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Review

Media systems beyond national boundaries: Towards a new paradigm?

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In recent decades, media systems went through deep transformations, due to social phenomena such as globalization and digitalization; thus, they are to rewrite their boundaries, closely related as those of national states in which media operate. Since the Four theories of the press, studies on communication systems assumed the nation as a privileged frame for the analysis of the relationship between media, political and social structure; yet, what happen when new technologies, mass migration or even financial and institutional supranational bodies burst redefining media production and national cultural identity? Can we still consider national view of media system valid and to what extent can we talk about transnational media systems? Which dimensions are better able to explain the change? In this article, I try to answer these questions from a macro perspective and with a multidimensional approach in order to identify variables useful for defining media systems beyond national boundaries. A new model for studying media systems untied from administrative and geographical states should take into account:

1) The internationalization of media ownership, that is foreign investments in national media organizations and vice versa;
2) The technological development, that encourages circulation of media contents and information on a large and global scale;
3) The national legislation on media, where we can use to trace the degree of supranationalisation by the laws; d) the language, that is the ability of cultural and linguistic to unify through the media communities and groups around the world.

Key words: National media systems; transnationalization; multidimensional approach; globalization; digitalization.

INTRODUCTION

In recent decades, two important phenomena are changing the society in which we live: globalization and digitalization. The simultaneous action (Colombo 2005, viii) of these two processes produced major changes that affected the world since the Sixties and the Seventies of the twentieth century; besides, constant flows of people, goods, capital and information are able to reconfigure the spatial and temporal dimensions of the world (Appadurai, 1990) which are typical of the contemporary age.

These processes invested the mass media, that are exposed to the threats and the opportunities of global and digital world; this leads scholars to investigate the

concept of "national media system" and question about the possible change of paradigm. In Western countries, the development of mass communications has often been correlated with that of national democracies, as exemplified by concepts such as Habermas' "public sphere" (1962) or Anderson's "imagined community" (1983). Mass media and national states have been intimately linked with each other; thus, communications systems have been intertwined, over the years, with institutional, economic and cultural structures of the countries belonging. This led to study and analyse media systems as finite and territorially defined, coinciding with the boundaries of the nation-states.

In this article, I try to describe the structural changes that lie ahead of the national media systems in a time of new social and economic geographies (Gillespie and Robbins 1989) and rewriting of political and economic boundaries of the globe, due to mass migration, supranational organisations and development of new information technologies. First of all, I will provide an overview of the existing theoretical and empirical resear-ches that have taken into account the relationship between media and nations; for many decades, their reci-procal influence has been the ground where commu-nication research consolidated and only in recent years structural changes and transformations of media systems led to talk about transnational media. Then, in the central part of this article, I will focus on the need to observe the media from a multidimensional perspective: this approach, variously used by several scholars, has often been applied within the national media systems, but not in a supranational way. Thus, I will try to trace some key dimensions to understand media systems beyond national boundaries, because in the contemporary world the weight of the nation-states is weakening and the media are even more characterized by global and transnational flows and exchanges that imply to revisit traditional perspectives and explain the nature of media systems untied from administrative and geographical states and boundaries.

Media systems beyond national borders

Since the pioneering work entitled *Four theories of the press*, done by Siebert et al. (1956), the variable con-sidered for the study of the relationship between mass communications and social structure has been national state. Two fundamental questions got through the entire book: "Why is the press as it is? Why does it apparently serve different purposes and appear in widely different forms in different countries?" (Siebert et al.,1963: 1). The work of these three American scholars is considered the bearer of great normative value, but presents some theo-retical gaps especially related to the historical context of the Cold War, so it seemed the main concern of the authors was the "dichotomy between the contending U.S.

and Soviet models" (Hallin and Mancini 2004: 10). Other scholars (Nerone 1995; Sparks and Reading 1998) criticize theoretical and methodological work of *Four theories* as too tied to the idea that the media reflect the beliefs of the population and as the comparative approach too broad and generic.

The inheritance of the book has crossed much of the twentieth century: many scholars (Altschull 1984; Martin and Chaudary 1983; Merrill 1974; Picard 1985) worked several revisions and updates without questioning the theoretical and regulatory framework. Only since the eighties, studies of media systems have begun to shift attention from macro-geographical theoretical scenarios to the empirical analysis focused on single national media. Two studies were particularly emblematic in this regard: that of Alexander (1981) - who began to compare the development of journalistic professionalism and autonomy in the United States with that of European countries like France and Great Britain – and the work by Hallin and Mancini (1984) on comparative analysis of U.S. and Italian news of the early Eighties. Beyond the results returned, these researches have paved the way for a flourishing tradition of studies that, focusing on different parameters, allowed to grasp the peculiarities of a single national media system and its relationship with social and political structures. The methodological innovation introduced by some authors who combined a macro perspective with a micro perspective (Example, Gunther and Mughan 2000) did not call into question the national and state-centric object of investigation. The same tripartite division operated by Hallin and Mancini (2004), who identified three different models of media system in respect of eighteen Western democracies, is based on the adoption of "four major dimensions according to which media systems in Western Europe and North America can usefully be compared:

