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Verhoeven, Piet

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# Where has the doctor gone? The mediization of medicine on Dutch television, 1961–2000

Piet Verhoeven

Health issues and medical science receive a lot of attention on television. Of all the sciences, the European public is most interested in medicine, and the public uses television as their main source of information on science. There has been hardly any empirical research, however, into the historical development of the representation of medical science on television. The development of medical television was explored by carrying out a content analysis of Dutch non-fiction medical television programs spanning a period of 40 years. The speaking time allotted to experts has decreased over the years, while that allotted to laypeople has increased. We are seeing fewer references to sources and science and more expression of emotion and tension. The results suggest three periods of medical television: a scientific, a journalistic and a lay period. Medical television in 2000 shows a personified picture of patients against an instrumentalized and symbolized medical backdrop.

## 1. Introduction

In Europe and the United States, health issues and medical science receive a lot of attention on television compared to that devoted to other sciences (Göpfert, 1996; Lafollette, 2002; Cheveigné, 2006). Of all the sciences, the European public is also most interested in medicine, and they use television as their main source of information on science (European Commission, 2001). As television plays such an important role in the way the public gathers information, it would seem to be important to know how science is represented there, especially since the public debate is drawing attention to the increasing tension between the dumbing-down of media content and the increasing complexity of science and daily life (cf. Dawkins, 1998; Hargreaves and Ferguson, 2001). The debate suggests that media content has changed over the years. Has media content relating to science changed over time, or is the suggestion based more on myths about media content and the power of the media (Schönbach, 2000) than on empirical reality?

There has been hardly any empirical research into the historical development of television content and science (Dawkins, 1998; Loughlin, 2000; Allan, 2002). A study was therefore conducted to ascertain whether the use of science on Dutch television changed from 1960 to 2000, and if so, how. This study was carried out against the background of the above-mentioned public debate on the dumbing-down of media content, as well as against the background of social theory about the logic of the mass media and their role and position in society.

In some social theoretical perspectives, the development of the media is presented as the core of the cultural transformation into the modern society (Thompson, 1995), and is closely related to the development of science and technology. Thompson calls the development of the media the “mediization of culture,” by which patterns of communication and interaction have changed in “profound and irreversible ways” (1995: 46). By now, mediization also includes the rise of “media logic” (Altheide and Snow, 1979, 1991; van Vree et al., 2003), in which the mass media mainly take an entertainment perspective on social and political life, and when information is presented. The concept of mediization was used as a background in this study in order to examine the historical development of the representation of science on television. Mediization was chosen instead of *mediatization* because mediization refers primary to cultural processes and *mediatization* seems to become more and more defined as a concept used to describe the penetration of mass media and their logic into other social systems, e.g. organizations in society (Kepplinger, 2002; Schulz, 2004; Schrott, 2005). This *mediatization* is not the focus of this study.

### *Medical science and medical journalism*

In this media analysis, medicine is taken as exemplary of the development of the representation of science on television over time. This is for several reasons. First, because of its presence in the media, the importance the public attaches to it and the image medical science has as being exemplary of science in general. Inhabitants of the European Union also think that medical science is the most scientific compared to other sciences (European Commission, 2001). This confirms earlier research conducted in the United Kingdom (Durant et al., 1992) and Canada (Einsiedel, 1992) that showed that medicine dominates the general image the public has of science. This suggests that at least for a part of the public, medicine is paradigmatic for science in general. The image of science in general is determined by the familiarity with and the image of medical science. As Einsiedel (1992) has said, a typical story about science is a story about medical science, is based on scientific expertise and is a positive occurrence, often a medical innovation or a treatment.

Second, when measuring the attention devoted to science and technology, medical journalism can be positioned between general news journalism and science journalism. On the general television news, not much attention is paid to science or technology (León, 2004). In special science programs on television as a part of science journalism the situation is the opposite: science and technology are very visible because the broadcasts usually are entirely devoted to science. It can be expected that medical journalism will be positioned somewhere in between.

