 28, 2015) emphasizes the number of operations performed. In this news, the event that provides success is the excess of surgeries performed. In the opening sentence of the news, a word of Assoc.Dr.Hikmet İyem was given.According to İyem, while the rate of survival after the kidney transplantation is 93-95% in the American Organ Transplant Guidelines, this so-called rate is 100% in Diyarbakir Gazi Yaşargil Training and Research Hospital.

That is, there is a contradiction between the input of the news and the summary of the news. In the summary paragraph, it is stated that the achievement of the number of organ transplants is explained. It is said that the achievement in the entrance culmination is provided by the survival rate rather than by the number of surplus according to the expert. This situation, which has led to misunderstanding of the readers, has led to the manipulation of the truth and contradicts scientific ethics. Although the use of the expert opinion is important for science journalism, the misconstruction of the news summary casts a shadow on this.

It was said that "A group of doctors from the Uludağ University Medical Faculty Hospital have developed a scoring chart for grading the condition of *fournier gangrene* patients and have successfully entered the international medical literatures by the name of the university" (February 28, 2015) in the second news reported by the Hürriyet newspaper. The most striking feature here in terms of science communication is that there is no explanation about the disease which is called *fournier gangrene*.

It is important to establish an understandable bridge between public and scientific terms in science communication. The news was given by using the expert opinion as it was in the first news of the Hürriyet newspaper. Assoc.Dr.Ersin Ozturk indicates that gas gangrene species disease is a lethal disease. The disease, which is not explained in detail in the summary part of the news, is explained even if it is not very detailed in the introduction part of the news. The third health news reported by the Hürriyet newspaper is about drug development.

In the summary paragraph, Murat Kalayođlu and his colleagues in Harvard have discovered that some medicines during coincidence have melted fat around the eyes and that they have produced two different creams accordingly. Explanation of this news was incomplete and it has not been mentioned where Harvard is a university and in what country, assuming that everyone will know it. It is very important to provide explanatory information about people and institutions in terms of science communication. The creation of a nationalist discourse at the head of the news also led to a certain contradiction between the title and the news summary. The other news, titled "We produced medicines that nobody could produce" (April 6, 2015), gave us the answer that we produced this drug as the country for question of who produced it.

However, it is understood from the news spot that the drug was developed by Kalayođlu and his colleagues at Harvard University. In other words, a scientific study carried out on behalf of the United States was directly owned by the country because it was a person with a Turkish name and identity who did the work. This situation clearly shows us that scientific ethics is directed for the sake of political purposes.

The news which was about an important development in the treatment of cancer and was published Hürriyet newspaper, describes the molecule discovered by a French biologist.

Although the headline "The discovery that will revolutionize the treatment of cancer" (February 12, 2015) contains a definite statement, it is based on certain possibilities afterwards. The introduction sentence of news states that it gives positive results for certain types of cancer and is tested only on mice. The presentation of the news head in a very sensational way has been counterproductive to scientific ethics and has created a situation that can be misunderstood. The second news of Cumhuriyet journal, titled "The Grand Prize for Turkish Scientist" (April 30, 2014), has similar characteristics to the third health news reported by the Hürriyet newspaper.

On the news spot Prof. Dr. Gökhan Hotamışgil studied at Harvard University in the United States has been awarded the 9th Danone International Nutrition Award for its discoveries in metabolic diseases. In this news, the work done on behalf of another country is based on a nationalist discourse. However, it is not directly attributed to the whole of the country as it is in the news headline of Hürriyet. Unlike the news given by the Hürriyet newspaper, the name of the university and the country in which it belongs is explained in detail. The other news, titled "The British justified Karatay" (February 10, 2015), states that a scientific research in England supports what Karatay says. This news from the Cumhuriyet newspaper does not specify who Karatay is and her profession. Although Karatay is well known by the people through the media, it is very important to call every part of the people in science journalism on an equal footing. It is always necessary for science journalism to specify who the people are and the credibility of the source.