(1) The development of media markets, with particular emphasis on the strong or weak development of a mass circulation press;
(2) Political parallelism; that is, the degree and nature of the links between the media and political parties or, more broadly, the extent to which the media systems reflects the major political divisions in society;
(3) The development of journalistic professionalism; and
(4) The degree and nature of the state intervention on media system" (Hallin and Mancini 2004: 21).

As may be seen, these four dimensions consider the nature of media systems as circumscribed within the borders of the nation-state; in fact, all the variables reflect an international order based on the nation as separate entity, each with its own specific economic, institutional, political and professional ethics. This perspective does not seem to take into account the "structural and institutional transformation of media systems" (Chadha and Kavoori, 2005: 86) in an era of globalization and

internationalization, as well as the revival of claims trends and local interests. If the compass has guided the studies and the definition of media systems since *Four theories of the press* has been the national state, nowadays the nation "is a declining institution worldwide, due to the influence of globalization, communications networks, and modern technology" (Howison, 2006: 7). As Colin Sparks (2007) argued:

If the media landscape was limited by the boundaries of the state, and if the state was the force that had power to control the nature and content of the media, then it was clear what the site of political action should be: to influence the media one needed to influence the state (Sparks 2007: 131).

A multidimensional approach

The future of the nation-state has been the subject of analysis and reflections by various scholars of different disciplines: while some of them claim the gradual disappearance of national states (Van Creveld 1999; Waters 1995; Albrow 1996), others talk of simply declining (Mann 1997; Weiss 2000). Certainly, as Raymond Williams (1983) already argued in the early Eighties, "the nation state, in its classic European forms, is at once too large and too small for the range of real social purposes" (Williams 1983: 197-8); similarly to the states, even the media systems identified by conventional national borders are experiencing a process of downsizing and loosening of mutual ties (Curran 2002: 31). Therefore, what is fundamental is a "remapping of media spaces" (Chalaby 2010: 101) that involves a rewriting of the perimeters within which the communication systems have been studied thus far.

Then, I propose a rereading of national media system in the lens of some dimensions that summarize the process of *supranationalization* of mass communications in a given country. To fully understand this process, we have to take into account a multidimensional approach: in fact, the integration of different variables and dimensions helps to bring out the mutual dependency between media systems and social context in which they operate, functioning as a cure for reductionist and deterministic drift, as underlined by Schudson and Waisbord (2005). A multidimensional approach is necessary because in contemporary society the influence of media (above all in their new digital version) has been increasingly grown, weakening the weight and the role of others systems and agencies, as pointed out by «media dependency theory» (Ball-Rokeach and De Fleur 1976). As Colombo and Carlo (2006) stated, the new media landscape is going through a phase of change that makes necessary the overcoming of technological approach. If for a long time, in fact, the technological dimension has been the main aspect able to explain the evolution and transformation of

mass-media, now the new dynamics of convergence and hybridization suggest to take into account other dimensions, such as socio-economic, political and cultural variables. The authors identify four frameworks that are very related each other:

1) The technological framework, that is the development of technical supports;
2) The economic framework, that concerns the market, financing and production mechanisms;
3) The institutional framework, that refers to the laws and the relationship between media and political system;
4) The cultural framework that concerns the content and the forms of transmission. In their multidimensional model, the authors consider "a single medium in a given historical period as a momentary equilibrium between a multiplicity of social dimensions that go beyond the medium itself" (Colombo and Carlo 2006, Figure 1).

Four dimensions for supranational media systems

A transnational media system collects multiple aspects of everyday life; therefore, a multidimensional approach helps to decline the functioning, the organization and the diffusion of mass media on a global scale and prevent the revival of a strictly national point of view. Nevertheless, the global and international flow of news and information doesn't remove the local and national approach since in all countries the media "see the world through a narrow lens of geography and national interest" (Stevenson 1998: 115).

The same opinion is expressed by Örnebring (2009) who suggests the existence of a "national filter" that contradicts the vision of globalization as universalization and homogenization. However, since the last decades of the twentieth century, new transnational media grew in many Western areas, especially in Europe; a transnational television is a "television that in its technology, ownership, distribution of programmes and audiences works through the boundaries of nation-states and language communities" (Barker 1997: 45). Many experiments and projects of transnational television arose in Europe during the Eighties, such as European broadcasting union (EBU), launched by five European countries; the Francophone *Tv5Monde* which linked some public and commercial channels around the French language; *3Sat*, with the involvement of three public channels of Germany, Switzerland and Austria, an example of transnational television based on common language and geographical contiguity; *Euronews*, developed through collaboration among Italy, France and Spain and soon became an important *all news* commercial player in Europe.

