

Gender is the message.

Keys to study the asymmetries of men and women in the communication of science¹

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1. Introduction

As in the photographs taken under the Robert Capa pseudonym (fictional name with which André Friedmann and Gerda Taro signed their works), during the Spanish Civil War, researchers have searched a feminine gaze in the images portrayed by Gerda Taro and a masculine look at those of André Friedmann, in an attempt to classify which photo did each one of them take; in the messages of the social media there is always an informative look in which gender underlies.²

In this chapter we start from the hypothesis that there are several levels of asymmetries that occur in the dissemination of scientific information from the point of view of gender studies. The presence of scientific content, whether informative or informational, in the audiovisual media is a minority³ and, therefore, it is difficult to assess inter-gender differences. So when at some point we quote or make reference to the media, we will refer to the press in all cases, since it will be our object of study. We choose the press for the characteristics of the medium, we can archive it and analyse it with more viable methodological tools. We also start from the existence of a scientific journalism of greater quantity and quality, but this is not an obstacle for gender asymmetries to be detected in the treatment of scientific news, so we are going to focus exclusively on general information newspapers, as models to evaluate these differences.

In general information newspapers, in Spain, in the approach of news with a gender bias, problems in several levels are appreciated: a) the first of them is thematic. In this first level, the selection of news, their treatment, the titling of the news and the informative relevance that the newspaper wants to give to that informative piece stand

¹ This work has been carried out within the framework of the project *Analysis of institutional campaigns in the case of vaccination against the human papillomavirus (CSO2011-25810)* of the Ministry of Science and Innovation.

² *Vid.* Moreno Sardá: 1998.

³ The average of scientific news in a news bulletin is 1. The percentage that is dedicated to the spaces of scientific dissemination depends on the channels. In private ones, there are networks that dedicate 1% or 2%, such as Tele 5 or Antena 3, in state and regional public ones, they dedicate a bit more.

out; b) the second level is related to the use of information sources. One of the processes really inherent in the quality of the information product is the selection of information sources. For the text to be undoubtedly conceived as a text of journalistic value, it is necessary to use sources of information that are prestigious, that are verifiable and that are experts in the subject matter; c) the third is of a professional nature. This section is related to the journalistic profession and its professional routines.

The proposal of this work is to determine and recognise the biases in the three levels described above and to offer two types of proposals: a) a professional type, as a repertoire of good practices, for those who practice scientific journalism. The shortcomings exposed in this area of journalistic specialisation should be addressed by professionals so as not to continue, in the imminent future, with the same informative destinations that have prevailed until now; and b) another research proposal. It is a suggestion to evaluate the situation of published journalistic works. The general idea is that in research papers, in doctoral theses, in academic papers of an empirical nature, a question about the gender of the sources of information is introduced, when content analysis or framing studies are carried out. That is, between different registration units designed for research in scientific communication, a field should be systematically considered to gather whether the source of information (the actant subject) is a man or a woman and the typology of the source. If it is also an expert source, institutional, private, colloquial, etc. With the data obtained in the different studies (different universes, samples and other elements that form the research), we would obtain an x-ray of the gender inequalities in the use of information sources. These data would allow us to undertake comparative studies and over time chronological reviews. It is a first step, to assess what the situation is and to be able to take corrective measures.

During this same year 2011, on March 9, the newspaper *El País* titled on the cover the following information: “Brussels *threatens* to set quotas of manager women in companies”.⁴ The entries that define the verb *threaten* seem inadequate to express the implementation of a rule that encourages European companies to incorporate a greater number of women into their boards of directors. The most peculiar thing about this piece of news is that its author is a female journalist. Androcentric discourse has penetrated so much in society that a female journalist interprets and values an event as

⁴ *Vid.* OED (Oxford English Dictionary) definition of *threaten*: 1. State one’s intention to take hostile action against (someone) in retribution for something done or not done; 1.1. State one’s intention to do (something undesirable) in retribution; 2. Cause (someone or something) to be vulnerable or at risk; endanger.