In the summary of the Zaman journal's news titled "Historical invention of Turkish geneticists gives hope for a heart attack" (16 November 2014), mentions about a discovery made at Faculty of Medicine, Turgut Özal University. The study, written in the form "They produced cells that perceived and treated before the heart crisis took place. The study gives hopes for a definitive treatment against a heart attack" is written in a way that gives a direct hope to the illness, the risk of heart attack, rather than how it is produced. The second news of the Zaman newspaper is about the first liver transplant surgery performed by Turkish doctors in Kazakhstan. According to the news spot, "Ankara Hospital organ transplant team of Başkent University signed a first in medical history of Kazakhstan's" (December 20, 2014) said that those who carried out the surgery were actually a team from Başkent University.

This news emphasizes that this is a first liver transplantation in Kazakhstan, rather than the importance of transplantation. The discourse of nationalism that has been established has caused the surgery to be held back on the news. The Zaman newspaper quoted mother Halima, who prayed to hear the voice of her child Mahmud in his other news article, titled "Turkish doctors make Nigerian Mahmud laugh" (24 November 2014). The main emphasis here is on mother Halima instead of surgery. The operation performed was handled emotionally in terms of mother-child relationship.

When the news is briefly summarized, it appears as follows. In Hürriyet's news, incompleteness between the news headline and the content and inadequate information in terms of science journalism are preliminary. The lack of title and content incompatibility in the Cumhuriyet journal is an important question, not to be given explanatory information in hopes that the public will understand. In the Zaman newspaper, it was seen that religion and nationalism were taken in the forefront and the hope was distributed to the public.

3.3 News Resources

The Hürriyet newspaper used its own resources for the two reports it wrote. One of these news reports is from Doğan News Agency and the other is from a special interview made by the reporter. Another article titled "Turkish doctor entered medical literature" (February 28, 2015) was obtained from Anadolu Agency. Although the Anadolu Agency is subject to the provisions of private law, it takes the state's assistance and the change of administration in every change of power makes it a close institution of power (Bengi, 2012). The news of the Cumhuriyet newspaper only belongs to itself. A news titled "The Grand Prize for Turkish Scientist" (April 30, 2014) received from Doğan News Agency and the other news titled "A breakthrough in cancer treatment" (12 February 2015) received from the Anadolu Agency. The Zaman newspaper used his own resources for all the news he wrote.

3.4 Background Information

The fact that news discourse is an ideological mode of production is directly related to the background and context of the news. In health news, it can be said that all news has its own background information. Most reports have identified titles and topics through nationalist discourse. The important one is that it is to be able to define what the nationalist discourse will be able to play in its backdrop. Nationalism discourse prevents the country from seeing the real situation in scientific sense in the news. Background information is also needed for a detailed view of monopolization and for the reliability of resources.

Therefore, a short background will be given for news. Dr. Murat Kalayođlu who was mentioned in the Hürriyet newspaper's news titled "We have produced a medicine that no one can produce" (6 April 2015), is also the founder of another company named Health Honors, which was sold in 2009, apart from Topokine Therapeutics named company mentioned in the news (Oktay, 2012). This company has received clinical research support and produced software that can predict health behaviors. The fact that Kalayođlu is the founder of more than one company makes it easier to conduct material investigations and to test the medicinal product through the companies that have been contracted. The fact that Kalayođlu is an expert in clinical diseases at the same time indicates that the drug may not be a simple coincidence (Bauer, 2008).

Another news article titled "The Turkish doctor entered the medical literature" (February 28, 2015) presented in great success, contemplates that the *fournier gangrene* disease may have different possibilities in the scoring table. Roghmann et al. (2011) states that it is quite difficult to say that a table for this illness is far more successful than the others. This suggests that different views should be taken into account in science journalism in our country where more precise statements are made. The success rates in the American Organ Transplant Guidelines mentioned in the news titled "Diyarbakır has left the US behind in organ transplantation" (April 28, 2015) are constantly renewed information. Success rates in these areas may change over time, and according to many scientists it is more useful to consider it as a regional rather than a country (Heemann et al., 2011). Therefore, while science news is being written, it should be avoided to apply definite statements different from other news.