Anyway, if the literature and the case studies about transnationalization of media system are large and widespread, what has been poorly treated by social and
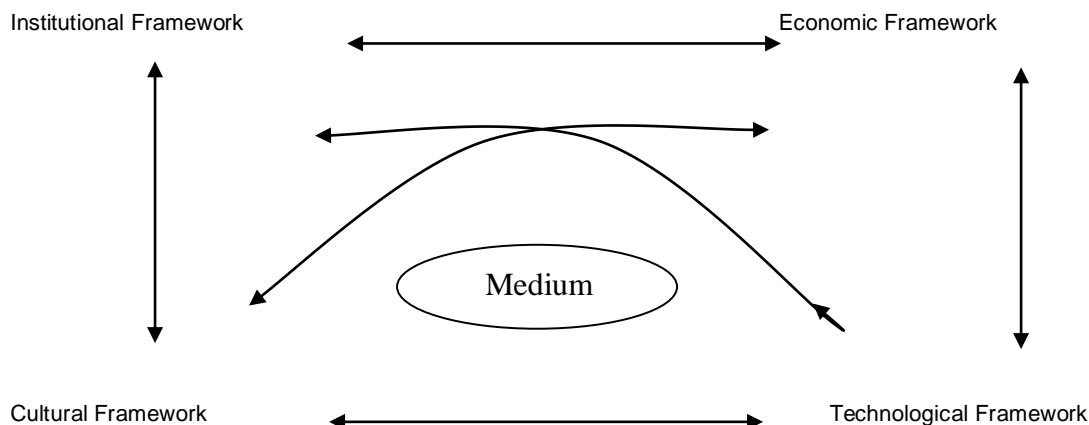
Institutional Framework

Economic Framework

Medium

Cultural Framework

Technological Framework

Figure 1. The multidimensional approach by Colombo and Carlo

Communications scientists is the concept of *supranationalization* of media, that is, the way each national media system goes over national boundaries. Denis McQuail (1983) defined a media system as:

"the set of media organizations and activities, together with their own formal or informal rules of operation and sometimes legal and policy requirements set by the society" (McQuail 2010: 59);

For this reason, since media build a relationship with social, political and economic structure, they "should reflect in their structure and content the various social, economic and cultural realities of the societies (and communities) in which they operate, in a more or less proportional way" (id.: 199). Then, we can say that it is very difficult to "understand the news media without understanding the nature of the state" (Hallin and Mancini 2004: 8).

In the contemporary world, where the power of influence of the national states is limited by supranational institutional and economic bodies and the birth of people communities that transcends the national boundaries, even media systems have to rewrite their relationship with the structure of the society (or the societies) in which they operate. Thus, I try to apply the multidimensional model drawn by Colombo and Carlo not only to the single medium, but to the whole media system, with reference to the degree of enfranchisement from national setting or resistance of national elements. Focusing on a macro perspective that is fundamental to grasp the structural collapses of media system in an era of new economic and political borders, the aim is to integrate and evaluate many dimensions, which in turn lead different variables (Garnham 1990). The frameworks identified by the multidimensional model above could be used to draw the lines of a new paradigm for the analysis of media systems in a globalized world: economic, technological, institutional and cultural dimensions are four areas able

to describe and measure globalization (Raab et al. 2008) and, in our perspective, they are able to show the trajectories of *supranational* media systems as shown in Figure 2.

The economic framework affects the internationalization of media ownership that is, the degree of participation of national companies in foreign media industries and the degree of openness to foreign investors in national media sector. The technological framework concerns the dimension of technological development, with reference to the impact of the internet in a country and the diffusion of foreign sites, providers, on line journals among the users. The institutional framework deals the laws on media, with a look to the geographical references and ties with national boundaries within the norms. At last, the cultural framework includes the dimension of language, concerning the diffusion of media in language communities living in other countries.

