
Health and Digital Technology: Reflexive Feedback on Some Works

1.1. Introduction

Working for 15 years on the theme of health from an info-communication perspective, I have been led to study its development on the Internet. We have the opportunity here to look back on this work, on our practices and, beyond that, on our position as researchers in the information and communication sciences (ICS). It is therefore a question of reflecting on the processes used to study the development of e-health and on the concepts mobilized to analyze the results. We will start here by observing the massive presence of e-health; a presence marked by exponential development, a plurality of actors, materials and information. What can an ICS researcher bring to the study of the current state of e-health?

This object, online health, opens the study both on a complex professional field, that of health, a sector marked by its “public” characteristic, and on a sector, that of digital technology, which is still under development, with strong economic stakes and promoted by a number of prophetic speeches. The aim here is to question and sometimes deconstruct a number of ideas or processes about digital technology when applied to health.

First, the framework will be broadened: indeed, the characteristics and issues related to health are such that the situation of online health today cannot be explained solely through digitization. The first element to be

deconstructed, therefore, is the idea of a revolution brought about by digital technology. Our first part will show that, in reality, the situation is much more the heir of a long history of political interventionism with important consequences on information. Then, the multiple and high stakes of this situation will lead us to raise the necessity for the researcher to master the digital economy, the functioning of the information and communication industries or the technical processes of the platforms. Finally, if health is developing online it is because it has its users/consumers and therefore there is a use to be analyzed. First of all, the study of these new uses shows a confidence and legitimacy maintained by doctors and then the emergence of new forms of expression. These two elements lead the researcher to deconstruct a certain number of fears about the development of e-health, particularly towards doctors, and to question the real motivations and objectives of Internet users.

1.2. Voluntary changes over the last 50 years

Having worked for several years studying the field of health from an ICS perspective, the observation of a plethora of online information and a dominant discourse on the digital world changing the doctor/patient relationship was relatively quick to emerge. It is, above all, the desire to verify and qualify this phenomenon that has led us to analyze online health. However, once this is established, conducting research on health and the Internet has its pitfalls. Indeed, much work has been carried out by researchers who are primarily interested in the digital world but who are insufficiently familiar with the field of health. This is a nuisance because this situation leads to an attempt to explain phenomena specific to the field of health using digital logic. While the latter obviously have an impact on health, this sector is so specific and complex that the reverse is also true. To ignore it is to be partial in its approach. It is therefore necessary to have an in-depth knowledge of this field, its actors and its characteristics to avoid preconceived ideas or overly rapid assertions. Thus, it is this knowledge of the health professional field that can make it possible to affirm that, in part, the situation of e-health can be explained by a split between medical information and health information, itself the result of nearly 30 years of voluntarist public policies seeking to control medical information only, i.e. that of health professionals. The anarchic situation of e-health is largely due to State action and not to any digital "revolution" (from the Internet to open data).

1.2.1. *An old but partial political desire*

The first difficulty was therefore that of not falling into the dominant discourse of the digital revolution and not falling into the disruptive analysis of digital development in this sector. A researcher is always marked by his/her training. Ours was first constructed in history, which gave us an appetite for continuums rather than revolutions. In fact, when applied to health and the digital world, this makes it possible to replace the technical and political logics: the digitization of health thus follows its computerization under the effect of rationalization policies aimed essentially at controlling costs. Looking back over the history of these developments makes it possible to start again from the specificities of health in France, namely its public nature (in the regalian sense of the term) and the scientific qualification of its information. In doing so, the digitization of health is part of a continuum of proactive public policies.

