

Press coverage of the WHO report on meat consumption and cancer: sources and frames

Estrategia informatiboak haragia eta minbiziari buruzko MOEren komunikatuaren aurrean: iturrien hautaketa eta argudioak

Estrategias informativas tras el comunicado de la OMS sobre la carne y el cáncer: selección de fuentes y argumentos¹

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Abstract

A report released by the WHO on October 26, 2015 linking red meat and processed meat to cancer received substantial attention in Spanish newspapers. Nevertheless, articles published subsequent to initial coverage of the health warning frequently downplayed its importance and cited the opinions of dissenting experts. This paper analyses the strategies employed by *El País*, *El Mundo*, *La Vanguardia* and *El Correo* in their coverage on this topic during the three weeks following the release of the WHO report.

Keywords: Press, sources, cancer, risk, framing.

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Laburpena

Munduko Osasun Erakundeak 2015ko urriaren 26an kaleratutako komunikatuak, zeinetan haragiki gorriaren balizko eragina minbizian aldarrikatzen zen, oihartzun zabala lortu zuen Espainiako hedabideetan. Hasierako larritsuna igaron ondoren, egunkariak saiatu ziren MOEren oharpenak arintzen. Horretarako hainbat adituren ikuspegiak aintzat hartu ziren eta baita argudio lasaigarriak ere erabili zituzten. Artikulu honetan *El País*, *El Mundo*, *La Vanguardia* eta *El Correo*ren estrategia informatiboak aztertzen dira MOEren komunikatua ezagutu zenetik hurrengo hiru asteetan zehar.

Gako-hitzak: Prentsa, iturriak, minbizia, arriskua, enkoadraketa.

Resumen

El comunicado emitido por la OMS el 26 de octubre de 2015 acerca de la carcinogenicidad de la carne roja y sus derivados alcanzó una amplia respuesta en los medios de comunicación españoles. Tras la alarma mediática inicial, la prensa trató de relativizar las advertencias de la OMS recabando los puntos de vista de diferentes expertos y mediante el empleo de argumentos tranquilizadores. En este artículo se analizan las estrategias informativas de *El País*, *El Mundo*, *La Vanguardia* y *El Correo* sobre este tema durante las tres semanas posteriores a la publicación del comunicado de la OMS.

Palabras clave: Prensa, fuentes, cáncer, riesgo, encuadre.

0. Introduction

On October 26, 2015, the World Health Organization (WHO) issued a press release concerning a study conducted by a team of 22 experts working under the auspices of the International Agency for Research on Cancer (IARC) on the carcinogenicity of red and processed meat that had classified the consumption of red meat as Group 2A (probably carcinogenic to humans) and processed meat as Group 1 (carcinogenic to humans) (IARC, 2015).

In a summary of their conclusions published in *The Lancet Oncology*, IARC experts (Bouvard et al., 2015) asserted that eating 100 grams of red meat per day increased one's risk of developing colorectal cancer by 17% and that daily consumption of 50 grams of processed meat raised one's risk of the same type of cancer by 18%.

Simultaneous to the WHO announcement, the IARC issued a question and answer sheet that explained the methods it had used in greater detail and placed its conclusions in a clearer context. This document clarified that the classification of red meat as Group 2A (which signifies 'probably carcinogenic to humans') had been based on limited evidence and that processed meat had been classified as Group 1, which, according to the IARC, is "a category used when there is sufficient evidence of carcinogenicity in humans. In other words, there is convincing evidence that the agent causes cancer". The Q&A stressed that although processed meat had been placed in the same category as tobacco and asbestos, it did not suppose the same degree of risk to human health and that according to a reputable research organisation, approximately 34,000 cancer deaths are attributed a year to a high intake of processed meat—a far lower number than those linked to smoking (1 million) the consumption of alcohol (600,000) or air pollution (over 200,00).

Although the qualifying statements contained in the Q&A did nothing to temper the tone of alarm conveyed in news articles published immediately after the WHO announcement, newspapers soon began to take a more sceptical stance. Subsequent coverage frequently underscored the health benefits of meat, speculated about the possible financial ramifications of the IARC findings for the meat industry and even questioned the credibility of the study.

Media reaction to the WHO announcement constitutes a case study of the ways in which the press handles health risks in general and food safety issues in particular. Previous studies of this facet of journalism worth noting include those conducted by Jordi Farré (2005), Barnett et al. (2011), Whaley & Tucker (2004) and Pilar Saura (2005).

1. Objectives and hypotheses

The main objective of this study has been to analyse the minimization strategies employed by the press following food alerts or recommendations issued by government or supranational food and health agencies. Spanish newspapers have covered a number of public health alerts over the past four years, among them the horse meat fraud exposed in the spring of 2013, the May 2103 anisakis outbreak related to Cantabrian anchovies and a more recent IARC warning regarding the link between oesophageal cancer and the consumption of hot beverages such as tea and coffee.

This paper is meant to serve as a case study of coverage of the WHO's food safety alert on the carcinogenicity of red and processed meat provided by four major Spanish newspapers (*El País*, *El Mundo*, *La Vanguardia* and *El Correo*) during the three weeks following the release of the international organisation's report.

Three research questions were posed at the outset of this study:

RQ1: Did Spanish newspapers consider the WHO announcement a health safety alert?

RQ2: Did the Spanish press attempt to mitigate the public impact this announcement was likely to have?

RQ3: Did these newspapers handle this issue differently?

These questions led to the formulation of the following four hypotheses:

H1: The articles published by the four newspapers examined immediately following the WHO announcement would have an alarmist tinge.

H2: The same newspapers would subsequently employ minimisation strategies to downplay the seriousness of the issue.