The above considerations seem to make medical journalism suitable for observing changes over time.

## **2. Theoretical background**

The background to the study was the theoretical debate on and arguments concerning the scientification and mediization of culture and society. If we look at the development of science we find it has determined not only the technological processes, economic systems and social structures of society but also our everyday experience of the world and conscious thoughts and even unconscious feelings. It is presented as the driving force behind modernization (Nowotny et al., 2001), determining every aspect of society. Processes of “scientification” and “socialization” have led to a science and society that are fundamentally interwoven (cf. Hagendijk, 1996, 2004) and the co-production of a scientificized culture.

If we look at the development of the mass media, we find a great deal of attention has been devoted to the role and logic of the media and to the “mediatization of culture” (Thompson, 1995: 46). This has resulted in the transformation of the public sphere, which now takes the form more of a mediated publicness than a non-mediated agora for dialogue and debate. Social and political life has become nothing more than a struggle for visibility in the mass media. Mediatization has entered upon a new phase in recent decades, referred to as “extended mediatization” (Thompson, 1995: 110–11): the media have developed a “relatively high degree of self-referentiality” (Thompson, 1995: 110). Media messages refer more often to other media messages and to events reported in the media.

“Media logic” is said to have replaced the classical journalistic way of working (Altheide and Snow, 1979, 1991; van Vree et al., 2003). It consists of formats for the symbolic reproduction of events; when it is applied, the form of the communication takes precedence over its content. These formats determine how the material is organized and in what style it is presented. They reflect underlying, often implicit rules that apply to the whole media industry, although there are different formats for different subjects, for example for news, entertainment, sports and talk shows. They provide the grammar for media content, they arrange actions and events, provide temporality and produce symbols that express emotion or are meant to evoke emotions. They are dominated by the “entertainment perspective” (Altheide and Snow, 1979), aiming at entertaining the public instead of informing them. Information presented in an entertainment format is sometimes referred to as “infotainment” (Brants, 1998; Wieten, 2002).

#### *News values and news factors*

Empirical research into the content of news has shown that this development towards media logic and the self-referentiality of the media started as early as the 1950s. Much research has shown that media content is consistent and that this content mainly can be explained by the working of the so-called news values and news factors. Following the classical study by Galtung and Ruge (1965), many researchers have worked on extending the news value theory. For example, Schulz (1976, 1982) has shown that the content of the news and its production are not what one would expect on the basis of the professional norms and ideals of journalists. Important news factors are:

- Threshold: the news is about topics that exceed a certain threshold of intensity to be noticed by journalists.
- Unambiguity: the news often presents matters as unambiguous.
- Consonance: the news is consonant with what journalists and the public have in their minds.
- Status: the news is about elite people, nations and institutes.
- Dynamics: the news presents the world as constantly changing.
- Valence: the news is about success or conflicts.
- Identification: the news often presents people who evoke compassion.
- Personification: the news is about people with whom the public can identify, people in action and people’s emotions.

#### *Television in the Netherlands*

The historical development of television journalism has also been described as a process towards the increasing use of media logic. In the 1950s and 1960s, television used models taken from the movies, followed by one derived from the press until about 1985. From then on it started using more and more formats with the characteristics of media logic. Not only

the rise of commercial television but also technological developments are held responsible for this (Wijffjes, 2002).

The Netherlands was one of the last countries in Europe to introduce commercial television (Bakker and Scholten, 2005). Until 1989, Dutch television was public television only. All broadcasters were non-profit organizations. In 1989, commercial television was introduced parallel to the public broadcasting system. Today, the Netherlands has three public broadcasting channels and eight national commercial channels (Bakker and Scholten, 2005)

### *The mediatization hypothesis*

The question is how the representation of science on television has developed. Has the use of science—medical science in this case—on television changed during the past decades, and if so, how? Or, to put it differently, have the narratives and knowledge of journalists taken over from those of scientists and experts in medical television programs, because of increasing media logic? The study started out from the mediatization hypothesis, which states that the narratives and knowledge of journalists have become more present in the media over the years than those of scientists and experts.