Internationalization of media ownership

The first dimension reflects one of the most important aspects of the globalization and fits into the current of critical theory; with the end of the opposition of the world in two blocks, an integration among different economic models developed and generated a competition not only within the states, but on a worldwide ground restricting the autonomy of the countries (Lacher 2006). In media sector, the internationalization of the ownership declines in two opposite ways; on the one hand, we have to consider the ability of a national media system to attract foreign investors, as for example occurred in Spain since Nineties with the openness of the most important commercial broadcasters to participation of foreign media industries, above all from Italy and Mexico; on the other hand, there is the expansion of national media in foreign contexts, that is the ability of media organizations to gain market share through the entrance in media companies
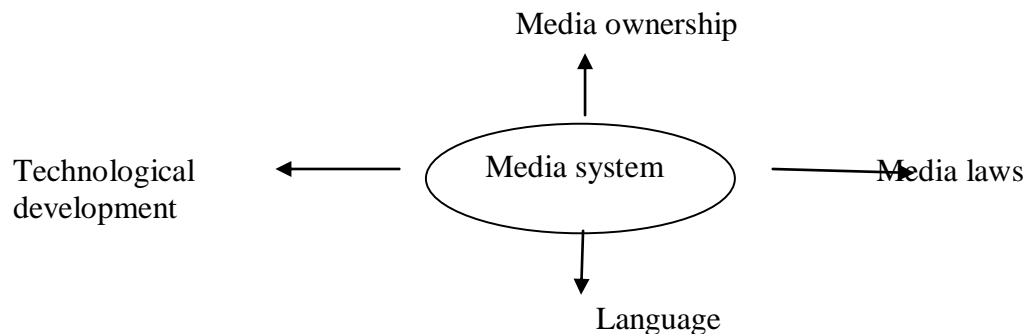
Media ownership

Technological
development   Media system   Media laws

Language

Figure 2. The multidimensional approach to supranational media systems

from other countries, as done by Italian *Fininvest* (later renamed *Mediaset*) during the Nineties, with acquisition of Spanish commercial broadcasters, and recently in emerging markets such as China, India, North Africa, South America.

Technological development

The second framework I consider is represented by technological development. The impact of information and communications technology on globalization has been disruptive; although it should be rejected a deterministic vision, there is no doubt that modern information and communication technology (ICTs) influence communications between individuals, organizations and communities by effectively rendering physical space and distance irrelevant. Thus, although the introduction of technology is not unique in itself, recent ICTs have fundamentally altered the scope (widening reach of networks of social activity and power), intensity (regularized connections), velocity (speeding up of interactions and processes), and impact (local impacts global) of transformations (Mills and Blossfeld 2005, 6). The diffusion of internet and new digital media modified the behaviour of both producers and consumers, giving birth to concepts such as convergence, personalization, disintermediation that shape the relationship between *users* and media contents, languages and practices. In this perspective, the dimension of technological development could help to define a supranational media system by observing the geographical origin of privileged web sites and providers; in many countries, barriers as language, culture and media tradition represent national resistance, above all in the field of web sites of media companies, that reaffirm national identity in the global information flows.

Media laws

Another aspect useful to define how media systems go

over national boundaries is the institutional one. In the era of globalization, politics acquired "a new configuration" (Milardovic 2008, 38) and new bodies and decision-making centers which transform state democracy in supranational democracy – such as European Union – were born. Thus, even the laws that regulate media sector have been subjected in recent years to review and reforms in line with the changes in the supranational legislation. In Europe, for instance, since the Eighties media policies at a continental level privileged deregulation and liberalization that influenced laws of countries; however, as Levy (1999) underlined, despite several attempts for shared European policies, a significant divergence in action and regulation of media at national level remains. Regulatory developments of media laws adopted by single countries shows how a long phase of national or sub-national setting (the reinforcement of public service broadcasting, the grants to local government bodies, the definition of a national identity) has been followed by a progressive openness to European directives towards a supranational media space.

The language

The last dimension I consider is that of the language: a national media system could be rethought around shared language with other countries, even geographically distant, that creates new boundaries and relationships. The language is a "crucial divider of media markets" (Jan 2009: 68) and could represent an aspect of unification regardless of the spatial proximity; this dimension invests some cultural and historical issues, such as the spread of a language in the world or the extent of the migration that rooted elements of a society in other contexts, and even media issues, as the spread of mass media in ethnic communities around the world. The language framework invites us to look at media systems from the perspective of a "common geolinguistic sphere" (Sinclair et al. 1996): if culture and language represent natural barriers against homogenizing trend of globalization, they could also become vehicles for the unification of communities

disconnected from territorial tie, but re-aggregated around linguistic affiliation through the media. An interesting case, in this sense, is about Spanish media system: the development of Spanish-language media in Latin America or United States favoured the building of a Hispanic media system, based on shared language and able to create products, genres and formats containing typical features of Latin world and then exportable in other countries.