“alarming”, instead of “exciting” and even more given her gender status and allows herself to be swept away by the state of univocal opinion. The news includes progressive regulations that symbolise a step forward in favour of women and equality in management positions. The headline should have been positive but surely the news was generating enough tension between the MEPs and lobbyists, so it was influenced by the context, either it or the newspaper. For example, it should have been opted for a headline such as: “Brussels regulates the presence of quotas of female managers in companies” or “Brussels urges companies to incorporate female managers”. “The EU is studying a rule that guarantees the presence of female managers in companies.” Suddenly, I can think of dozens of positive headlines to spread the news.

In relation to the topics that appear on the agendas of the media, there has been no critical reflection on the part of professionals on gender issues, there do have been other works on stylistics and ethics. The gender perspective is also seen in issues of domestic violence since the treatment of the news does not follow precise rules, although some style documents have already been published as a protocol. What I have explained in the introduction is only a prelude to other specific examples that we are going to present. As the topic that we address here is that of scientific communication, we are going to focus on that point.

2. Theme asymmetries: on bias and other unevenness

A first level of revision in which gender differences arise is in the selection of published topics and how the image of women is presented in these subjects. Through recently published examples, we will look at gender biases. In the case of scientific information, there are no commandments on how to deal with a news item of this type. Therefore, I discuss through a specific topic related to biomedicine, which is being debated in numerous international universities (Heath, 1999; Illich, 1990; Moynihan, 1998; Payer, 1992; Tiefer, 2004), the treatment of a scientific history, from a gender perspective. It is about the presence of reports and news disseminated by the media related to the medicalisation of women. Out of curiosity, has no media contemplated that behind all this news, there is a spurious commercial attempt? The paradigm of this news is the perpetual attempt to publicise (disease mongering) the results of studies that show that the use of hormonal substances is beneficial for “sexual dysfunction” in biological processes such as menopause. There is a generalised tendency to classify as

diseases the biological problems that human beings have over time. The disease mongering concept (promotion or patronage of diseases) was coined by Lynn Payer as the process that “tries to convince healthy people that they are sick, and people who are slightly ill, that they are very sick”. Especially in the case of women news about the benefits of the consumption of chemical substances that help to improve sexual dysfunction, osteoporosis, premenstrual syndrome, etc. are “publicised”. There are academic studies in which the treatment of the media in relation to the benefits and the risks of medicalisation has been analysed (Moynihan et al., 2000), in which it has been concluded that in the published news inadequate or incomplete information about the risks, benefits and costs of medicines was included, as well as financial relationships between study groups or experts and manufacturers of pharmaceutical products. For twenty years, the print media has been building the image of a mature woman who needs to take chemicals because they benefit her on the possible effects of menopause, which are multiple. There is no equivalent work for men.

Corollary 1: The mature woman is a sick woman.

Another aspect of the thematisation is the fact of giving more representation value to the figures of male scientists than to those of female scientists (biographies, commemorations, anniversaries, etc.). Every time there is an anniversary of a recognised scientist, the print media publish numerous special issues. This year, in which the UN General Assembly proclaimed 2011 International Year of Chemistry, Marie Curie was awarded the Nobel Prize in Chemistry a century ago, in 1911, in recognition of her services in the advancement of Chemistry. This researcher had discovered, isolated and studied the nature of radium and polonium, in 1910. Let's see how many print media pay homage to Marie Curie with a report coinciding with the anniversary of the Nobel Prize in Chemistry, as it has been done with other scientists for the publication of a particular work, or for the anniversary of their birth. In politics, there are also studies that show that women are treated journalistically worse than men and, in any area of social life, women are presented with a stereotype worse valued than men.

A decade ago (2000) the Associació de Dones Periodistes de Catalunya, through a working group formed by five researchers: Marta Bach Arús, Elvira Altés Rufias, Joana Gallego Ayala, Marta Plujà Calderón and Montserrat Puig Mollet studied the absences

and the presence of women in the media, and what they announced as more significant, was the confusion that existed in the journalistic profession in matters related to gender. This is the reason why they published a work that has had a great impact during this decade *El sexo de la noticia* (Bach *et. al.*, 2000), a work that is presented as an indispensable work tool that helps incorporate the perspective of gender in information, in order to break the secular inertia of giving an unequal treatment to women, when they are objects or subjects of the journalistic information themselves.

Corollary 2: Female scientists are not relevant.