## **3. Methodology**

### *Medical journalism*

In order to answer the research question, a content analysis of a sample of medical documentaries from the public broadcasting organizations in the Netherlands was carried out. It was decided to analyze only non-fiction medical television shows, because this genre of medical television was broadcast throughout almost the entire research period. Although fictional medical television programs are also relevant, such programs were not broadcast in the Netherlands until the late 1980s. Furthermore, quite a lot of research on medical drama series has already been done (e.g. van Dijck, 2002; Kirby, 2003), in contrast to the amount on medical programs with a predominantly informational character and aim.

### *Sample frame and sample*

It emerged from the archives of the Netherlands Institute for Sound and Vision that from the start of Dutch television in 1951 until 2000 over 40 different medical series were produced and broadcast, starting in 1961. This is such a broad and varied universe that a random sample was not suitable for the study. In order to make the historical analysis as internally valid as possible, a sampling frame was devised. This sampling frame was made up of a group of seven consecutive medical television series between 1961 and 2000.<sup>1</sup> From this sampling frame a proportionate stratified sample (Neuendorf, 2002) was drawn of two episodes per year. The resulting sample contained 76 different episodes from 38 different years, with a total length of 34 hours, 30 minutes and 34 seconds.

### *Operationalization, procedure and analysis*

Media content was analyzed at the level of (a) entire episodes and (b) statements, using a constructed media reference model. This model has two dimensions.

The first dimension—referentiality—consists of variables that measure references to sources, references to the rules of science, the educational character of the statements and the speaking times (following Adatto, 1990) allotted to the persons appearing in the programs. The operationalization of the reference to rules of science is based on the Mertonian imperatives

(Merton, 1942), usually abbreviated to CUDOS,<sup>2</sup> giving rise to such variables as reference to communality of knowledge, reference to former knowledge, reference to universality and causality, and reference to scientific research in statements.

The second dimension—news factors and media factors—consists of variables that measure the visibility of these factors, as previously defined by Galtung and Ruge (1965) and Schulz (1976, 1982). News factors can be considered the most important forms of expression in the mediazation process. The concept of news factors gives rise to such variables as threshold and continuity, thematization, elite persons and elite institutions, dynamics, valence (with success on the positive side and tension on the negative side), identification, emotion, personification, contextualization, mentioning of wider implications and presentation of events as surprising. Also such variables as the visibility of medical clothing and accoutrements, the discipline (humanities, hard sciences or social sciences) of the speakers in the episodes, the storyline, the use of metaphor, speaking directly or indirectly, images presented on the screen, mentioning of risks and moderation of the programs were part of the dimension of news and media factors.

In total, 31 variables were encoded. Eight variables were coded at whole-episode level, including the speaking times allotted to various persons. This was only possible for the 1976 to 2000 period, owing to the availability of episodes; before 1976 the broadcasting organizations did not record whole episodes, but only archived filmed reports.

After coding the variables of the whole episode, each episode was divided into a sequence of statements. A “statement” is the number of seconds during which a person talks before he or she is interrupted. In total, 7,242 different statements were identified in programs in the period 1961–2000. A total of 24 variables were coded at the statement level.

All the variables and their possible values were defined and described in a code book. Four coders encoded the data. A reliability subsample of 10 percent of the statements was drawn to calculate Scott’s pi ( $\pi$ ) (Lombard et al., 2002), which was calculated for the variables encoded at statement level. The inter-coder reliability ranged from 0 to .98.

Given the research question, the speaking times allotted to persons were aggregated annually. Time series were produced from these aggregated data to enable patterns over the years to be observed.<sup>3</sup> To support the interpretation of the patterns a bivariate regression analysis was carried out. In order to enable variables to be compared the standardized regression coefficient ( $\beta$ ) was reported. In addition to the bivariate regression analysis a one-way ANOVA was conducted to explore significant differences in content in different time periods.