CONCLUSIONS

In this article I tried to rethink the concept of "media system" beyond its traditional national formulation and identify some general criteria for the definition of a supra-national view of it. For many years, studies and analysis about media systems have been focused on national states as privileged framework; what Beck (2004) called "methodological nationalism" led theoretical and empirical observations of scholars about the concept of media system. However, given the historical phase charac-terized by globalization and digitalization, the national view is no longer able to explain the complex nature of media and their relationship with social, economic, political, cultural or technological systems. Thus, as many authors began to study mass media from a multi-dimensional perspective, I tried to apply this approach to the building of a new paradigm for the understanding of *supranational* media systems. Following the multi-dimensional model elaborated by Colombo and Carlo about the study of digital media, a new approach to media systems has to take into account some variables as the internationalization of media ownership, the technological development and choices and practices of the users, the laws on media, the language as crucial aspects for the redefinition of the boundaries that delimit new conceptions of media systems untied from the traditional and historical perspective.

Conflict of Interests

The author have not declared any conflict of interests.

REFERENCES

Albrow M (1996). The global age. State and society beyond modernity. Stanford: Stanford University Press.
Alexander JC (1981). "The mass news media in systemic, historical and comparative perspective", in Katz E, Szeckso T (eds.), Mass media and social change. Beverly Hills: Sage. pp.17-51.
Altschull JH (1984). Agents of power: the role of the news media in human affairs. New York: Longman.
Anderson B (1983). Imagined communities. London: Verso. http://www.personal.psu.edu/sam50/readings521/BA_Imagined-Communities.pdf
Appadurai A (1990). "Disjuncture and difference in the global cultural economy", in Featherstone M (ed.), Global culture. Nationalism, globalization and modernity. Newbury Park: Sage. pp.295-310

Barker C (1997). Global television. An Introduction. Madlen: Blackwell. http://eu.wiley.com/WileyCDA/WileyTitle/productCd-0631201505.html
Beck U (2004). Der kosmopolitische blick oder. Krieg ist Frieden. Frankfurt am Main: Suhrkamp Verlag.
Chadha K, Kavoori A (2005). "Globalization and national media systems. Mapping interactions   in policies, markets and formats", in Curran J, Gurevitch M (eds.), Mass media and society. London: Arnold (4th edition). pp.84-103.
Chalaby JK (2010). "Public broadcasters and transnational television: coming to terms to the new media order", In: Iosifidis P (ed.) Reinventing Public Service Communication. European broadcasters and beyond. New York: Palgrave Macmillan. pp. 101-113.
Colombo F (ed.) (2005). Atlante della comunicazione. Milano: Hoepli. http://www.hoepli.it/libro/atlante-della-comunicazione/9788820333591.html
Colombo F, Carlo S (2006). "Multidimensional approaches to media and cultural frameworks of digital divide", Media Between Citizens and Power, The World Political Forum International Seminar. Venice 23-24 June.
Curran J (2002). Media and power. London: Routledge.
Garnham N (1990). Capitalism and communication. Global culture and the economics of information. London: Sage.
Gillespie A, Robins K (1989). Geographical inequalities. The spatial bias of the new communication technology. J. Commun. 39(3):7-18.
Gunther R, Mughan A (2000). Democracy and the media. A comparative perspective. Cambridge: Cambridge University Press.
Habermas J (1962). Strukturwandel der öffentlickeit. Untersuchungen zu einer kategorie der bürgerlichen gesellschaft. Frankfurt am Main: Suhrkamp Verlag.
Hallin DC, Mancini P (1984). Speaking of the President: political structure and representational form in US and Italian Tv news. Theory and Society, 13:829-850.
Hallin DC, Mancini P (2004), Comparing media systems. Three models of media and politics.   Cambridge: Cambridge University Press.
Howison P (2006). The decline of the Nation-State. Wellington: Victoria University.   pp.1-12   http://pacificempire.org.nz/wp-content/uploads/TheDeclineOfTheNationState.pdf
Jan M (2009). Globalization and media. Key issues and dimensions. European J. Sci. Res. 29(1):66-75.
Lacher H (2006). Beyond globalization. Capitalism, territoriality and the international relations of   modernity. New York: Routledge.
Levy D (1999). Europe's digital revolution. Broadcasting regulation, the EU and the Nation State.   London: Routledge.
Mann M (1997). Has globalization ended the rise and rise of the Nation-State?. Rev. Int. Polit. Econ. 4(3):472-496.
Martin LJ, Chaudhary AG (1983). Comparative mass media systems, New York: Longman.
McQuail D (2010). Mass communication theory: an introduction. London: Sage Publications (first edition 1983).
Merrill JC (1974). The imperatives of freedom. New York: Hastings House.
Mills M, Blossfeld H (2005). "Globalization and the early life course. A description of selected   economic and demographic trends", in Blossfeld H et al., (eds.), Globalization, uncertainty and   youth   in society. London: Routledge. pp.1-24.
Nerone JC (ed.) (1995). The last rights: revisiting four theories of the press. Urbana: University of Illinois Press.
Örnebring H. (2009). Comparative European journalism: the State of current research. Reuters Institute for the Study of Journalism: 1-22 <http://reutersinstitute.politics.ox.ac.uk/fileadmin/documents/European_ Journalism_research_review.pdf>.
Picard RG (1985). The press and the decline of democracy. The democratic socialist response in   public   policy.   Westport: Greenwood Press.
Siebert F, Peterson, T, Schramm W (1956). Four theories of the press: the authoritarian, libertarian, social responsibility and Soviet Communist concepts of what the press should be and   do. Urbana: University of Illinois Press.
Sinclair J, Jacka E, Cunningham S (1996). New patterns of global television. Peripheral visions. Oxford: Oxford University Press.
Sparks C (2007). Globalization, development and the mass media.