At the same time, the consumer Internet is developing at a time when the professional health sector is being restructured by various public policies [CAR 02, CON 03]. Faced with the failure of financial control led by doctors themselves, computerization and rationalization of the health sector became reform tools in the 1990s. The chronology of the successive transformations of the health system¹ suggests a long-term movement towards the computerization of both medical and managerial data. The movement to reform the public health system corresponds chronologically to the development of digital information and communication technologies, particularly the Internet. The *Programme d'Action Gouvernemental* (French Government Action Program) for the Information Society (PAGSI), adopted in 1998, clearly indicated that the modernization of information systems in the health and social sector is a priority with a view to “preparing France’s entry into the information society” [CAR 00, p. 20]. However, it should be recalled that computerization comprises two essential phases: first, the digitization of information, i.e. the advent of the computer, and second,

¹ By way of non-exhaustive examples: supervision of the computerization of the medical sector since 1991 by the Programs for the Medicalization of computerization systems; the law of January 4, 1993, known as the Teulade Law, on the coding of acts and diagnosed pathologies; 2004 implementation of the “*carte vitale*”, which governs access to and use of the Social Health Network; subsequently, the Electronic Medical Record or the Personal Medical File complete the computerization of medical data with a curative but, above all, managerial objective.

the extension of digitization to the transport of information, i.e. communication. Additionally, while, in the field of health, the French State has taken charge of and controlled the digitization of information, it has not made the same effort in transporting the information and has to some extent left such exercise to private operators for professional information and to content industries for consumer information. “It is precisely the digitization of information transport that makes it possible to realize the potential for socio-economic transformation that computerization contains in its seed” [RAL 06, p. 146].

The implementation of this system for the circulation of information from medical acts is indicative of a new form of industrialization of the health sector: the digitization of medical data, medical acts and their reports, facilitates the establishment of databases and benchmarking on performance criteria. However, these regulations only affect specialized professional information, not information for the general public. Under the action of public health policies (essentially for accounting purposes), digitization and industrialization of this professional field is therefore taking place.

Having only targeted professionals, a first division is thus established between medical and professional information and health information for the general public. The legislator focused on professional information because its sole objective was to control healthcare spending and thus neglected information for the general public. Private actors, having glimpsed the economic potential of the e-health sector, have taken advantage of this “oversight” to develop tools. It should be noted that the latter, not being interested in medical information or patient health data, are not required to comply with the French legislative framework for medical information. Moreover, as they are not doctors, they are not subject to the supervision of the French Council of Order. As a result, the trend towards opening up to private actors, initiated by the health system reform, is increasing with the development of e-health. What was previously a public and scientific prerogative becomes unregulated and uncontrolled information. However, the evolution has not been limited to changes in the organization of work: it is the development of the use of information and communication techniques for and by professionals, and for and by patients, which is taking hold on a permanent basis. It is thus the only profession that has been forced by the legislator to computerize.

Ultimately, an unprecedented “explosion” of medical and health databases and information is occurring. All this data and information is now accessible to everyone, all the time, as long as you have an Internet connection. Indeed, during this rationalization effort, the network of networks has developed and, thanks to several high-profile political-legal cases and widely publicized militant actions, health issues have gained public space: contaminated blood, asbestos, the “mad cow” crisis, the Distilbene affair, H1N1, etc. [ROM 10]. The emergence of health issues, public action for rationalization and media coverage have thus multiplied the discourse and therefore the information relating to health. The production and dissemination bodies have increased to the point where the supply of information is overwhelming². And the latter has very different statuses: provision of information, scientific reports, commercial strategies for such and such medicines, advice, practical information, online consultations, archives, free services, paid services, etc. True content industries have specialized in the health field.

1.2.2. Coexistence of two types of information: medical and health information

It is as a result of this development of public policies and the development of the Internet for the general public that the transition from medical, scientific and official information to health information for the general public is taking place [ROM 15]. Healthcare in France has always been conceived as a matter of public domain. Therefore, medical information is public information, in the strong sense of the term. The specificity of the data gives it its second characteristic: it is scientific, i.e. it meets standards of production and validation by a community before dissemination. As public information, it is fully in line with the way in which public policies operate; as scientific information, it must meet the precise evaluation and dissemination criteria of the scientific community before being addressed to the general public. However, it is this health information that will undergo a complex publicization movement: not only are elements that are eminently privately relevant publicized, but, above all, patients, their relatives or associations produce information via

² In December 2018, 32.6 million Internet users visited at least one health/well-being site (Médiamétrie, 01/30/2019). All this for 53 million Internet users counted each month according to the 2018 Internet year balance sheet (Médiamétrie, 02/14/2019).

information–communication techniques without going through the medical or scientific sphere. Since the mid-1990s, in France, the production of health information has no longer been the prerogative of the medical sector or the public sector (State). And this digital information is now accessible in a volume and at a speed never experienced before, according to an informationalization perspective [MIE 99].