H3: The ways in which these newspapers framed their coverage would be influenced by the input of the scientific, health and agricultural experts they used as sources.

H4: There would be distinctions between the ways in which these newspapers framed their coverage of this issue.

2. Methodology

All straight and interpretive news content published in relation to the WHO report by *El País*, *El Mundo*, *La Vanguardia* and *El Correo* during the three weeks following the international organisation's initial news release, including quotations by sources asked to comment on the findings, was thoroughly examined for this study. Given their special characteristics, articles that were deemed to be opinion pieces in the strictest sense of the term were excluded from the sample.

According to Introl-OJD (www.introl.es), in 2015 three of the newspapers chosen for this study ranked as the country's largest and the fourth (*El Correo*) seventh in terms of circulation. To ensure representativity, the sample contained newspapers edited in various cities: two in Madrid, one in Barcelona and one in Bilbao.

Material analysed had been published during a three-week period following the initial release of the WHO report (October 27 through November 17, 2015).

Table 1. 2015 circulation figures for newspapers examined.

Newspaper	Circulation
El País	221,390
La Vanguardia	129,073
El Mundo	126,369
El Correo	72,956

Source: OJD.

To better determine the salience of the news content published by each of the four newspapers in question, the analysis conducted for this study focused on the agenda setting function of mass media (McCombs, 2006). Material was evaluated from both a qualitative and quantitative perspective, taking into account theories on discourse analysis developed by authors such as Van Dijk.

Van Dijk (2008: 194) proposes “a multidisciplinary theory of news, featuring a theory of news schemata defined by conventional categories of news discourse as a genre and social practice: Summary (Headline, Lead), New Events, Previous Events, Context, Commentary, and related categories that globally organize the (macro-level) topics of news reports in the press”.

Prior to undertaking the analysis, framing theory was used to establish the dominant frames, devices and arguments employed in the production of the content to be examined.

The combination of the analysis techniques applied in this study was based on guidelines laid out by authors such as Alcívar (2015), who recommends using both discourse analysis and framing theory techniques in the analysis of lead articles.

According to Entman (1993: 52), “to frame is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described”. Gamson and Modigliani (1989) identified five basic framing devices: metaphors, exemplars, catchphrases, depictions and visual images. Tankard (2001: 101) offers a longer list of 11 “framing mechanisms, or focal points for identifying frames”: subtitles and kickers; subheads; photographs; photo captions; leads; selection of sources; selection of quotes; pull quotes; logos; statistics, charts, and graphs; and the concluding statements or paragraphs of news articles, which were taken into consideration in the design of this study.

Attention was also paid to a study on Belgian press coverage of issues related to asylum and illegal immigration conducted by Van Gorp (2005: 503), who defines a frame as “a persistent meta-communicative message that specifies the relationship between elements connected in a particular news story and thereby gives the news coherence and meaning”. The inductive approach to identifying news frames applied in this study, by which frames became apparent during the course of analysis, was based on de Vreese’s analysis of the pros and cons of inductive and deductive approaches to framing research (2005: 53).

Other sources consulted concerning the application of framing theory in this context included Semetko & Valdeburg (2000) and Giménez (2006). The 84 news

items contained in the sample, which had been published by the four newspapers selected during the aforementioned three-week period, were classified according to a scheme that contemplated up to twenty distinct categories. Inter-coder reliability was verified by means of the Holsti method, which as Igartua (2006: 231) notes, “is employed to calculate the degree of agreement between two independent codifiers”. The coefficient of agreement for this study was 0.90 and the reliability threshold 0.8.

3. Results

3.1. Placement, authorship and sources of news items analysed

The four newspapers examined published a total of 54 straight and interpretative news items related to the initial WHO announcement and reactions to the information it contained. *La Vanguardia* published the highest number of news items on this issue (17) and *El Mundo* the lowest (9). Coverage provided by *El País* and *El Correo* (with 14 items each) represented a midpoint between the other two dailies.

Table 2. Placement and size of news items analysed.

	El País	El Mundo	La Vanguardia	El Correo	TOTAL
Front page	2	1	2	2	7
Lead story on page	7	4	8	7	26
3 or more columns	1	1	3	2	7
1-2 columns	4	3	4	3	14
TOTAL	14	9	17	14	54

Source: Own preparation.

All four newspaper analysed ran a front-page story about the WHO announcement on October 27, 2015. All but *El Mundo* featured an additional front-page story on the topic during the three-week period covered by the study. The fact that 55.3% of the related news items placed in interior sections were featured as the lead stories on the pages on which they appeared attests to the importance the newspapers examined attributed to this issue. Of the four dailies in the sample, *El País* and *El Correo* were responsible for the highest percentage of interior section lead stories related to the carcinogenicity of red and processed meat (58.3%) and *El Mundo* the lowest (50%).

In addition to front-page stories, the four newspapers examined published a total of 47 straight and interpretative news items in their interior sections, 14 of which carried no byline. The other 33 were attributable to 25 journalists (an average of 1.3 per person). The high proportion of journalists to articles indicates that few of these newspapers have reporters specialising in the area of nutrition. Only two reporters (Anna MacPherson of *La Vanguardia* and Julián Méndez of *El Correo*) were responsible for more than 2 of the articles contained in the sample.

The high number of stories published without a byline, which accounted for 29.7% of related news items appearing in interior sections, was also noteworthy.

Table 3. Authorship of news items published in interior sections.