Following this trend, the media try to highlight the figure of men over that of women. In the news that appear published in the screenshot of the newspaper *El País digital*, which is presented below, it is stated in the entry that “A young man, with college education and living in a city with more than one million inhabitants. This is the profile of people who show a greater interest in science and technology, according to the IV National Survey of Social Perception of Science 2009”. When reading the opening paragraph you infer from the data that the text gives you that men are very interested in science and women are not, but when you go deeper into the results of the survey, you discover that there is a favourable bias towards the image of men, because the differences between men and women are not pressing.

Screenshot of *El País Digital* of February 18, 2009



Let us check the real data and see the gender bias in the news. Thereupon, the data collected by FECYT about the interest in science are shown below. Once the data have been examined, let us evaluate the biases of the published news.

Table 1. Interest on science and technology of men and women

Topics of interest of the FECYT 2009 survey	Total	Men	Women
Food and consumption	19,00%	12,90%	25,00%
Astrology / occultism	1,60%	1,60%	1,60%
Science and technology	9,60%	13,10%	6,10%
Films and shows	12,60%	12,30%	12,90%
Art and culture	14,90%	13,00%	16,70%
Sports	26,10%	42,50%	10,30%
Economy and companies	16,60%	19,30%	14,00%

Education	16,00%	12,50%	19,30%
Medicine and health	28,00%	20,50%	35,20%
Environment and ecology	15,70%	16,20%	15,20%
Politics	14,90%	18,50%	11,40%
Events	9,00%	7,60%	10,40%
Terrorism	10,70%	10,90%	10,50%
Travel / tourism	8,10%	6,50%	9,60%
Celebrities topics	3,20%	0,80%	5,50%
Work and employment	22,90%	23,70%	22,10%
Social topics	12,90%	10,50%	15,20%
Housing	0,70%	0,60%	0,80%
Immigration	0,60%	0,50%	0,80%
Citizen security	0,40%	0,40%	0,40%
Transport / infrastructures	0,10%	0,10%	0,10%
International situation / wars	0,10%	0,10%	0,20%
General news	0,30%	0,20%	0,40%
Leisure	0,10%	0,10%	0,10%
Other	0,60%	0,70%	0,60%
No answer	1,90%	1,70%	2,00%
Total	8602	4235	4367

Source: FECYT 2009

Own source.

Examining the data provided by the survey, men are interested in sports and women, in medicine, health and consumption. This was the first question of the questionnaire of the IV National Survey of Social Perception of Science and

Technology 2009. It was an open question and could be answered with three options.⁵ The total sum of the three answers offered the following data: the first informative topic of interest of all the respondents (men and women) was medicine and health, with 28%; the second, sports, with 26.1%; the third, work and employment, 22.9%; and the fourth, food and consumption, 19%. The sum of all the interviewees who chose science and technology in the first, second or third option, as a topic of interest, represented 9.6% (Moreno Castro: 2009).

The choice of science and technology, as a topic that arouses interest through the news and information we receive daily from the media, was 9.6% of the respondents, in general. The isolated data indicates that the interest of Spaniards (men and women) for science and technology is low. If the analysis of this percentage is compared with the news that is disseminated through the media and that becomes a debate in the public sphere, it seems to acquire a moderate value, because scientific information is meagre in the media. In any case, there are six points of inter-gender difference regarding the interest in science and technology, while regarding the interest in medicine and health there are fifteen points, in favour of women, and in food and consumption, there are also thirteen points in favour of women. So, why we do not title it like this?: “Women are interested in medicine and health, men, in sports, according to a FECYT study”. This would be politically correct, but nobody questions it when it is published the other way round.

Corollary 3: Women are not interested in science.

3. Asymmetries in the sources of scientific information: where are the women?

Women are underrepresented in the media as sources of information. As it appears in the book *El sexo de la noticia*, one of the causes why women do not appear in the media could be that the social movements in which they participate are not usually organised with hierarchical criteria, so that the media do not always find the same interlocutor (which would guarantee legitimacy as a source), or provide the information in an adequate format to be material when constructing a piece of news.

⁵ Formulation of Question 1: Every day we receive news and information on very different topics. Please tell me three topics which you are particularly interested in. Open question (maximum of 3 answers).