London: Sage.

Sparks C, Reading A (1998). Communism, capitalism and the mass media. London: Sage.

Stevenson RL (1998). "Remapping the world of news", In: Immerfall S (ed.), Territoriality in the globalizing society. One place or none?. Heidelberg: Springer-Verlag. pp. 111-123.

Van Creveld M (1999). The rise and the decline of the State. Cambridge: Cambridge University Press.

Waters M (1995). Globalization. London: Routledge

Weiss L (2000). Globalization and State power. Dev. Soc. 29(1):1-15.

Williams R (1983). Towards 2000, London: Chatto & Windus.

Full Length Research Paper

The quality of nutrition research reporting by leading daily newspapers in India

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Background: Newspapers are an important form of Mass media which plays significant role in health promotion, and is crucial for social development. Studies revealed that newspaper reports lacked consistency in presenting nutrition research results to the readers. A study was conducted with a hypothesis "Newspapers often highlight nutrition research findings disproportionately in order to draw reader's attention". Objective: To assess presentation of nutrition research findings/ outcomes by newspapers as compared to the original research papers on which they are based. Method: The top six popular newspapers in India were selected for the study. A scale was evolved based on 10 parameters for gauging accuracy of the reports. Results: A total of 214 reports were identified as based or claimed on nutrition research in all the above six newspapers. One-fourth of the newspaper reports did not conveyed nutrition research results properly. Few reports were found as contrary to the original findings on which they were based on. Almost one-fifth of the reports have no mention of the source, which denies access to the reader for the original report. Usually, any research or scientific study has its own limitations. But, this vital aspect is missing in the newspapers reports on nutrition research. Conclusions: With emphasis on short, "newsworthy" pieces, the media often only report the results of single studies, and many stories are chosen simply because the results run contrary to current health recommendations. Scientists need to help translate their research for consumers. Key words:, Print media, Nutrition, Research translation, Health communication.

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INTRODUCTION

Globally, Mass media are one among the most believable sources of health and nutrition information for people next only to medical sources (International food information council, 2007). Exposure to mass media may have a considerable impact on the eating habits of people (Heinz et al., 2009). Newspapers form an important part of mass media of health and are considered to be credible (Jones sources of nutrition and information by many people et

al., 2008). A substantial proportion of health reports in newspapers today deals with topics related to diet and fitness (Maheshwar and Rao, 2012). Reporting on evolving diet and related health science issues presents a particular challenge for journalists as the public's thirst for this information grows (Gupta and Sinha, 2010; Hilbert and Reid, 2009; Motl et al., 2005).

News reports influence daily food and lifestyle choices

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(Houn et al., 1995; Abbasi, 1998). In India, the circulation of newspapers has increased to 34% between the year 2006 to 2010 and India is the biggest newspaper market in the world with over 108 million daily sales (WAN, 2012). In the south Indian city of Hyderabad alone, as per the audit bureau of circulation (ABC, 2010) of India, the top three English and Telugu (vernacular) dailies have huge circulation and readership figures. The top dailies in English were - Deccan chronicle (with a daily net paid circulation of 6,58,037 copies), The Hindu (4,52,096) and Times of India (1,97,911). Similarly the top circulation slots among the Telugu dailies were Eenadu (15,37,086 copies daily), Sakshi (13,38,845) and Andhra Jyothi (5,73,857) (ABC, 2010).

In a recent study that assessed the coverage of nutrition-related topics by print media in India, it was observed that at least 25% of news articles in English and regional language dailies on nutrition-related issues were referring to the findings of research papers published in peer reviewed journals (Maheshwar and Rao, 2011a). Many newspapers report the findings of research studies published in peer-reviewed medical/ nutrition journals or reports released or papers presented in conferences (Voelker, 1998). These reports act as bridge between scientific research and communications with the public. However, studies carried out in India as well as in other countries have reported that some of the news reports over or under-emphasized certain information in presenting the research results to the readers (Maheshwar and Rao, 2011b; Frost and Frank, 1997).