It is mentioned about the 9th Danone International Nutrition Award in the news that was published from Cumhuriyet journal with title of "Grand prize for Turkish scientist" (30 April 2014). The part of this award, which is distributed every two years by Danone Institute, is given to the winner and the other part is given to the institution that the winner works for (Danone Institute, 2015). This situation leads to the sustainability of the research and leads to the institution reaching more people. The Danone Institute, founded in 1991 by the Danone Company, can be called an organization that protects its own economic interests, not an independent organization, although it is a non-profit organization, directly undertaking activities on behalf of the company and forming its closeness to the half of the nutrition award jury. The second news in the Cumhuriyet newspaper titled "A breakthrough in cancer treatment" (February 12, 2015) is about a drug found by the French biologist Aurelie Juhem. Juhem, is a founder of a cancer research firm named Ecrins Therapeutics, founded in 2010.

This company which was founded to develop the certain drugs works in partnership with many institutes. The drug, already called ET-D5, is touted to be the main drug-maker of the company (Ecrins Therapeutics, 2016). In other words, the r&d activities of the company are carried out directly through this company and the advertisement of the drug is done through the same company. The other news, entitled "The British deserved Karatay" (February 10, 2015), does not give any information about Karatay as mentioned before. Prof.Dr.Canan Karatay working as a faculty member of Faculty of Medicine at İstanbul Bilim University is the author of the book of Karatay Diet (Karatay, 2016), which for many years has been forbidden in the medical world due to obesity, predicting cholesterol-predominant nutrients such as meat, fish and milk to be used based on scientific facts. Though the reference attributed to the title of the news is trustworthy, references of the content of the news is not reliable. In the news, only the British Daily Mail newspaper was used as source and no expert opinions were used.

Zaman Journal's news titled "Historical invention of Turkish geneticists, hope for a heart attack" (November 16, 2014) is about a medicine found by Faculty of Medicine of Turgut Özal University. Faculty of Medicine building of Turgut Özal University was taken over from Fatih University in 2013 (Fatih University, 2010). Fatih University is known to close proximity to Gülen community as the Zaman newspaper (Ntv Haber, 2010). The other news titled "The Turkish doctors made liver transplants for the first time in Kazakhstan" (December 20, 2014), is mentioned in the Zaman newspaper as being sponsored by a local organization called KZK Medical in Kazakhstan. According to Metin Koçak, the director of this organization, it is a company established in the context of Turkey-Kazakhstan cooperation in 2014 (Haberler.Com, 2015). That is, this organization has a direct partnership with Turkey.

The Zaman Journal's third news titled "Turkish doctors make Nigerian Mahmud laugh" (24 November 2014) states that Mahmud firstly went to the Nizamiye Hospital opened by Turkish entrepreneurs in Nigeria and then went to Faculty of Medicine of Turgut Özal University. Yakubu (2015) states that the Nizamiye Hospital which is in the service movement of Gülen with other international colleges in Nigeria. In other words, Fatih University and Nizamiye Hospital, which are in the news, are close to each other and support each other.

3.5 Analysis Based on Microstructure

The news in the newspapers includes active or passive sentences that vary according to people and institutions. The thing which determines to be active or passive form of these sentences are based on one who says it and on which side has the power.

When we look at the sentences established in terms of Hürriyet newspaper, the sentences such as "kidney transplant was done to 70 patients in 20 months" and "we passed the USA with the survival rate in kidney transplantation" are active clues. When asked who it is, it is seen that it is the organ transplant center established in a state hospital with the support of the health ministry. The sentences such as "Is this a revolution?", "Can we see that a Turkish scientist has taken the Nobel?" "We have produced a medicine that no one can produce" are the scientific development that is based on the nationalist discourse, not the person but the country. The statements such like "The West looks at us negatively", "A group of doctors from Uludağ University Medical Faculty Hospital ..." similarly establishes nationalism over the country and bases its development on a state hospital.