In the case of scientific information, for illustrative purposes, I refer to the data collected in my doctoral thesis⁶ entitled *La biotecnología en la prensa diaria (1988-1998). Análisis y tendencias*, in which I introduced a field of analysis on gender in information sources. In the set of texts studied (398, in total) declarations of the social actors participating in the news were found, classified as follows: a) texts in which statements made exclusively by men were collected: 242, this was 60.8% of the total analysed; b) the woman as the main subject of the issue under analysis was found in only 15 texts, that is 3.7% of the documents analysed; c) the presence of evident declarations in the documents by both sexes was detected in 30 documents, this is 7.5%; and d) finally, texts in which no statement was made or the gender of the authors of a work was not cited, 111 documents were quantified, this represented 27.8%. The data that the investigation showed are forceful: the presence of men was overwhelming in a specific topic about the presentation of biotechnology in extrahuman applications in everyday life (plants, food, drugs, animals, etc.). In 60.8% of the documents the actant subjects were exclusively men and in 3.7%, they were only women. The quantitative results obtained in the research allowed me to cross the data with other registration units and thus, assess that not only were they men, but in all the groups related to the topic of research, from researchers, technicians of the administration, politicians even in the environmental groups, the sources of information were masculine (Moreno Castro: 2001).

Inequalities increase, if possible, when the protagonists of the information are analysed: more than 80% are men. Therefore, as a recommendation for research carried out in the field of communication sciences, it would be advisable to introduce a question about the sources of information. As for example, if the source of information is male or female. Also about the nature of the source of information because it can be “woman”, but it is also important to know when women appear, in what condition they appear, what positions they occupy or in what capacity they have representation in the media.

Corollary. The sources of information are men.

4. The asymmetries of the profession from the classrooms to the newsrooms

⁶ Vid. Moreno Castro (2001).

University classrooms are 60% occupied by women in the communication degrees and 40% by men.⁷ This is transferred to newsrooms, but not to management positions. It is rare to have a female chief of section, head director, or editor, and, above all, it is strange to meet a female newspaper editor. These elements that make up the journalistic profession must be taken into account because the selection of news arises from a hierarchy in the decision-making of the contents: editor, chief of section, assistant director, director, since it is almost always a man who selects the contents with a male look at the events.

Because of these asymmetries that unleash imbalances in the profession and in professional routines, we find some issues such as those previously discussed about the underrepresentation of female scientists, or about the distortion of issues related to women's problems, with diseases of the women who do not form the establishment of media science. To improve it, it would be necessary to look for a balance between the subjects and also in their journalistic treatment. In journalistic companies, women should also be in positions that imply decision-making.

5. Conclusions

In short, after the examples presented in this chapter, we could confirm or validate the starting hypotheses in this work. There is a sexist treatment of scientific information. There are notable asymmetries between men and women in the communication of science and technology. In the scientific information there is a strong gender bias in the published topics, such as the promotion of diseases, in the case of women, or biasing the data of a survey at the expense of the image of women, as we have been able to confirm.

Although in this chapter we have focused on the written press, as an object of analysis, to expose the detected asymmetries, there is also a sexist treatment of programming slots, both in radio and television. For example, in the radio, contents are programmed according to the broadcasting schedules; that is, depending on the audience, understanding that early in the morning the ones who listen to the radio before going to work are men, and therefore, the most complex contents on politics, economics and science are inserted. As the morning progresses, the contents become yellow or pink and the programs conclude with frivolous news, often on gossip, with anecdotes, at a time when the profile of those who are listening to the radio are women, mostly.

⁷ Data collected from the statistical profiles of the enrolment on Journalism and Audiovisual Communication students of the 2010-2011 academic year of the University of Valencia.

There is an unequal treatment in relation to the sources of information in the media, as we have seen above: more male scientists are cited than female scientists, more male researchers than female researchers, but also fewer women appear as spokespersons for social movements. Therefore, there is a low participation of women as social agents, or an underrepresentation in the media sphere as actant subjects.

The editorial offices of the media are occupied by women, sometimes even those responsible for science news are women, but the responsibility positions in the media are nearly always occupied by men. This tilts the balance in making decisions about the selection of topics towards a male view of events.

Therefore, we conclude that we should consider the joint increase in decision-making positions in the media, progressively increase the presence of women as referential characters, and work on the modification of content and discourse, as female sociologist Van Zoonen (1994) already pointed out in the 1990s.

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