Author	Newspaper	Nº of new items	Percentage of related articles*
Nuño Domínguez	El País	2	16.7
Pablo León	El País	2	16.7
Cristina Delgado	El País	1	8.3
Emilio de Benito	El País	1	8.3
Martín Caparrós	El País	1	8.3
María Fernández	El País	1.5	12.5
Vidal Maté	El País	0.5	4.2
No byline provided	El País	3	25.0
María Valerio	El Mundo	2	25.0
C.R.	El Mundo	1	12.5
Vicente Useros	El Mundo	1	12.5
No byline provided	El Mundo	4	50.0
Anna MacPherson	La Vanguardia	2.3	15.4
Cristina Jolonch	La Vanguardia	2	13.4
Celeste López	La Vanguardia	2	13.4
Josep Corbella	La Vanguardia	1.3	8.7
Rafael Ramos	La Vanguardia	1	6.7
Antonio Cerrillo	La Vanguardia	1	6.7
Mar Galtés	La Vanguardia	1	6.7
Piergiorgio M. Sandri	La Vanguardia	1	6.7
Albert Molins	La Vanguardia	0.3	2.0
No byline provided	La Vanguardia	3	20.1
Julián Méndez	El Correo	3	25.0
Pedro San Juan	El Correo	1	8.3
Jesús J. Hernández	El Correo	1	8.3
Carlos Benito	El Correo	1	8.3
Asier Andueza	El Correo	1	8.3
Fermin Apezteguia	El Correo	1	8.3
No byline provided	El Correo	4	33.3

* Figures represent percentages of news items published under a byline.

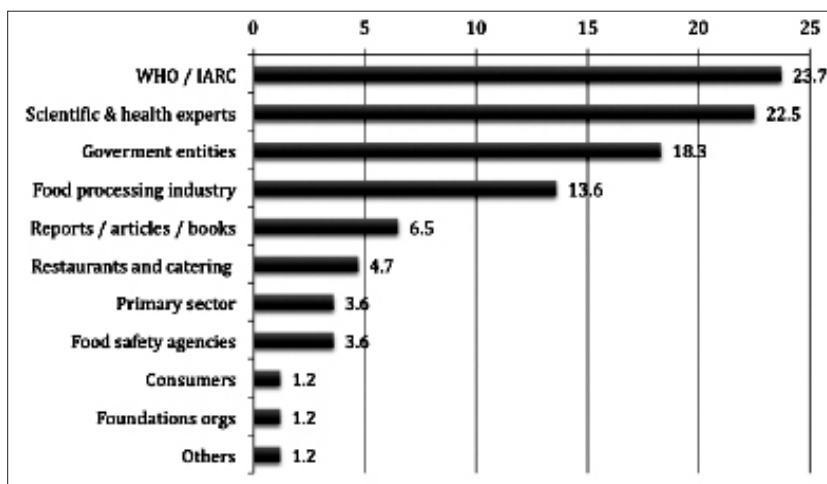
The sources most frequently cited fell into four basic categories: the WHO and the International Agency for Research on Cancer, scientific and health experts, governmental entities, and the food processing industry. Categories defined for this analysis were partially based on those found in articles on similar studies such as “Tratamiento periódico de la Responsabilidad Social Empresarial del sector de alimentos en Colombia” by Pinzón-Ríos, Ocampo-Villegas & Gutiérrez-Coba (2015: 145) and “La cobertura periodística de la obesidad en la prensa española (2000-2005)” by Ortiz-Barreda, Vives-Cases & Ortiz (2012: 28).

Table 4. Types of sources cited by newspapers examined.

Type of source	El País		El Mundo		La Vanguardia		El Correo		Total	
	n	%	n	%	n	%	n	%	n	%
WHO / IARC	10	21.7	8	29.6	12	21.4	10	25.0	40	23.7
Scientific & health experts	13	28.3	3	11.1	13	23.2	9	22.5	38	22.5
Government entities	5	10.9	6	22.2	5	8.9	15	37.5	31	18.3
Food processing industry	8	17.4	5	18.5	9	16.1	1	2.5	23	13.6
Reports / articles / books	1	2.2	4	14.8	6	10.7			11	6.5
Restaurants and catering			1	3.7	7	12.5			8	4.7
Primary sector	2	4.3			3	5.4	1	2.5	6	3.6
Food safety agencies	5	10.9			1	1.8			6	3.6
Consumers	2	4.3							2	1.2
Non-profit sector							2	5.0	2	1.2
Others							2	2.0	2	1.2
Total	46		27		56		40		169	

Source: Own preparation.

Figure 1. Sources cited in news items analysed (% of total).



Source: Own preparation.

As might be expected, news articles frequently cited the WHO and the IARC. Journalists used quotes from scientific and health experts to counter concern generated by the WHO report. Government officials contacted by journalists also sought to reassure

the public, whereas sources in the food processing industry tended to question the credibility of the IARC report and stress the damage it could cause the sector.

Table 5. Institutional and private sector sources (No. of news items).

	El País	El Mundo	La Vanguardia	El Correo	Total
AECOSAN (Spanish Agency for Consumer Affairs, Food Safety and Nutrition)	1	1	2		4
Alimarket (business news and stats)			1		1
ANICE (National Meat Processing Association of Spain)	1		1		2
Asociación de Hostelería Sevilla		1			1
Atlas Variaciones en la Pr. Médica (government NHS initiative)		1			1
CLITRAVI (Liaison Centre for the Meat Processing Industry in the EU)	2	1	1	1	5
European Commission			1		1
<i>Daily Mail</i>		1			1
US Department of Agriculture			1		1
El Pozo (food processing company)	1				1
FAO	1				1
Facua (consumer organisation)	1				1
Fundación Española de Nutrición			1	1	2
<i>International Journal of Cancer</i>		1			1
<i>Jama Internal Medicine</i>			1		1
Mercasa (public sector org)				1	1
Spanish Ministry of Agriculture	1	1	1	3	6
Nielsen				1	1
OCU (consumer organisation)	1				1
WHO / IARC	10	7	12	10	39
Shunghui (food processing company)	1				1
<i>The Lancet</i>			1		1
<i>The Lancet Oncology</i>	1	1			2
The National Cattlemen's Beef Association			1		1
<i>The New York Times</i>			1		1
The North American Meat Institute			1		1

Source: Own preparation.