The Hürriyet newspaper preferred to establish scientific developments in the field of health through the state. The Cumhuriyet newspaper has set up the rhetoric of nationalism more like people and has taken individual efforts to the forefront with sentence such as "was given to the world-famous Turkish scientist Prof. Dr. Gökhan Hotamışgil", "The British favored Karatay", "A molecule found by French biodiversity...". The Zaman newspaper, on the other hand, has taken foreground to institutions that have close relations under such nationalist rhetoric with sentence like "Turgut Özal University has achieved a worldwide success", "The doctors in Nizamiye Hospital have been very helpful to us", "KZK Medical Director Koçak, Turkey's experience in medical field ...". When it is approached to news in terms of science journalism, it is also very important whether term explanations are made or not. The Hürriyet newspaper describes the terms of expressions such as "laparoscopically closed surgery", "ophthalmologist (eye disease specialist)", "said the subject disease, which is a gaseous gangrene type, is a serious illness that is fatal". The Zaman newspaper has used far fewer scientific terms in its news and has just made a statement in only one news with saying "tracheostomy (hole opening)".

This situation has made it easier to understand by the public and sometimes has made it difficult. For example, "The project, aimed at recognizing heart disease and moving to treatment for heart disease through the genetic development of cardiovascular cells before the heart attack has yet to take place" sentence which is included in the Zaman newspaper's news entitled "Historical invention of Turkish geneticists promising a heart attack" (November 16, 2014) is a very difficult to understand and overturn. The headline is also problematic in terms of sentence organization.

The treatment of the heart attack has both been given hope and based on the event's exactness as a historical invention. That is, a statement of probability is used side by side with a definite expression. The Cumhuriyet newspaper did not disclose terms such as type 2 diabetes, toxicology, inflammatory, cardiovascular and just described the "atherosclerosis (arterial stiffness)" term in a news titled "Great award to the Turkish scientist" (30 April 2014). This situation made it very difficult to understand the issues rather than the other two newspapers.

Another factor that may be important in terms of science journalism is how scientific sources are given in the news. The sentences which are in the news of Cumhuriyet newspaper titled, "The British righted Karatay" (10 February 2015) such as "Some experts now say that the carbohydrates are bad and that a bad image like fat has been created", "In the UK in 1991, 50 percent of the calories were taken from carbohydrates," refer only to a developed country and not to explain who the experts are. It is also important to note that the inability to reach the source may be more in foreign news. Two news of the Hürriyet newspaper are based on foreign sources and the other news is based on conversation. This suggests that there is no need to reach the source.

Nevertheless, discourse of experts can be manipulated. One of the subtitles of the news titled "We have produced a medicine that no one can produce" (April 6, 2015) states that the drug is a revolutionary. The expert, who is consulted, based on the probabilities instead of a definite statement by saying, "Yes, they say that it can be described as a revolution". The news of the Zaman newspaper has been obtained through institutions that are close to being and based on foreign resources. The opportunity to access different sources distinguishes Zaman newspaper from other journals. However, this does not preclude the formation of expert opinions under the political view of the journal. The expert opinion appeared only in the last paragraph of the news entitled "Turkish doctors make Nigerian Mahmud laugh" (November 24, 2014), and it was stated that it was only partially corrected because he was young. Nevertheless, it is not mentioned about that partially correction until the last paragraph. The news of the Zaman newspaper was written based on the opinion of the family who was consulted to get news rather than the expert opinion. The sentences like "I prayed even to hear the voice of crying", "Turkish hospitality was our luck" made close the news to the Turkish-Islamic discourse at the same time.

The monopolization phenomenon, which is the main factor that makes science journalism difficult and was mentioned when the background of the news was given, existed in many news articles at the same time. The news of Cumhuriyet newspaper titled "The discovery that will revolutionize the treatment of cancer" (February 12, 2015) mentions about a system called *Crowd Funding*. This system is used to make donations to projects over the internet. In the news, it was mentioned that there is such a system in Turkey and advertising of this system is being done. For example, a video game *Star Citizen*, although not directly related to news content, has been supported within the scope of this project. The phenomenon of monopolization can also be attributed to a number of unexplained developments.