#### 4. Results

Seven consecutive medical series were analyzed, those connected to three television doctors (Dr. van Swol, Dr. Haneveld, Dr. Gisolf) in the 1960s and 1970s, and *Vinger aan de pols* (“Finger on the Pulse”) in the period 1981–2000. *Vinger* was the dominant medical program in the Netherlands at the time. It was anchored by medical journalist Ria Bremer, first in cooperation with television doctor Dr. Lens and later (after 1987) alone.

##### *Speaking time*

An important indicator of the way medical science is represented on television is the speaking time allotted to the various participants in the programs. Non-fiction medical television programs show more than seventeen different groups of participants, falling into three categories: experts, journalists and laypersons.

In order to distinguish between different kinds of experts and the different roles experts can play, the participants in the category experts were encoded into three different subcategories: pure scientists, other experts (medical and otherwise) and medical doctors. The total speaking time of all these experts together decreased over time. Medical doctors, in different roles, have by far the largest share of the speaking time of experts, followed by pure scientists.

The second category—journalists—also plays various roles in the programs, for example as moderators or as on-location reporters or commentators. In the third category are laypersons, such as patients and their families and representatives of patient groups and of the general public.

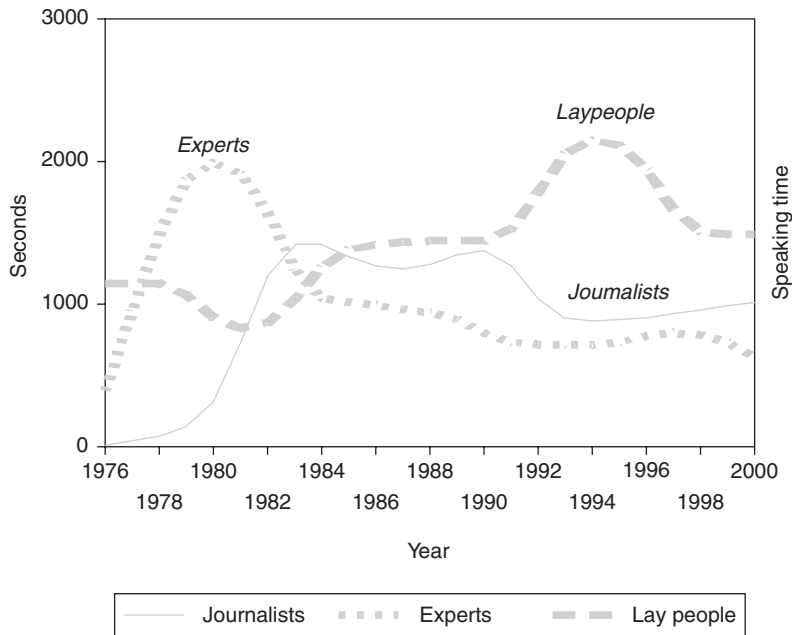
Figure 1 shows the speaking times observed in the three categories (i.e. experts, journalists and laypeople) between 1976 and 2000. From 1976 to 2000 relative speaking times among the three categories changed greatly. The speaking time allotted to experts decreased significantly over this period ( $\beta = -.373, p < .10$ ) and that allotted to laypersons increased ( $\beta = .357, p < .10$ ). The speaking time allotted to journalists did not change significantly from 1976 to 2000 ( $\beta = .267$ , not significant). The pattern of the changes enables three periods to be identified. The first was from 1976 to 1980, when experts had the most speaking time (54.7 percent). Television doctors (in the roles of anchorman and doctor) moderated the programs and invited medical specialists and patients and other laypeople (38.9 percent of speaking time) to speak. Journalists (6.4 percent of speaking time) performed a supporting role as on-location reporters and occasionally as commentators. Between 1981 and 1987 the pattern changed, with a markedly increased role for journalists. In spite of visible cooperation with television doctors, journalists acquired a larger share of speaking time (36.6 percent). Experts had a smaller share of speaking time (31.3 percent) and from 1981 onwards the broadcasts no longer featured experts in the role of scientists. Visible cooperation between television doctors and journalists ceased by 1987, when doctors stopped playing an anchor role: from then on this was performed only by journalists. This period marks the beginning of a new era of speaking time distribution, which stabilized further in the third period, from 1988 to 2000: speaking time allotted to experts decreased even more (21.9 percent) in favor of laypeople (46.1 percent).