Some of the newspapers demonstrated a marked tendency to rely on certain types of sources rather than others. *El Mundo* stood out as the daily that least frequently sought the opinion of scientific, health and academic experts. *El Correo*, on the other hand, quoted government officials more often than the others – twice as many times as the average for the four newspapers examined. Unlike the other three dailies, which ran front-pages stories about the potential economic ramifications the report

for the food industry, *El Correo* rarely tapped the opinion of experts in that sector. *La Vanguardia* was responsible for the highest proportion of stories quoting sources within the food processing, primary and hospitality sectors – industries most likely to be affected by the contents of the WHO report (34%). *El País* published 21.7% of the articles in this category and *El Mundo* a mere 2.2%. Apart from two instances attributable to *El País*, none of the content examined quoted a source affiliated with a consumer organisation.

Data provided in Table 5 shows that the newspapers examined cited a wide range of institutional and private sector sources. The organisations most frequently mentioned were those responsible for issuing the report on the carcinogenicity of red and processed meat (the WHO and the IARC). The second most frequently referred to was the Liaison Centre for the Meat Processing Industry in the EU (CLITRAVI), which was used as a source by all four newspapers. The third was the Spanish Ministry of Agriculture, Food and Environment, which was cited in four news items. A close look at table above reveals that 19 of the 26 sources on the list were cited or quoted by more than one newspaper – a sign that journalists for the newspapers analysed have not developed the pernicious habit of habitually drinking from the same trough.

Table 6. Individual sources quoted or cited (No. of news items).

	El País	El Mundo	La Vanguardia	El Correo
Alonso, Alfonso (Minister of Health)	1	2		4
Aranceta, Javier (Spanish Nutrition Society)		1		1
Arias, Pedro Marcelo (FAO)	1			
Andriukatis, Vytenis (European Commissioner)			1	
Basulto, Julio (dietician)				1
Ballestros, María (nutritionist, Spanish Society of Medical Oncology)	2			
Boix, Juan (CEO of meat processor Noel)	1		1	
Boyle, Patric (North American Meat Institute)			1	
Cabezas, Carmen (Promoció Salut Catalunya)			1	
Castells, Antoni (Hospital Clínic Barcelona)			2	
Collado, Josep (FECIC, Catalanian meat industry association)			1	
Contreras, Jesús (Food Observatory, University of Barcelona)	1			
Darpón, Jon (Health Minister, Basque Country)				2
Díaz Méndez, Cecilia (University of Oviedo)				1
Domingo Josep Lluís (Univ. Rovira i Vigili)			1	
Escribà, Antoni (Argal, meat processing firm)			1	
Esteller, Manel (scientist)		1		
Estruch, Ramon (nutrition expert)			2	
Fernández, Ricardo (oncologist)				1
García-Gasull, David (sausage maker)			1	
García-Palacios, Guillermo (Jabugo ham producer)		1		

García Valdés, Raúl (Autonomous University of Barcelona)	1			
González, Jesús (livestock producer)	1			
Grifols, Víctor (Catalan entrepreneur)	1			
Jiménez, Luis (chemist)				1
Joyce, Bernaby (Australian Minister of Agriculture)				2
Jubany, Nandu (chef)			1	
Kogevinas, Manolis (Barcelona Institute of Global Health)			2	
Lechuga, Dani (chef)			1	
Lejarza, Sandra (livestock producer)				1
Leonard, Christopher (journalist)			1	
Llombart, Antonio (Spanish Society of Medical Oncology - SEOM)		1		1
Loomis, Dana (IARC)			1	
López Vivanco, Guillermo (oncologist)				1
Lund, Elizabeth (Instit. for Food Research, UK)			1	
Marcos, Ascensión (FESNAD – Spanish Federation of Nutrition, Food and Dietary Associations)			2	
Marín, Daniel (Frankfurtería Urgell)			1	
Martín Cerdeño, Víctor J. (U. Complutense de Madrid)				1
Martínez, Vanesa (Carinsa, private sector)			1	
Martínez, Venancio (Spanish Society of Paediatric Outpatient and Primary Care)				1
Massagué, Joan (cancer researcher)			1	
Matarraz, Pedro (pig breeder)	1			
Mathijs, Erik (Belgian agro-economist)	1			
Medina, Xabier (Open University of Catalonia)	1			
Neira, María (WHO)				1
Ogle, Maureen (historian)			1	
Ordóñez, Laura (Escuela Int. Naturopatía)	1			
Peiró, Salvador (Ministry of Health, Valencia)				1
Pérez, Isidora (Proava – food sector org.)		1		
Petrini, Carlo (slow food movement)			1	
Pire, Laura (nutritionist)	2			
Porta, Miquel (Autonomous U. of Barcelona)			2	
Prima, Rosa (Young Agriculturists Assoc.)			1	
Puig, Pròsper (Gremi Carnissers trade assoc.)			1	
Rajoy, Mariano (President of Spain)				1
Rovira, Oriol (chef)			1	
Rivera, Fernando (SEOM)	1			

Russolillo, Giuseppe (nutritionist)				1
Saltiveri, Rosend (Unió de Pagesos – farmers’ association)			1	
Sánchez Maldonado, José (Gov. of Andalucía)		1		
Schara, Michael (FECIC)				1
Schmidt, Christian (German Minister of Agriculture)				2
Segura, Luis (IGP Jamón de Serón, ham producer)		1		
Serra-Majem, Lluís (professor of medicine)	2			
Sineiro, Francisco (Univ. Santiago)	1			
Solis, Lluís (IE Business School)	1			
Straif, Kurt (Head of IARC Monographs)	1	1		1
Tejedor, Charles (chef)				1
Unzueta, Elena (Provincial Council of Bizkaia)				1
Vázquez, Miguel Ángel (Gov. of Andalucía)		1		
Wild, Christopher (IARC)	1	1		1
Villariño, Antonio (Spanish Society of Dietetics and Food Sciences, SEDCA)				1

Source: Own preparation.