In the news titled "The British also favored Karatay", it was said that The British National Health Service suggests to consume potatoes, bread, rice and milk, but it is not clear why the world accepts carbohydrate intensive foods. While science news was written, it is also important how the news is set up in terms of rhetoric. Rhetoric is a necessary element in order to be able to see what subjects are more important to the public in terms of science journalism. It is said that drug is related to the aesthetic world of medicine, in the news titled "We produced a medicine that nobody could produce" (April 6, 2015). It is also described that this drug can be used in diseases such as AIDS and Lipoma (fat accumulation). Although the drug may be used for aesthetic purposes, the fact that the subtitle is based on an important and deadly disease indicates that these diseases may be more important for the public. The drug is for everyone and the emphasis on youth is on the front plan. These persuasive elements have been reinforced by statements such as "for younger hands" and "men are also very interested".

The subtitle of news titled "Turkish doctor entered medical literature" (February 28, 2015) is "The West is looking at us negatively". In this news, the rhetoric is based on difficulties. The disadvantage of the country has been mentioned with saying "We tried so hard until we made them accept to Uludağ Fournier Gangrene Severity Index". In other news entitled "Diyarbakır has left the US behind in organ transplantation" (April 28, 2015) persuasive elements are provided by saying that "The patients who had gone to the big cities such as Istanbul, Ankara and İzmir for kidney transplant now apply to the center in Diyarbakir". While the importance of news described with saying "Nobel of nutrition science" in the news entitled "The Grand Prize for the Turkish Scientist" (April 30, 2014), the news, entitled "Breakthrough in Cancer Therapy" (February 12, 2015), has established its rhetoric by saying that it can be tested on humans next year.

The news titled, "Historical invention of Turkish geneticists, hope for a heart attack" (November 16, 2014), says that the the won contest was organized by the Massachusetts Institute of Technology (MIT), one of the most respected universities in the world.

The news, titled "Turkish doctors made transplants for the first time in Kazakhstan" (December 20, 2014), said that the event took place widely in the Kazakhstan press, and based its conviction on another country's media. In general terms, it is seen that the scientific awards that are earned are identified with developed Western countries, while the achievements in developing countries are based on different criteria. In the health news, fatal diseases, rejuvenation and the testing of new scientific developments on humans have become more important. It has also been seen that the news is pronounced for everyone and the scientific development is identified with economic development.

Conclusion

The speed of scientific developments increases the need for information and also brings the responsibility of transmitting information to the public. The way in which the content of science news is created is the most important factor that will shape the public perception of science. The first result of this study is that nationalist discourse, and often interesting topics that are incompatible with the content of the news are in the foreground in the news. The discourse of nationalism in the news has been used to cover the level of development of the country in the scientific sense and to close the gap between us and developed countries. Interesting news headlines have been used to give hope to the public on issues such as fatal diseases, youth and beautification.

The phenomenon of monopolization, which is frequently seen in health news in Turkey, is evident only in a part of the news. However, this capitalist structure, which can be seen together with the background information, has led to the perception that the public sector is not benefiting from the developments in the field of health. When it is approached to news in terms of reaching the sources, it is understood that the domestic resources are given based on the more accurate and expert opinion than the foreign sources. Difficulties that newspapers have experienced in reaching foreign sources may have caused this situation.

When health news is approached in terms of a scientific ethics standpoint, it is seen that expert opinions are shaped by direction of political opinions of newspapers. Since the Hürriyet newspaper adopts popular values, under the discourse of illiberalism, the journalist wanted to give to the science news with a close approximation to the public and to explain with more photos, but the long sentences made it difficult to understand. In a study conducted by İşliyen (2014), he said that photographs of news were one of the most noticeable news items after the headline, and emphasized the priority of the photograph than the main text. The Zaman newspaper has extensively used the elements of religion and nationalism in its news and has dealt with institutions that are close to their views.

The Cumhuriyet newspaper, on the other hand, emphasized individual scientific studies and nationalism. In the news, it was seen that the frequency of use and disclosure of scientific terms has also changed. The Cumhuriyet newspaper, which uses the most scientific terms, has not adequately explained the terms. Although the Zaman newspaper uses as few terms as possible, it has important problems in terms of sentence organization. Hürriyet is the newspaper with the most intensive statements.

Generally speaking, the most important problems in terms of science journalism can be considered in the news, inadequate information about sources and institutions, lack of accurate references, and the use of certain, contradictory statements instead of probabilities. These results may not be so surprising for Turkey which is a country that is watching science journalism against the world scale. In particular, the monopolization and the diplomatic and political formations attached to it make it difficult to act in accordance with scientific ethics.