More specifically, two types of information coexist: medical information, traditionally produced by specialists and meeting the criteria and functioning of public scientific information, and a new category of information, intended for the general public, which is disseminated on the Internet. This information, which we have described as health information [ROM 08, ROM 12], is produced by both the medical sector and the State. This cohabitation creates a tension between health professionals attached to specialized professional medical information, which is highly supervised and regulated by the State, and industrialists or content companies wishing to develop health information for the general public, which is not subject to any control. Paradoxically, while several studies are constantly questioning the reliability or validity of this information [NAB 02, BOU 03], Internet users seem to have integrated it, know how to direct their research and are developing a very different use of these two types of information [PAG 10].

Public medical information is therefore marked by a movement towards privatization. This expression includes the intervention of actors from the economic sphere (Astra Zeneca, Airmedis, Medcost), as well as a movement of privatization by individuals themselves, with the use of medical information in the private sphere and for strictly individualized purposes. This privatization movement is finally accompanied by forms of commodification of public information. This is becoming a commercial issue in more ways than one.

The need to study the current situation not as evidence of a rupture or revolution but rather with some historical depth becomes obvious. It is the history of public policies in France that, by focusing on professional information and leaving the field open to publishers of consumer content, partly explains the situation of online health, and not the intrinsic revolutionary power of the Internet.

1.3. Significant issues

The second difficulty facing the ICS researcher is the complexity of the issues revealed by the massive presence of health on the Internet: economic issues of course for entrepreneurs seeking profitability; professional issues also for doctors who have informed patients coming to them, and who, caught between the injunctions of the Council of the Order and the attraction of online collaborations, find it very difficult to situate themselves. Professional issues, also, for science journalists deprived of the monopoly of the status of information producer.

All these issues create tensions and rivalries. In fact, today, we are faced with a situation of a plethoric and anarchic presence of health sites, a market that has become very competitive and, finally, the first attempts at control on the part of those who feel overwhelmed.

1.3.1. *Economic and professional issues*

The stakes of the technological, economic, political and societal changes at work are of different orders, all interdependent. First of all, there is increased commodification, while the broadening of the information offer leads to differentiated consumption, thus accentuating individualization which in turn reinforces diversification [MIE 00, BOU 08]. The economic stakes are therefore high. Then, a process of self-mediation [MIE 00] develops, since information–communication techniques and networks favor inter-individual relations, without intermediaries. Finally, companies specializing in content production have entered the health sector. This is the case of *L'internaute.com/sante* (www.l'internaute.com/sante), which went online in 2006 and is owned by the Benchmark group, which specializes in publishing content for the Internet (owner, among others, of *Copain d'avant* or *Le Journal du net*). *Doctissimo* (www.doctissimo.fr), on the other hand, has had a different trajectory: first founded in 2000 and developed by a specialist in publishing medical content (*Medcoste*), which has become the flagship health website in France, it was acquired in 2008 by the Lagardère Active group, and, in 2018, by the TF1 group. In 2008, *Doctissimo* was the most visited health website in France. After this date, it has become difficult to accurately measure the site's audience because it is provided at the level of the groups in various rankings, Lagardère then TF1, and not systematically broken down by site only.

Major media groups have therefore invested in health information: the advertising manna associated with the Internet and the presence of giant databases of Internet users, potential buyers, are, no doubt, related to this. And the movement is international: for example, Axel Springer, a German press group, owns Sante-az.aufeminin (www.sante-az.aufeminin.com), which has been operating since 2005. As we can see, the economic stakes and merger/acquisition movements offer an additional difficulty to the good understanding of e-health: the need to master the digital economy, and beyond that the political economy of communication, as well as the functioning of the culture, information and communication industries.