The same pattern surfaces in a breakdown of the individuals these newspapers tapped for information on the topic in question: of the 72 individuals listed in Table 6, only five were quoted by more than one newspaper.

Although the majority of individuals cited or quoted in the articles related to the WHO report were experts in the fields of science and health, the opinions of government officials or individuals affiliated with the food industry, chefs such as Nandu Juban, Dani Lechuga, Oriol Rovira and Charles Tejedor and representatives of the primary sector such as Sandra Lejarza, Pedro Matarraz and Rosend Saltiveri were also taken into account.

3.2. Content analysis

All four newspapers took the stance that the information released by the WHO was not a novelty per se but rather an additional reminder that consumers should moderate their consumption of meat. There were nevertheless perceptible differences in the coverage of the issue each provided and their choice of sources during the three weeks of reporting analysed.

3.2.1. *El País*

El País limited its initial coverage to a summary of the conclusions contained in the WHO report, highlighting the rigour of the IARC study and providing information such as the number of countries it covered and the experts involved.

Nevertheless, the articles it published on the topic the following day focused more on the potential impact of the study on the processed meat sector than on health issues, beginning with “Concern in the Meat Industry Regarding the Potential Impact of the WHO Warning”, in which sector professionals questioned the credibility of the report.

Table 7. Titles and genres *El País*.

Date	Title	Genre
27/10/2015	-La OMS afirma que hamburguesas, salchichas y embutidos causan cáncer (The WHO Confirms that Hamburgers, Sausages and Cured Meats Cause Cancer)	News story
	-¿Qué alimentos generan tumores? (What Foods Cause Tumours?)	Breakout
28/10/2015	-El sector cárnico teme el posible impacto del aviso de la OMS (Concern in the Meat Industry Regarding the Potential Impact of WHO Warning)	News story
	-¿Cuánta carne comemos? (How Much Meat Do We Eat?)	Breakout
	-Que el público decida en quién confiar: la industria o nosotros (Let the Public Decide Who to Trust: The Industry or Us)	Feature story
	-¿Toda la comida produce cáncer? (Does All Food Cause Cancer?)	Feature story
	-Los otros demonios de la dieta (The Other Demons in Your Diet)	Breakout
	-Sanidad mantiene su recomendación de consumo (Health Ministry Maintains Consumption Recommendations)	News story
29/10/2015	-El excesivo consumo de carne deja huella (The Ecological Footprint of Excessive Meat Consumption)	Feature story
31/10/2015	-La era de la carne (The Meat Era)	Interpretive article
01/11/2015	-Carnívoros de nuevo cuño (New-Age Meat-Eaters)	Feature story
	-Clientes mejor informados (Better-informed Consumers)	Feature story

Source: Own preparation.

The economic weight of this sector was alluded to in a breakout titled “How Much Meat Do We Eat?” that noted consumption in Spain was 50% below the level WHO experts considered dangerous.

This article was balanced by another on the same page titled “Let the Public Decide Who to Trust: The Industry or Us”, in which Kurt Straif, head of IARC monographs, defended the report and called upon the meat industry take a transparent and objective position on the issue.

The following page contained a third article “Does All Food Cause Cancer?” in which various experts criticised the manner in which the health risks contained in the report had been articulated.

Two related items published by *El País* on October 29 and 31 more in accord with the WHO report approached the issue from a fresh perspective not addressed by the other three newspapers in the feature article “The Ecological Footprint of Excessive Meat Consumption” and the interpretative article “The Meat Era” by Martín Caparrós, author of the book *Hambre* (Hunger), both of which addressed the issue from the perspective of sustainability and social justice.

The final related content published by this paper during the period examined was an article in its November 1 Sunday business supplement, the cover of which bore the headline “The Right Amount of Red Meat” followed by a subhead reading “the

industry considers recommendations to lower processed meat consumption alarmist but acknowledges the need to develop healthier products”.

The economic importance of the sector was one of the arguments underpinning “New-Age Meat-Eaters”, another article in the same issue in which various consumers’ organisations defended the meat industry, downplayed the negative health effects of meat products and questioned the WHO’s comparison of meat consumption to smoking.

3.2.2. *El Mundo*

Table 8. Titles and genres *El Mundo*.

Date	Title	Genre
27/10/2015	-¿Carne que provoca cáncer? (Meat That Causes Cancer?) -¿Dejo de comer carne? (Should I Stop Eating Meat?) -Tabaco: mucho mayor riesgo (Tobacco: A Much Greater Risk)	News story Breakout News story
28/10/2015	-La calidad de los productos andaluces nada que ver con la comida basura. (The Quality of Andalusian Products Has Nothing In Common with Junk Food) -Una alarma innecesaria (A Unnecessary Warning) -Hoy en día, en muchos casos el cáncer es una enfermedad crónica (Many Cases of Cancer Today Are Chronic Illnesses)	News story Breakout Interview
01/11/2015	-Los datos de las cunas del embutido desmienten a la OMS (Statistics from the Heartland of Cured Meat Products Refute WHO [Claims])	Report
02/11/2015	-Hosteleros critican a la OMS y animan a comer carne (Restaurateurs Criticise the WHO and Urge the Public to Eat Meat)	News story

Source: Own preparation.