The economic and political structuring in the newspapers is one of the most important problems that prevent the reaching to public in the scientific sense. Therefore, it is very important to establish new platforms to regulate the relationship between science and the public. Scientific activities can be made available to more people through science journalism or by scientists who will be publicized. In order to make science journalism more understandable, the country needs a lot of people and independent media organizations that can present abstract concepts in a visual way. Improving the mistakes in science journalism and increasing the trainings in the area so that scientists can communicate properly with journalists can be a start for achieving a shared sense of trust. To this end, especially education and science institutions, journalists have great responsibilities.

References

- Agamben, G. (1998). *Homo Sacer: Sovereign Power and Bare Life*. California:Stanford University Press.
- Altun, F. (2011).Medya Etiği ve Tarafsızlık Söylemi. İş Ahlakı Dergisi, 4(8),9-24.
- Anderson, B. (2007).Hayali Cemaatler,Çev. İskender Savaşır, İstanbul:Metis Yayınları.
- Avşar, Z. (2004). Medyada Yoğunlaşma ve Şeffaflaşma: Yasal Düzenlemeler, Beklentiler, Sorun Alanları.İletişim Araştırmaları Dergisi, 2(2), 87-112.
- Bauer, A.J.(2008). Company offers system to encourage patients to take their medicine. The Herald News. [Online] Available: <http://www.heraldnews.com/article/20080829/NEWS/308299974/-1/google-archive-sitemap-handler&template=rwd&X-IgnoreUserAgent=1> (June 1, 2015).

- Bengi, H. (2012). Tarihsel Süreç İçinde Anadolu Ajansı'nın Özgün Kurumsal Yapısı (1920-2011). Ankara Üniversitesi Türk İnkılap Tarihi Enstitüsü Atatürk Yolu Dergisi, 299-341.
- Bertrand, C. J. (2004). Medya Etiği. Ankara: Başbakanlık BYEGM Yayınları.
- Burns, T., O'Conner, D. J., & Stocklmayer, S. (2003). Science Communication: A Contemporary Definition. *Public Understanding of Science*, 12(2), 183-202.
- Coşar, S., & Özdemir, G. Y. (2014). İktidarın Şiddeti AKP'li Yıllar, Neoliberalizm ve İslamcı Politikalar. İstanbul: Metis Yayınları.
- Çavdar, T. (1980). Tekelleşme ve Tekelci Devlet Kapitalizmi. Ankara: Erk Yayınları.
- Danone Institute (2015). The Danone International Prize for Nutrition. [Online] Available: <http://www.danoneinstitute.org/nutrition-science-support/danone-international-prize-nutrition> (December 23, 2016).
- Dijk, V. T. (1988). Semantics of a Press Panic: The Tamil Invasion. *European Journal of Communication*, (3), 167-187.
- Dijk, V. T. (2003). Critical Discourse Analysis. In D. Schiffrin, D. Tannen, & H. Hamilton (Eds.), *The Handbook of Discourse Analysis* (pp. 352-372). Oxford: Blackwell Publishing.
- Ecrins Therapeutics (2016). Discovering new drugs is both our profession and our passion. [Online] Available: <http://www.ecrins-therapeutics.com/home> (December 23, 2016).
- Einsiedel, E., & Thorne, B. (1999). Public Responses to Uncertainty. In S. M. Friedman, S. Dunwoody, & C. L. Rogers (Eds.), *Communication Uncertainty: Media Coverage of New and Controversial Science* (pp. 43-58). New Jersey: Lawrence Erlbaum Publishing.
- Erdoğan, İ. (2007). Türkiye'de Gazetecilik ve Bilim İletişimi. Ankara: Pozitif Matbaacılık.
- Fatih Üniversitesi (2010). Fatih Üniversitesi, Ankara'daki akademik birimleri Turgut Özal Üniversitesine devrediyor. *Basın Bültenleri*. http://www.fatih.edu.tr/?basin_bultenleri,89 (6 Aralık 2010).
- Haberler.Com (2015). Türk Dünyası Transplantasyon Derneği Astana'da Toplandı. <http://www.haberler.com/turk-dunyasi-transplantasyon-dernegi-astana-da-7328960-haberi/> (23 Aralık 2016).
- Hartz, J., & Chappell, R. (1997). *Worlds apart: How the distance between science and journalism threatens America's future*. Nashville, TN: First Amendment Center.
- Heemann, U., Abramowicz, D., Spasovski, G., & Vanholder, R. (2011). Endorsement of the Kidney Disease Improving Global Outcomes (KDIGO) guidelines on kidney transplantation: a European Renal Best Practice (ERBP) position statement. *Nephrology Dialysis Transplantation*, 26(7), 2099-2106.
- İnal, A. (1996). *Haberi Okumak*. İstanbul: Temuçin Yayınları.