From the point of view of the professional stakes, two seem immediately obvious: one for the doctors present on these sites, and the other for the journalists as regards the production of information. The presence of physicians on consumer websites, beyond the effect of scientific legitimization, also responds to strategies by operators and physicians to circumvent legal provisions. These doctors are thus constantly referred to as “collaborators” or “experts” and their activity is qualified as “advice”, “opinion” but never as consultation (prohibited by law). The communication possibilities offered by the creation of new digital media do not abolish the legal and ethical obligations and responsibilities of physicians who use them. For example, section 75 of the Code of Medical Ethics states that any medical advice, service or information must be provided only by professionals qualified in the medical specialty in question.

In 1999, the *Conseil national de l'Ordre des médecins* (French National Council of the Order of Physicians) set up a commission on information technology and new technologies, which has published numerous works on this subject. In addition to these documents, in February 2001, the basic clauses “that should be included in any contract between a physician and a company involved in the medical Internet field” were published. The Order of Physicians reminds us that medicine is a personal activity that is practiced from person to person. If online consultation is prohibited, it is because it denies two fundamental principles of the profession: consultation, a unique colloquium between the doctor and the patient, and the fact that medicine is practiced by a person who takes personal responsibility for it. It should be noted that on October 26, 2010, a decree published in the *Journal Officiel* authorizes consultation by Internet for doctors who are licensed in France. This principle has been partly called into question since 2017 with the implementation of remote consultation terminals to compensate for medical deserts.

Physicians are thus offered addressable Internet spaces in the form of websites, such as information sites, email sites, online study sites, or even sites capable of managing several or all of these different functionalities. One example in this category is the Santepratique site (www.santepratique.fr), online from 2008 to 2018 and managed by IDS Santé SA, a company that produces health content for doctors' offices and pharmacies³. However, doctors and insurance companies are also present. Thus, Docteurclic (www.docteurclic.com), created in 2001, is owned by Medsite, a limited company run by doctors, and E-santé (www.e-sante.fr), created in 2002, belongs to a group of mutual funds, including *Garantie Mutuelle des Fonctionnaires* (GMF), one of the oldest mutual insurance companies in France (1934).

1.3.2. A plethora of information

Diversity of information, plurality of actors, important economic stakes, differentiated legislation: everything comes together to provoke an exponential presence of e-health. It is now becoming difficult to find our way around this nebula. The third difficulty is for the researcher, on the one hand, to try to create a typology of e-health, and, on the other hand, to analyze the attempts to control this information by public authorities and the Council of the Order.

Health sites can be classified according to five main types: first, Internet users can find few sites or spaces that are accessible only to professionals; second, institutional sites (French ministries, French National Institute for Prevention and Health Education, French National Cancer Institute, French High Authority for Health, etc.) can be classified according to the type of site they are visiting. There are many more commercial sites (insurance, medical equipment, food supplement, pharmaceutical industry sites, etc.); there are also many more associative sites, which are well developed; and finally, there are information sites for the general public. Accessibility, target audience and type of information vary according to these different categories. The first category is the only one with restricted access. The information is professional and medical. All the other categories are available for free access. However, the information disseminated oscillates between public information, which is produced and controlled by public

³ Since taken over by web insights, a content publishing company.

services, market information and a diversified supply of information. Association sites and general public health sites fall into the latter category with a combination of public health information, medical information, advice, practical life, support and games/quizzes. This hybridization of content is a difficulty for the researcher, which is undoubtedly what also makes the success of these sites. All of these sites, apart from the first category, target all citizens who use the public health system, health professionals, patients or their families. For the two categories engaged in content hybridization, the target audience is threefold: members of associations, often patients and their families, as well as health professionals and the media. Table 1.1 illustrates this typology and provides a framework for the researcher’s analysis.

	Access	Type of information
Professional sites	Restricted	Professional information Medical information
Institutional sites	Free	Public health information Prevention
Merchant sites	Free	Market information Marketing Advertising
Associative sites	Free	Public health information Medical information relayed Medical information produced Advice, practical life
Health information sites for the general public	Free	Medical and health information Public health information Market information Counseling Forums – life stories Quizzes/games

Table 1.1. *Typology of e-health in France*⁴

⁴ The first version of the typology was published in [ROM 12]. It is updated and clarified here. This article was based on a study of eight consumer health websites.