It was also observed that, few of the news reports lacked consistency in presenting the research results to the readers. Review of literature shows, previous studies on linkage between alcohol and cancer indicated these types of inconsistencies. In a particular year it was reported that, moderate drinking can increase the risk of breast cancer (Foreman,1978; Nelson,1987; Johnson,1987) and the next year it was also reported that there is no increased risk with moderate alcohol consumption (Edwards,1988; Kolata,1988). Another study highlighted health stories, with which consumers find most confusing (Princeton Survey for Rodale Press 1998). Stories about vitamins and supplements top the list, followed by nutrition stories. Consumers find it difficult to distinguish between public-interest trivia and information that actually warrants behavior change. Under these circumstances, the public are not only confused but, may even feel misguided (Angell and Kassirer, 1994). Given this, it is increasingly important to understand how the mass media "filter and translate scientific information".

But, in recent time, media is aim only for news that is hot and sells. Often, one gets sensational depiction of news stories (Maheshwar and Rao,2011-a). Media's main goal, is to gain television rating points (TRPs), many issues are hyped for a day or two, flashing the stories with a sensational touch (Liberman, 2005). Some channels broadcast and publish the messages in such a manner that the real messages are left behind

(Shakuntala and Johal, 2006). This could be attributed to variation in quality of reporting, which is determined by how accurately the scientific information is translated (Smith,1996). Factors such as accuracy, breadth and depth of reporting determine the quality of reporting (Begley and Cardwell 1996).

Hackman and Moe (1999) have developed scores to assess the quality of nutrition reports by considering factors such as background information, description of study population, results, citation of original article and author details etc. Two studies have developed quality scores based on the presence or absence of relevant background information, description of study population and results, critical evaluation of results, mention of principal author and interview with the author of the study or other authorities (Koren and Klein, 1991; Oxman et al, 1993). Furthermore, it is suggested that a critical piece of information for scientists to look for when evaluating newspaper reports is the citation of the original journal article in the newspaper report. This verifies that the article was based on a published study (Smith R 1996).

Although, there are studies in India that assessed the extent of nutrition related news reports in relation to the other reports in Indian newspapers (Maheshwar and Rao, 2011a; Gupta and Sinha, 2010), to our knowledge, there are hardly any studies that compared and assessed newspaper articles about nutrition-related research with the original journal articles/ research studies on which they are based. Earlier studies on the daily newspapers of the south Indian city of Hyderabad also found substantial differences in reporting of nutrition news in English and Vernacular dailies (Maheshwar and Rao, 2011a; 2012). The current study was conducted with an objective to evaluate the quality of newspaper articles that reported nutrition research as compared to the original journal articles/research reports on which they were based. We have also compared the extent of accurate reporting of nutrition research findings among various dailies.

MATERIALS AND METHODS

Study design: It was a prospective study conducted for a period of six months from 1st September, 2010 to 28th February, 2011.

Sample: Based on the circulation figures in the south Indian city of Hyderabad, six popular newspapers (three English + three Telugu) were selected for the study. During the study period, 179 issues of each of the six newspapers were published, making the total sample 1074. All the articles/ reports related to nutrition and food that were based on research studies were selected for the study using the following inclusion and exclusion criteria.

Inclusion: Articles/ reports/ news items based on findings from research studies on nutrition, food and dietetics either press releases from peer-reviewed journals or sourced from international news agencies (*example,* Reuters, Associated Press etc), foreign newspapers and magazines (*example,* New York times, Time etc,) or written by local journalists.

Exclusion: Editorials, commentaries, articles for debate and education, narrative reviews, letters to the editor, case reports and articles related to the local health sector and advertisements of nutritional products and services were excluded.

Analysis: The basic parameters that were considered for assessing the quality of the news reports were related to the traceability of the original research study (on which they were based) from information reported in the newspaper. The variables/scale constructed and reported by Hackman and Moe (1999) was adopted with minor modifications. The following were the variables considered and a score of "0" was assigned for 'No' and 1 for 'yes' –

(i) Sample size reported;
ii) Study population described;
(iii) Description of variables measured in the study provided;
(iv) Study design and analysis described;
(v) Limitations of the study, if any, reported;
(vi) Prime source of the report mentioned;
(vii) Only secondary source of the report mentioned;
(viii) News report based on a peer-reviewed study;
(ix) Headline reflects the original study accurately;
(x) Appeared on Page-One

Then through manual, library and internet search, the actual research studies which were traceable from the information provided in the newspaper articles were collected. Such newspaper articles were then compared with the relevant research article.

Statistical analysis

Descriptive statistics were calculated for all the ten variables of the study. Mean values of all these variables across the six newspapers were compared using *ANOVA-* F test with post- hoc tests of LSD (Least Significant Different) method. Level of significance was considered as 0.05.