### *Content of the episodes*

At episode level, we identified some significant changes in the content of medical television, as shown in Figure 2. The presentation of topics in an impersonal context decreased ( $\beta = -.595, p < .001$ ): after 1988, 80 percent of the topics in medical programs were discussed in a personal context. Stories were more often personified in the form of specific laypersons, patients and their families, and less often in generalized stereotypes with which the public could identify. This is underlined by the decrease in the number of children in the programs as an identifier for the public ( $\beta = -.438, p < .05$ ). Also, topics were less often discussed in a general way, leaving aside the major or minor implications for certain people: not mentioning implications decreased significantly ( $\beta = -.697, p < .001$ ). This coincided with a decreasing proportion of non-thematized episodes ( $\beta = -.737, p < .001$ ). Gradually more attention was devoted to familiar subjects and persons, with increasing thematization ( $\beta = .367, p < .10$ ).

The threshold for gaining attention with medical television programs has increased for basic health problems (everyday topics): interest in these problems has decreased significantly ( $\beta = -.595, p < .001$ ) over time.

Many of the subjects dealt with in the programs that were produced in the 1960s/1970s are basic health problems: most attention is paid to such matters as pregnancy and childbirth, followed by dental care, accidents involving children, illness and holidays, allergies, venereal diseases, puberty and so on. Besides these basic health problems, attention is also paid to cancer and to heart and vascular diseases.



**Figure 1.** Speaking time of experts, journalists and laypeople in Dutch medical television programs, 1976–2000.

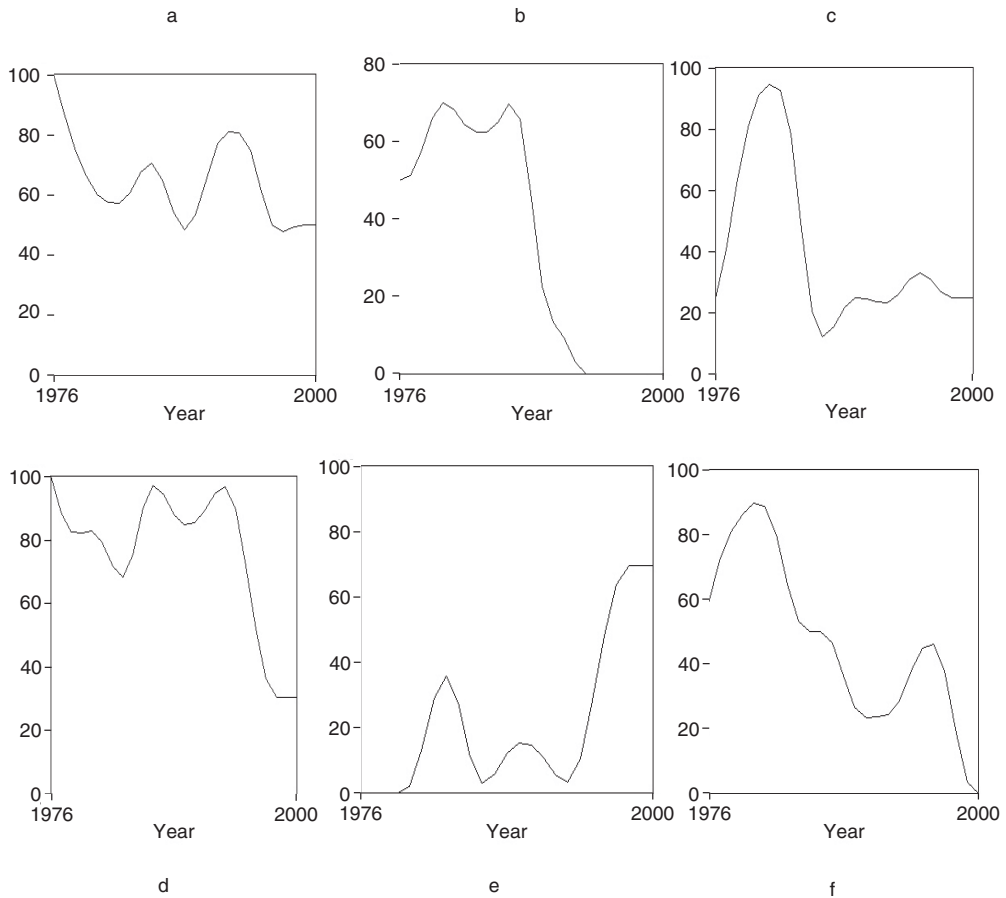
The 1980s gave rise to a dichotomy between attention to basic health problems and increasing attention to such matters as cancer, heart and vascular diseases and organ transplants—areas in which first-class clinical care and technological solutions play an important role. The majority of the post-1988 programs are about diseases that need first-class clinical care or new and specialized treatments, such as cancer, heart diseases, AIDS, Huntington’s disease and Alzheimer’s disease.