The distinction introduced in France in the 1990s between medical information and health information, described in the first part of this paper, is perfectly reflected in this table. The consumer health sites, the least controlled by public authorities and the most subject to a competitive market, then embody a hybridization of the other four types of existing sites.

The plurality of this information and that of its producers leads to a diversity of interests defended by each and every one of them. Health information for the general public is not intended to be of general interest and does not aim to disseminate prevention information, unlike institutional (Inpes, INCa, Inserm, etc.) or associative sites. These types of sites defend commercial interests and are not subject to the same control as sites where public and scientific information can be found. This situation has led the legislator, the High Authority for Health (HAS) and the Council of the Order to propose methods for controlling online health information for the general public.

1.3.3. Attempts to control

In 2004, the legislator entrusted the HAS with the mission of “determining the rules of good practice to be respected by sites dedicated to health”⁵. The Health On the Net (HON) Foundation was entrusted with the implementation of the system by HAS experts. The latter created the specifications of the HON standard, which, rather than guaranteeing the content, focuses on framing the container by imposing principles of transparency on publishers. Labeled sites must clearly display their sources of funding, indicate the source of the information disseminated and the quality of the authors, and ensure that advertising is recognizable and cannot be confused with editorial content. Finally, they must ensure and preserve the confidentiality of personal information given on the site. The HON claims 6,000 labeled sites⁶. This is not much compared to the 43,000 resources (including 10,000 sites) deemed to be of quality by the Rouen University Hospital and indexed for 10 years on CISMeF.org (catalogue and

5 Article L 161-38 of law no. 2004-810 of August 13, 2004 (decree of 10/26/2004).

6 https://www.hon.ch/HONcode/Patients/index_f.html.

index of French-language medical sites)⁷. It is also insufficient to measure the intrinsic quality of the information transmitted online.

We may wonder about the real role of this certification: since it is based on a voluntary approach and has no system of sanctions, some sites have no interest in requesting it. It ends up becoming a marketing tool, useful for the least known sites, and then playing the role of legitimization, and useless for sites already enjoying a good reputation. Thus, sites owned by the Lagardère, TF1 and Springer groups do not display the HON standard.

Finally, this HON standard is a communication and posting action rather than a control element of the information disseminated by the general public information sites. If elements are indeed provided to Internet users on certified sites, they are well hidden in the spaces outside the active page, in the headings “Legal notices” or “Ethics”, but not directly accessible in full page. None of the eight sites analyzed claims that professional journalists produce this information. All mention working with one or more physicians. However, where data are available on the distribution between journalists and doctors, it is very much in favor of the latter. Thus, for the E-santé site, while 28 journalists are mentioned as working on the production of the articles, more than 100 doctors are listed as collaborators.

Internet users therefore have access to diversified, medically validated and regularly updated content on the general public information sites, but these are not the spaces they visit, according to the results of the survey conducted by the Council of the Order (which cross-checked the results of the survey we conducted in 2006–2007). Clearly, these are the community spaces that Internet users frequently visit, i.e. the sites where they can exchange ideas, play games and take tests. It is therefore the social aspects that seem to interest Internet users more than the information content, which is what health professionals and public authorities are trying to control.

1.4. New uses

Over the last 20 years or so, health has therefore undergone a slow process of computerization and then media coverage. The first consequence was the multiplication of information, the ease of access to it and its

⁷ <http://www.chu-rouen.fr/cismef/projet-cismef/a-propos/>.

continuous nature. These characteristics then upset the traditional framework of the singular colloquium. It no longer pits a single professional who holds the information against a supposedly ignorant patient, but proposes a situation in which the two discuss (sometimes debate) on the basis of information that they jointly hold [TAB 19].