- İşliyen, F. Ş. (2014).Fotoğraf ve İdeolojik Çerçeveleme: 1 Mayıs Haberlerinin Fotoğraflarına Yönelik Bir Odak Grup Çalışması.Asos Journal (Akademik Sosyal Araştırmalar Dergisi), 2 (5), 592-608.
- Karatay, C. (2016). Canan Karatay Kimdir?.<http://www.canankaratay.com/canan-karatay-diyeti> (23 Aralık 2016).
- Kennedy, D. (2010). Science and the Media. In D. Kennedy, & G. Overholser (Eds.),Science and the Media(pp. 1-9).Cambridge, MA: American Academy of Arts and Sciences.
- Kirtley, J. (2010).Media Law (Handbook Series).USA: Bureau of International Information Programs.
- Millas, H. (2009). Zamandan Bir Ses Milliyetçi Olmayan Yorumlar 2002-2008. İstanbul: Kitap Yayınları.
- Miller, S. (2001). Public understanding of science at the crossroads.Public Understanding of Science,10(1), 115-120.
- Ntv Haber (2010). Gülen'e 10 yıl hapis istemiyle dava .<http://arsiv.ntv.com.tr/news/26589.asp> (1 Haziran 2016).
- Oktay, S. (2012). Duayenleri Türkiye'ye Getirecek. Turkishtime,Şubat, 118.
- Roghmann, F., von Bodman, C., Löppenber, B., Hinkel, A., Palisaar, J.,&Noldus, J.(2012). Is there a need for the Fournier's gangrene severity index? Comparison of scoring systems for outcome prediction in patients with Fournier's gangrene.BJU international, 110(9),1359-1365.
- Streckfuss, R. (1990). Objectivity in Journalism: A Search and a Reassessment. Journalism Quaterly,67(4), 973-983.
- TÜBİTAK (2004). Ulusal Bilim ve Teknoloji Politikaları: 2003-2023Strateji Belgesi.http://www.tubitak.gov.tr/tubitak_content_files/vizyon2023/Vizyon_2023_Strateji_Belgesi.pdf (23 Aralık 2016).
- Umeogu, B.,&Ojiakor, I. (2012).Sycophancy and Objective Journalism.Advances in Applied Sociology,2(3), 159-166.
- Ülkü, G. (2004).Söylem Çözümlemesinde Yöntem Sorunu ve Van Dijk Yöntemi.Haber, Hakikat ve İktidar İlişkisi. Ankara: Elips Yayınları.
- Ünlüer, A. O. (2006). Medyada Etik Söylem ve Medya Etiğini Biçimleyen Temel Belirleyiciler Üzerine Bir Değerlendirme. Küresel İletişim Dergisi, Güz (2), 1-15.
- Ware, C. (2013). Information Visualization: Perception for Design. (3rd ed.). USA: Morgan Kaufmann.
- Weeks, J. (1998). Farklılığın Değeri. Kimlik: Topluluk, Kimlik, Farklılık, Çev. İ. Sağlamer,İstanbul: Sarmal Yayınları.
- Yakubu, S. (2015). Yakubu: School Children, Not Tools Of War. The Guardian. [Online] Available: <http://www.ngrguardiannews.com/2015/02/yakubu-school-children-not-tools-of-war/> (December 23, 2016).