#### *Content of the statements*

Table 1 summarizes some primary outcomes of the content analysis of statements made by participants in medical television programs from 1961 to 2000. The content has changed over time, as can be seen from the differences in the three periods of speaking time identified.<sup>4</sup> Until 1988, the statements analyzed included explicit verbal references to sources and science, operationalized as mentioning sources and speaking about the results or the backgrounds of scientific research, mentioning the validity and the foundation of the claims made in the statement, and referring to previous confirmed knowledge about the subject spoken about in the statement. After 1988 this was far less the case: reference to sources decreased significantly ( $\beta = -.055, p < .001$ ) over the whole period, as did verbal references to science ( $\beta = -.097, p < .001$ , shown in Figure 3).<sup>5</sup>

There was also a decrease in the number of statements explaining medical problems or illnesses ( $\beta = -.039, p < .001$ ). The number of educational statements was highest from 1970 to 1990; the content of educational statements also changed after 1988, away from the prevention and explanation of illnesses towards mainly explaining medical treatments. In addition, the manner in which explanations were given changed, from medical lectures on television in





**Figure 2.** Content changes in Dutch medical television programs at the level of the episode, 1976–2000, in percentages: a: impersonal context; b: identification factor children; c: not mentioning implications; d: non-thematized episodes; e: thematized episodes; f: everyday topics.

**Table 1.** Primary outcomes of the content analysis of statements in medical television programs, 1961–2000

	Total % of statements <i>n</i> = 7242	% of statements 1961–80 (first period) <i>n</i> = 1984	% of statements 1981–87 (second period) <i>n</i> = 2028	% of statements 1988–2000 (third period) <i>n</i> = 3230
Reference to sources	2.3	1.7*	5.7*	0.5*
Explanatory statements	17.2	16.8*	22.8*	14*
Indirect speaking by experts	38	30*	18*	69*
Unambiguous statements	95.4	94.6	94.7	96.3*
Medical clothing visible	18.2	15.7*	6.6*	26.7*
Medical accoutrements visible	18.2	13.5*	9.8*	26.3*
Expression of tension	14.7	10.5*	16.1	16.3
Expression of emotion	8.6	7.3	7.6	10*
Presentation of dynamics	12.2	7.1*	12.5*	15.2*
Elite persons speaking	25	50.7*	20.2*	12.3*
Experts with medical/beta background	24.8	49.4*	19.2*	13.3*

\**p* < .05 (post hoc Scheffé test).