1.4.1. *Continued confidence in physicians*

Given the success of online health information and the inability to control it, the Council of the French Medical Association invited experts, institutions and journalists on May 4, 2010 to discuss the evolution of online health information. At this meeting, the results of a study carried out in 2010 by Ipsos were presented⁸. These data largely echoed a survey we conducted in 2006 and 2007⁹ on similar themes. In four years, the results remained fully compliant despite the exponential development of digital practices and the sites or other applications available. They are also in line with the various surveys carried out in recent years: all these studies show the continued development of online information searches by the French; however, the latter also constantly reaffirm their confidence in their doctor for the validity of health information. Thus, contrary to many of the speeches produced at the turn of the millennium, Internet users are perfectly aware of the fluctuating reliability of what they find online and in no way substitute the Internet for their doctor. Internet users continue to consider that the best source of health information remains their doctor (83% in 2006–2007, 89% in 2010 and 56% in 2019). What is changing is that the Internet comes second (after doctors) among sources of information for Internet users in 2010, whereas the Internet was not cited as a legitimate source of information in 2006. In 2019¹⁰, while doctors are still popular for 56% of the French, search engines (31%) are now ahead of websites (23%), but pharmacists (43%) have slipped between doctors and the Internet. In addition, the share of Internet users trusting the information available on the Internet increased from 48% in 2006 to 74% in 2010. It is therefore undeniable that the search for health-related information on the Internet is

⁸ Survey “the consequences of Internet use on patient–doctor relationships”, April 2010 (a sample of 1014 people).

⁹ Questionnaire survey and interviews with users of the Doctissimo forum between 2006 and 2008 (103 questionnaires and 18 interviews).

¹⁰ Statista 2019, IPSOS survey.

becoming more widespread and commonplace; similarly, the doctor remains the preferred reliable source, but at the same time mistrust of online content is tending to fade.

Doctors, for their part, seem to find it difficult to accept this new situation of the singular colloquium where the patient is no longer passive and arrives with a certain amount of information. Is it a fear of being dispossessed of power (the sole holder of knowledge)? The one about being questioned? Probably in part, or at least at first. However, what emerges from the various interviews conducted with doctors is¹¹ rather a weariness to note that the time of consultations is getting longer because of these discussions and that they must now deny, correct, explain or deconstruct the information gleaned by patients on the Internet. Inevitably, in a context of doctor shortages, in a situation where the number of daily consultations is increasing, this creates tensions. Thus, in 2010, as in 2006, Internet users were reluctant to tell their doctor that they had conducted research on the Internet: 63% of them hid it in 2006 and 65% in 2010. While Internet users said they feared the doctor's hostile reaction to the Internet in 2006, 31% of 2010 Internet users said they had experienced negative feelings. It is a complex situation that is taking shape: patients who inform themselves on the Internet having taken the measure of the information available, who keep all their confidence in their doctor, but, patients who do not venture to reveal to him or her that they have been on the Internet, while at the same time nourishing the consultation of the information in their possession.

1.4.2. *Beyond information: life stories and testimonies*

This paradox is partly explained by the study of discussion forums and surveys on the motivations of Internet users: the latter are not primarily interested in information. What they like is the link through the community spaces that Internet users frequent, i.e. the sites where they can exchange, share, move, sympathize and advise. The real change in e-health lies in the emergence of this non-expert, non-professional voice. This movement to publicize an ordinary word is not specific to the media and must be seen in the context of a broader social movement, that of “forms of citizen involvement in decisions that concern them” [ROS 06, p. 301]. In the field

¹¹ A series of 22 interviews were conducted with doctors in charge of information services in various French hospitals between January and August 2006.