Of the four newspapers examined, *El Mundo* ran the fewest articles on the IARC findings. The content it published on the subject was supported by arguments that stressed the negative impact the WHO report could have on the meat industry. The titles of the news story and breakout it ran on October 27 “Meat that Causes Cancer?” and “Should I Stop Eating Eat?” had an alarmist but questioning tone.

The first downplayed the importance of the WHO findings with quotes about the benefits of meat from representatives of organisations such as the Spanish Society of Medical Oncology and the Spanish Nutrition Society. It also contained comments from meat industry professionals who questioned the credibility of the WHO report and attributed the increased risk of cancer it purported to demonstrate to other unknown factors. Another story it ran the same day, “Tobacco: A Much Greater Risk”, compared the risks of cancer supposed by meat consumption and smoking.

El Mundo concentrated its defence of the meat industry in its regional sections devoted to Seville and Valencia. One news item falling into this category published on October 28 under the catchy title “The Quality of Andalusian Products Has Nothing In Common with Junk Food” contained commentaries by Andalusian officials praising the local meat industry and regional food products. Several sources

quoted questioned the conclusions of the WHO study and expressed concern about the impact it could have on the food sector. The title of a related breakout containing statements by spokespeople from the Jabugo and Jamón de Serón producers' associations "An Unnecessary Warning" sent a clear message of where the paper stood on this issue.

In an interview published the same day, oncologist Manuel Esteller suggested the importance of the findings was relative, noting, "that many household incomes depend on this sector and meat contains essential nutrients".

On November 1 the Valencia section of *El Mundo* featured "Statistics from the Heartland of Cured Meat Consumption Refute WHO [Claims]", a report casting additional doubt over the IARC findings that cited a study by Atlas VPM researchers from the Centro Superior de Investigación en Salud Pública that had found the incidence of colorectal tumours in areas of Spain known for their high levels of processed meat consumption was no different than that in other areas of the country where processed meat products made up a lesser part of the local diet. This story contained the assertion by lead researcher Salvador Peiró that "it is clear that gastronomy is not a determining factor in the development of colorectal or stomach cancer".

An article published in the Seville section of the paper on November 2, "Restaurateurs Criticise the WHO and Urge the Public to Eat Meat" conveyed a similar perspective.

3.2.3. La Vanguardia

La Vanguardia was critical of the IARC report. The first news item it published on the subject, "Processed Meat Causes Cancer According to the WHO", was peppered with scientific evidence underscoring the health benefits of balanced diets including meat. The general thrust of this piece, which questioned the validity of the WHO report, was supported by statements from meat industry professionals and health experts affiliated with AECOSAN and the Sub-Directorate of Health Promotion of Catalonia (Promoció Salut Catalunya).

It also contained an assertion by the North American Meat Institute that "the report [sic] defies common sense and many more studies showing no correlation between meat and cancer" and a statement by The National Cattlemen's Beef Association that pointed out the division among the 22 members of the IARC panel on the issue, something the "rarely ever happens" as "the IARC looks for consensus".

Secondary news stories published the same day were also crafted to seed doubt in the minds of readers concerning the WHO findings. In one titled "An Overly Serious Joke", several well-known Spanish chefs took issue with various aspects of the study.

"A Closer Look at Fat and Additives in Meat Products", published on October 28, cited experts who questioned the degree to which meat per se was responsible for triggering cancer and suggested that fat and food additives might be more important factors. Although this was accompanied by a feature article titled "Why the WHO Is Looking at Meat" that confirmed the credibility and rigor of the study, the following page contained yet another item titled "The Meat Industry Fears a Drop in Sales, Especially at Christmas" that focused on the negative impact the report might have on the sector.

Table 9. Titles and genres *La Vanguardia*.

Date	Title	Genre
27/10/2015	-La carne procesada causa cáncer según la OMS (Processed Meat Causes Cancer According to the WHO) -Full English breakfast for two please. -Una broma demasiado seria (An Overly Serious Joke)	Interpretive article News story Feature story
28/10/2015	-La grasa y los aditivos de la carne, bajo la lupa (A Closer Look at Fat and Additives in Meat Products) -Cómo se hace un buen embutido (What Goes Into Good Cured Meat) -Por qué la OMS se mete con la carne (Why the WHO Has It In for Meat) -Bocata y plato combinado, ¿ahora qué? (Sandwiches and Lunch Platters, What Next?) -Los catalanes comen casi tanta carne como verdura (Catalans Eat as Much Meat as Vegetables) -El sector cárnico teme un descenso de ventas, sobre todo en Navidad (The Meat Industry Fears a Drop in Sales, Especially at Christmas)	Feature story Breakout Feature story Feature story Feature story Breakout News story
29/10/2015	-Carnívoros en 50 años (Meat-eaters in Fifty Years)	News story
31/10/2015	-La OMS aclara que se puede comer carne con moderación (WHO Admits That Moderate Meat Consumption Is Acceptable)	News story
01/11/2015	-Alimentos con mala fama (Foods With a Bad Reputation) -La OMS descoloca a la industria cárnica (The WHO Knocks the Meat Industry) -Una industria dura de roer (A Hard-to-Chew Industry)	Report Feature story Report
16/11/2015	-El creador de 'slow food' advierte que "la comida no es una mercancía" (Slow Food Founder Warns "Food is Not a Commodity")	Feature story

Source: Own preparation.

On October 29 *La Vanguardia* published “Meat-Eaters in 50 years”, an article defending the inclusion of meat in the family diet in which FESNAD president Ascensión Marcos counselled moderate consumption of red and processed meat while stressing the nutritional value of both and a group of paediatricians asserted, “children should eat meat between five and eight times a week”.