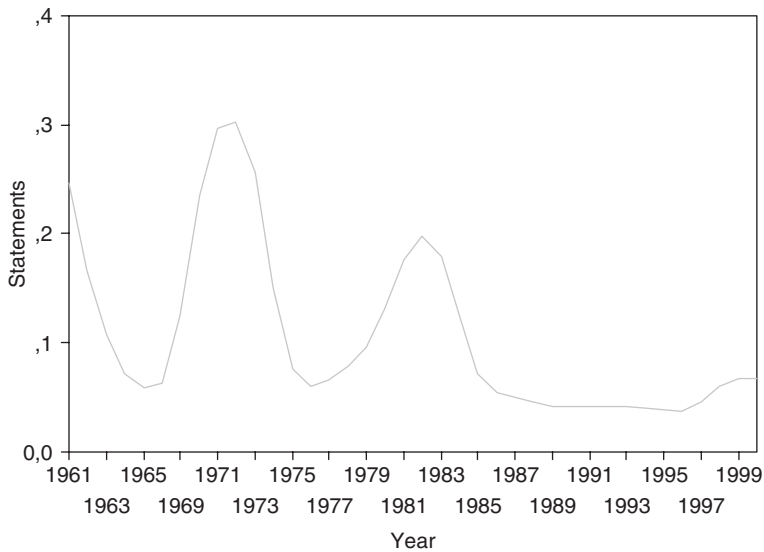


Figure 3. Decreasing verbal references to science rules.

the 1960s and 1970s to seminars with public participation in the 1980s; after 1988 the focus was on stories about personal experiences of patients and their families, with explanations generally kept implicit. This coincided with an increasing number of statements in medical programs where experts spoke indirectly, that is, not addressing the public or the journalist directly but being shown talking to patients and families in the consultation room or during surgery in the operating theatre.

Also the number of unambiguous statements increased significantly after 1988. Although there has never been much ambiguity in medical television programs, it has further diminished since 1988.

Furthermore, medical experts were presented as merely tools for the treatment of patients or symbols of the medical or scientific field. After 1988 experts were more often shown wearing medical clothing ( $\beta = .102, p < .001$ ) and with other medical accoutrements on screen ( $\beta = .108, p < .001$ ). The tension and emotion in the programs mounted over time. The proportion of statements articulating conflicts and disagreements increased significantly ( $\beta = .031, p < .01$ ), especially after 1981, as did the proportion of statements expressing emotions ( $\beta = .031, p < .01$ ). Lastly, there was an increasing sense of instability and drama in the programs: patients' conditions were increasingly presented as rapidly changing, as can be seen from the growing proportion of statements articulating some kind of unpredictable change ( $\beta = .112, p < .001$ ).

## 5. Conclusions and discussion

The study shows that the way medical science is represented and used in the Dutch media changed from 1961 to 2000. There has been an unmistakable tendency towards mediatization. The change seems to be more complex than the mediatization hypothesis suggests, however: it is not a matter of science simply being replaced by journalism. The historical trend shows that the roles of the various participants in the programs have changed, starting with a change

in the distribution of the available speaking time, which shows what, on the basis of the mediatization hypothesis, is an unexpected development in the role and position of laypeople. The speaking time of laypeople has increased significantly and the speaking time of experts has decreased significantly.

Three different periods were identified on the basis of the observations. The first, from 1976 to 1980, could be called the “scientific period,” as the speaking time ratio favors experts. The content analysis of statements indicates that this scientific era started earlier, in 1961. In the second period, from 1981 to 1987, journalists took over the anchor role in medical programs, hence it could be labeled the “journalistic period.” This marks the beginning of a new distribution in which the speaking time allotted to experts decreased in favor of laypeople. This new distribution intensified and stabilized in the third period, from 1988 to 2000, which could be termed the “lay period.”

In the 1980s, journalists started to take the lead in and to give direction to medical television programs. Why this change took place cannot be derived from the content of the programs. On the basis of the content of the programs, it seems that the “factuality regime” in the programs has changed from a medical science one via a journalistic one to a lay one. A factuality regime is defined by Hagendijk (1996: 186) as a “collection of assumptions, goals, impressions and rules which play a role in the production and evaluation of factual claims.”