of health, the situation is particular because – as we have pointed out above – this information was traditionally public (emanating from the State or major public research bodies) and scientific (requiring a precise knowledge base and validation circuits specific to this sphere). In this setting, patients never had a direct voice. Others have always spoken for them. It is precisely from this niche (individual, direct and testimonial expression) that the content industries are seized. This investment was motivated first and foremost by the media status of health [MAR 10], which guarantees its success in terms of audience ratings. This is then favored by the absence of a binding legislative framework, unlike professional information, which greatly facilitates its development. This investment is finally favored by the trends towards individualization and dematerialization of media, as well as by the massive use and development of information–communication techniques [GROS 07, CAR 02], which are now winning over the general public. Moreover, health, which refers to a large extent to intimacy, is thus perfectly attuned to the practice of anonymity and the use of pseudonyms specific to the community Internet. Generating consubstantial empathy, it provokes interaction almost naturally. This characteristic is particularly clear through the emergence of new forms of words: life stories and testimonies. However, the phenomenon that the Internet underlines with regard to the expression of the sick (and their entourage) is the emergence of testimony (or life story). The content analysis we conducted of the Doctissimo forum reveals that testimonials account for about 50% of the exchanges. The forum is becoming more and more like a real virtual community, which is united by a common trait: illness, a need for information, suffering. It is not a place where you come for information. Moreover, many of the replies remain unanswered.

The digitization of this ordinary expression, of the word of the sick, has shaken the status of testimony. We have measured it through several studies on the emergence of this word in traditional media as well as on the Internet. In Table 1.2, we summarize the results of this research, one dealing with health programs on television, through which the issue of the use of testimonials was analyzed, and the other dealing with non-professional speech on the Internet and focusing on the development of life stories¹². This table categorizes both the aims, tone and different statuses of the testimony according to the media and the time period.

12 [ROM 07] and [ROM 12].

	Illustrative testimony	Argumentative testimony	Informative testimony
Appears	19th Century (popularization) until today	Mid-1980s to present day	Late 1990s to present day
Supports	Traditional press (health and science sections) Television and radio	Television and radio (talk show, night show) Traditional press (society and politics section)	Internet (forum) Social networks Blogs
Aims at	Outreach Pedagogy	Evidence Debate/charge	Individual expression Solidarity – empathy Informative
Tone	Didactic Technical and specialized	Compassionate Controversial	Emotive Intimate Togetherness Informative
Status	Example	Argument	Constitutes the message

Table 1.2. *Place and role of testimonials in health information*

Armed with the vast amount of information available online, and fed by the multiplication of testimonials, patients are now going to their doctor's office or making decisions about their health (vaccination, for example). The doctor is therefore no longer the only actor in the health of individuals. These new uses of health information, the multiplication of actors, types of information and media should lead us to think of the production of health information as a "chain of cooperation" [BEC 88] between ordinary Internet users, information professionals and health professionals. In fact, in the marketing operation of these sites, the argument of cooperation and the promise of community spirit are at the root of strategies to capture the attention of Internet users. However, the scarcity of this attention is the object of multiple strategies. Beyond this promise of cooperation (collaborative spirit), it is clear today that the production of health-related information involves a complex chain of cooperation comprising scientists, journalists, web actors, patients, associations, activists, health and political personnel.

1.5. Conclusion

Through this reflexive feedback, the info-communication study of online health imposes several saving postures on the researcher.

First of all, it is necessary to study the health situation not in terms of digitization, but rather on the basis of a good knowledge of the field of health, its history, its actors and its functioning, in order to envisage the introduction of digital technology. It is therefore a question of avoiding the discourse of the “revolution” generated by digital technology and not falling too quickly into a disruptive approach. In this respect, operating over a long period of time, thinking about innovations in terms of a continuum rather than a rupture, analyzing actors’ strategies, in short, working on the notion of “social logic” as defined by Bernard Miège [MIE 04] is more relevant.

Second, the very important and complex issues at stake, whether economic, technical, professional, scientific or societal, make it necessary to acquire several analytical tools and to enrich one’s own disciplinary “toolbox”. How can we understand the evolution of e-health without mastering – even partially – the digital economy or the balance of power and strategies of players in the communication industries? How can we understand the emergence of new forms of expression without placing them in broader movements such as the questioning of experts, new social movements, the development of information and communication technologies, etc.? How can we finally work on health in France without taking up the whole range of public policies in this area and without analyzing the politicization of health?

In conclusion, to study health online for an ICS researcher is to accept incompleteness. Changes are at work, interactions are numerous, the stakes are high and the dynamics are still ongoing. None of these interacting elements, taken in isolation, is sufficient to understand the situation. It is the balance of power between them and the ongoing adjustments that informs the e-health situation.

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