From this point on, *La Vanguardia* adopted a looser stance regarding the relative perils and benefits of meat consumption. On October 31 it published “The WHO Admits That Moderate Meat Consumption Is Acceptable”, an article that qualified the tenor of the original WHO announcement. The following day it ran “Foods With a Bad Reputation”, a lengthy report listing a series of foods that had been at one time or another wrongfully considered injurious to human health. One of the last news items featured by this newspaper on the topic was “The WHO Knocks the Meat Industry”, which focused once again on the report’s ramifications for the meat industry and concluded by quoting a speaker who had trivialised the WHO findings at a AECOC

conference with the joke “since life is a sexually transmitted disease that is invariably 100% mortal, how important is the news that red meat could possibly kill you?”

3.2.4. *El Correo*

Table 10. Titles and genres *El Correo*.

Date	Title	Genre
27/10/2015	-Comer muchas salchichas y embutidos aumenta el riesgo de cáncer (Excessive consumption of Sausages and Cured Meat Increases The Risk of Cancer)	News story
	-El día que comas chuleta, toma ensalada y una fruta de postre (If You eat a Cutlet, Eat Salad Too and Choose Fruit for Dessert)	News story
	-La industria cárnica española aporta el 2% del PIB (The Meat Industry Accounts for 2% of Spain's GDP)	News story
	-Lo que hay que saber (What You Need to Know)	Breakout
28/10/2015	-¿Jamón?, si claro, pero sólo una tapa al día (Ham? Of course, But Only a Bite a Day)	Feature story
	- El Ministro Alonso receta sentido común y una dieta equilibrada Minister Alonso Recommends Common Sense and a Balanced Diet)	News story
29/10/2015	-Los niños deben comer carne entre 5 y 8 veces por semana (Children Should Eat Meat Between 5 and 8 Times a Week)	News story
	-No hay ningún motivo para cambiar la dieta (No Need To Change Your Diet)	News story
01/11/2015	-Lemoa exporta hamburguesas de baserri de primera calidad (Lemoa Exports Quality Farm-Fresh Hamburgers)	Feature story
04/11/2015	-El consumo medio de carne por vizcaíno lejos de los márgenes de riesgo (Meat Consumption in Bizkaia is Well Below Established Risk Level)	News story
	-El menú nacional (The National Diet)	Report
11/11/2015	-Lo que más provoca cáncer es vivir (Living Is the Number One Cause of Cancer)	Feature story

Source: Own preparation.

El Correo coverage of the WHO's October 27 announcement included the main conclusions of the study and a comprehensive Q&A. This newspaper, which took the position that the IARC report offered little in the way of new revelations, sought to calm public anxiety by means of statements that downplayed the connection between meat consumption and cancer.

Although the title “Excessive consumption of Sausages and Cured Meat Increases The Risk of Cancer” might have inspired a degree of fear, nothing in the article that followed—from oncologist Guillermo López Vivanco's observation that “some people are born with a genetic predisposition to cancer and some are not” to the

statement by the IARC's Kurt Straif that the risk of developing cancer was small but "increases with the amount of meat consumed"— would be likely to compel anyone to give up meat entirely.

This daily pointed out the report's potential economic impact the day of its release in a breakout titled "The Meat Industry Accounts for 2% of Spain's GDP" in which a CLITRAVI spokesperson warned of the "inadvisability" of attributing higher cancer risk "to a single factor".

However, the paper softened its initial alarmist tone the following day in "Ham? Of course, But Only a Bite a Day", an article in which chemist Luis Jiménez observed, "the ham eaten in the United States is very different from ours" and nutritionist Julio Basulto confessed that "no one really knows why meat products cause cancer". In another story on the same page the Australian Minister of Agriculture dismissed the report as a "farce" not worth paying attention to.

The health benefits of meat were also the subject of an October 29 article titled "Children Should Eat Meat Between 5 and 8 Times a Week", in which the president of Spanish Society of Paediatric Outpatient and Primary Care stressed the importance of meat in childhood development and Spanish President Mariano Rajoy warned against overreacting to the WHO study.

The final related articles published by *El Correo* conveyed reassuring messages. "Lemoa Exports Quality Farm-fresh Hamburgers", for example, underscored the quality of Basque meat products. A November 4 story reporting that per capita meat consumption in the Basque Country was well below the IARC's threshold of risk also contained a public appeal by Elena Unzueta, spokesperson for the Provincial Council of Bizkaia, "to stay calm" and continue to support the Basque meat industry.

The last item examined, a feature story published on November 11 titled "Living Is the Number One Cause of Cancer" quoted oncologist Ricardo Fernández, who called upon consumers to monitor their meat consumption but added, "watch what you eat, but if you have an occasional urge for a cutlet, go ahead and have one. You can't spend your entire life avoiding everything that does you harm".

3.3. Frames and arguments

Content analysis revealed two basic types of journalistic framing devices – one critical and the other favourable. Articles employing the latter were few in number and mostly published during the first few days following the release of the WHO report. This perspective, which was most apparent in content associating meat consumption with a higher risk of developing cancer and the social and environmental consequences of meat production, accounted for a mere 20% of the content on the topic published during the period examined.

Although each newspaper handled this issue differently, the various approaches they adopted evolved over time. The frames all four employed most frequently to downplay the import of the WHO health warning can be divided into five basic categories: balance and/or moderation; economic impact; conflicts of opinion; scepticism and/or lack of credibility; and the health benefits of meat.

Table 11. Principle frames detected in content related to the WHO report.