These journalistic and lay factuality regimes increasingly mask science rules in favor of an instrumentalized and symbolized image of experts, generally painting a picture of medical science as a mere tool. To put it another way, science has become technology, more or less simplistically presented as a scenic backdrop to the lives of laypeople. This observation matches the way news factors function: several of these converged, especially after 1988, in the direction of personifying laypeople. The speaking layperson is more often a recognizable person with a personal tale that is followed over a lengthy period of time. This trend is in line with the “layification” of speaking time in the programs.

This layification of the speaking time might be explained by the transformation in the patient–doctor relationship that occurred between 1961 and 2000, and the rise of patient activist groups and activism around specific diseases like AIDS (Epstein, 1996) or controversies about treatments (Kent, 2003) or medicine (Andsager and Smiley, 1998). Those contextual developments cannot be derived from this content analysis, although an increase in speaking time for patient groups or representatives of activists was not found in this study.

A number of other news factors, however, have developed in a way that diverges from the personification of laypeople: for instance, less attention is devoted to everyday medical problems, and after 1988 the television stories of laypeople were increasingly characterized by change, emotions and conflicts. This indicates that a journalistic regime was also present in the lay period, which constructs a narrative of personified laypeople, told in terms of news factors: dynamics, valence, unambiguity and emotion.

This feature of media content in the lay period illustrates what we might call the paradox of the layification of medical television: the lives of laypeople are not actually at issue, nor is their everyday knowledge and context, which—in the journalistic factuality regime—are of importance only as long as they are compatible with the news factors. This also results in experts playing a supporting role in the journalistic tale as tools and symbols of the medical science world.

The study shows the historical development of the content of medical television programs in the direction of infotainment (Brants, 1998) and entertainment. References to science have not completely disappeared, but they are more implicit and symbolical. This trend could be the result of the introduction of commercial television in the Netherlands, which began in 1989. The Dutch public broadcasting organizations may have anticipated this by

changing the content of the programs more in the direction of infotainment and entertainment. This anticipation of the rise of commercial television corresponds theoretically with the historical development of television journalism, described as a process towards increasing use of media logic (Wijffes, 2002; Altheide and Snow, 1979).

Medical journalism on television in 2000 paints a personified and instrumentalized picture of the scientificized society, without problematizing or explaining science explicitly. The scientification aspects and construction processes of medical science are increasingly expressed only implicitly or ignored.

The observed development of medical television towards infotainment and entertainment shows a picture of a taken for granted, almost consumerist use of medical experts, medical scientists and medical scientific knowledge. Such a one-dimensional media image of science and health care as an instrument does not do justice to the complex interrelation of science and society. Finally, in terms of social effects the question can be raised about the effect that this way of presenting medicine and health care on television has had and still has on the public. This is a question for further research.

## Notes

- 1 The seven non-fiction medical series were: *Ziek zijn, Beter worden* (1961–5), *Medische Kroniek* (1968–9), *Spreekuur* (1969–70), *Op uw gezondheid* (1971–4), *Dokter ja, Dokter nee* (1975), *Artsenij* (1976–81), and *Vinger aan de Pols* (1981–2000).
- 2 CUDOS is short for communality, universality, disinterestedness and organized skepticism.
- 3 The time series in Figures 1, 2 and 3 were done using a T4253H smoothing filter in order to enable trends to be recognized and for reasons of presentation. The smoothing technique levels off fluctuations but leaves the original time series trend unchanged.
- 4 The first period is now 1961–80.
- 5 Verbal reference to science is an index of four variables referring to science rules: communality, universality, reference to scientific research and reference to former knowledge, ranging from 0 (no reference) to 4 (high reference).

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## Author

Piet Verhoeven is associate professor in the Department of Communication Science at the Amsterdam School of Communications Research (ASCoR), Universiteit van Amsterdam. His research interests lie in science in the mass media, and organizations and mass media.

**Correspondence:** Amsterdam School of Communications Research (ASCoR), Universiteit van Amsterdam, Kloveniersburgwal 148, 1012 CX Amsterdam, The Netherlands; e-mail: P.Verhoeven@uva.nl