	El País		El Mundo		La Vanguardia		El Correo		Total	
	n	%	n	%	n	%	n	%	n	%
Types of frames										
Link between meat and cancer	6	28.5	3	15.0	5	21.7	3	14.2	17	20.0
Balance / moderation	6	28.5	4	20.0	8	34.7	7	33.3	25	29.4
Economic impact	3	14.2	4	20.0	2	8.6	1	4.7	10	11.7
Conflicts of opinion	1	4.7	2	10.0	1	4.3	1	4.7	5	5.8
Scepticism / lack of credibility	2	9.5	3	15.0	3	13.0	5	23.8	13	15.2
Findings poorly articulated	3	14.2	1	10.0	1	4.3	1	4.7	6	7.0
Benefits of meat consumption			3	15.0	3	13.0	3	14.2	9	10.5
Total	21		20		23		21		85	

Source: Own preparation.

The dominant frame was balance and/or moderation. In response to the WHO advisory linking meat consumption and cancer, all four newspapers downplayed the potential dangers of eating red meat and processed meat. Sources with scientific and health credentials played a key role in these efforts. *La Vanguardia* relied most on this framing device, which was detected in 34.7% of the news items it published on the topic. On October 27, the day the WHO report was released, this paper ran an article in which nutritionist Ramon Estruch, coordinator of a study on the efficacy of the Mediterranean diet in the prevention of cardiovascular diseases published in the prestigious *New England Journal of Medicine*, expressed surprise at the conclusions contained in the IARC report.

One third of the news items published by *El Correo* were framed from a balance and/or moderation perspective. Like *La Vanguardia*, it adopted what would be its overarching reporting perspective the day the report was released, on which it published nutritionist Javier Aranceta’s advice that “every time we eat foods such as meatballs, sausages or cutlets we should accompany them with a nice salad”.

The other frames detected were more widely distributed. *El Mundo* and, to a lesser degree, *El País* quoted sources focusing on the potential economic impact of the WHO report. On October 28 *El País* ran an article by Cristina Delgado that began with the statement “Spain is a meat country and the WHO warning against excessive consumption of processed foods, including red meat, constitutes a blow to the image of one of the main drivers of the Spanish food industry”. The same day, an article in the Andalucía section of *El Mundo* featured regional government spokesperson Miguel Ángel Vázquez’s assertion that the findings “supposed a threat to a leading sector recognised and admired around the world for the quality of its products”.

Scepticism/lack of credibility was the second most common framing device detected in content published by *El Correo*. The two frames most frequently employed by *El País* were “link between meat and cancer” and “balance / moderation”, each of which surfaced in 28.5% of that newspaper’s coverage of the issue in question. The link between meat and cancer was the second most evident frame in parallel reporting provided by *La Vanguardia*. A prime of example was “A Closer Look at Fat and Additives in Meat Products” published on October 28, in which Miquel Porta,

Professor of Public Health at the Autonomous University of Barcelona, stated, “We need to know more about how meat is treated to enhance its visual appeal and shelf life. There is a lack of transparency concerning the mixing of meats and other ingredients, especially in the case of low-quality processed meat products”.

4. Discussion and conclusions

The October 26, 2016 WHO press release regarding IARC research on the carcinogenicity of red and processed meats received wide coverage in the newspapers examined for this study. Although all of them treated the IARC findings as front-page news, they often framed this information from different perspectives. In contrast to the other papers, *El Mundo* frequently ran interrogative titles such as “Meat That Causes Cancer?” and “Should I Stop Eating Meat?” that cast doubt on the credibility of the report and established a tone it would maintain during the rest of its coverage of the issue.

El País was the only newspaper to address other problems linked to meat consumption such as environmental degradation and social inequity.

Following the initial tone of alarm that all conveyed, the newspapers examined made a concerted attempt to downplay the seriousness of the report and, in some cases, question its credibility. An impressive number of individuals (72) were tapped as sources to this end. These included medical and scientific experts who stressed the negative impact fraudulent practices and the recession could have on the Spanish meat industry and government spokespeople, most of whom held positions at the region level, who were also frequently quoted. Representatives of industrial and trade sectors most likely to be affected by the IARC findings quoted in these articles for the most part attempted to wrest importance from the findings and praised the virtues of a well-balanced diet.

Although 29.4% of the articles in the sample were framed from a balance/moderation perspective, the proportion falling into this category varied from one paper to another: they constituted 34.7% in the case of *La Vanguardia* but only 20.0% in the case of *El Mundo*. The second most frequently employed frame focused on the link between meat and cancer (the dominant theme of 20%) and the third most frequently employed centred on scepticism and/or lack of credibility (detected in 15.2%). These results fall in line with the findings of previous studies such as those conducted by Reagan et al. (2016) in Ireland and Ortega et al. (2015) in the United States on the relationship between media coverage of food issues and consumer habits that have indicated alarming media coverage tends to confuse consumers and/or condition the criteria they apply when they shop.

Meat industry spokespeople and others who addressed the economic ramifications of the report each accounted for a quarter of the sources quoted. *El Mundo* and, to a lesser extent, *El País*, tended to frame articles from the perspective of economic impact more than the other newspapers examined.

A number of articles mixed scepticism towards the report with the idea that consumption of local meat products somehow constituted a lesser degree of risk. This approach to the topic was most evident in articles published in *El Correo* and the Andalusian and Valencian editions of *El Mundo*.

The four newspapers examined published a total of 54 news items related to the WHO report during the three-week time frame analysed. Of the journalists responsible for this content, only two wrote more than two articles. The average number of articles per journalist (1.3) indicates that generalists with a fair to middling knowledge of the topic being addressed rather than food experts produced the bulk of coverage provided. It was also striking that 30% of items placed in interior sections did not carry a byline.

This study also reveals that newspapers' choice of sources strongly influenced the ways in which they subsequently framed the news articles they published on the IARC report and its ramifications.

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