RESULTS

A total of 214 news reports on nutrition research were identified in all the six newspapers *viz.,* Deccan Chronicle, The Hindu, Times of India, *Eenadu, Sakshi* and *Andhra Jyothi* during the study period. Overall, regional language (Telugu) newspapers published more reports (125) on nutrition research than the English dailies (89). Among the Telugu dailies, *Andhra Jyothi* published highest number (71) of nutrition research reports and *Sakshi* published the least in entire six months of the study period (table-1). Among the English dailies, Deccan Chronicle published more nutrition reports than the other two dailies (table-1).

More than 70% of all the nutrition research reports across the dailies were from secondary sources and fewer (<30%) were based on the primary source. Reports based on secondary sources mostly quoted only the names of the country or University where the research was carried out or foreign newspapers/news agencies like The Daily Mail, New York Times, and Washington Post as their source of information. Of the 22.5% of the reports which were based on the primary sources, over

two-thirds were in English newspapers. Among the reports that were based on secondary sources, a few (6%) were even based on the claims made by public relations professionals of food and pharmaceutical industries quoting some research studies.

Only 15.7% of the English reports indicated the limitations of the respective research/ study, whereas none of the reports in Telugu dailies reported the limitations. About 45% reports in English dailies mentioned the sample size, whereas, only 30.4% of Telugu dailies reported this variable. Similarly, 47.1% reports in the English newspapers described the study population; 52.8% gave description of research variables and 57.3% described study design and analysis, whereas, in vernacular dailies only 31.2% reports stated about the study population; 39.2% mentioned about the research variables and 48.8% outlined the study design and analysis.

ANOVA- F test results show that out of 10 variables compared, 6 variables *viz.,*

(1) Sample size reported,
(2) Study population described,
(3) Limitations of the study,
(4) Prime source of the report mentioned,
(5) only secondary source mentioned and
(6) News Report based on peer-reviewed study, were found to be statistically significant among the newspapers.

When Post-hoc tests were conducted on these parameters, least significant difference (LSD) was revealed among the newspapers for each of the variable and the same have been indicated as superscripts in table1. It was observed that, English newspapers mentioned more number of variables, in each of the report compared to Telugu dailies (table-2). In all the three English dailies, almost a quarter of reports (23.5) consists more than 6 variables in each of the report, whereas it was only 1.6% in all the three Telugu dailies put together. Reports containing with only one variable of nutrition research is more (39.2) in Telugu dailies, compared to (29.2) English dailies. Of all the reports appeared in Telugu dailies put together, 67% of them quoted only three or less than three variables of the nutrition research, whereas in English dailies 61.5% of reports consists three or more than three variables.

When the newspaper reports were compared to the original articles on which they were based, it was observed that regional dailies exaggerated the findings and sensationalized the headlines, whereas only one report with exaggerated headline was found in English daily (Deccan Chronicle) during the study period. The headline in Deccan Chronicle read "Energy drinks can kill, warns study". However, the article reported a study that assessed the adverse effects of energy drinks on children who suffer from diabetes, seizures, cardiac abnormalities, or mood and behaviour disorders. The

Table 1. Percentage of news articles containing each of the 10 variables used to measure the accuracy of reporting

S.No.	Variables in newspaper report	Overall(*Sub total 1+2)* N=214	P value (<0.05 Significant)	English Dailies				Telugu Dailies			
				Deccan Chronicle n=41	The Hindu n=24	Times of India n=24	*Sub total- 1 n=89*	Eenadu n=42	Saakshi n=12	Andhra Jyothi n=71	*Sub total 2 n=125*
1.	Sample size reported	36.4	*0.002*	43.9[a]	20.8[a]	70.8[b]	*44.9*	33.3[a]	41.6[ab]	26.7[a]	*30.4*
2.	Study population described	37.8	*0.003*	46.3[ab]	25.0[a]	70.8[b]	*47.1*	30.9[a]	41.6[ab]	29.5[a]	*31.2*
3.	Description of variables measured in the study	44.8	*0.198 (N.S)*	56.1	37.5	62.5	*52.8*	40.4	41.6	38.0	*39.2*
4.	Study design and analysis described	52.3	*0.053 (N.S)*	65.8	33.3	66.6	*57.3*	40.4	50.0	53.5	*48.8*
5.	Limitations of the study reported	6.5	*0.000*	21.9[a]	4.1[bc]	16.6[ab]	*15.7*	0[c]	0[c]	0[cd]	*0*
6.	Prime source of the report mentioned	29.4	*0.000*	48.7[a]	29.1[ac]	70.8[b]	*49.4*	14.2[c]	33.3[ac]	12.6[cd]	*15.2*
7.	Only secondary source of the report mentioned	70.5	*0.000*	51.2[a]	70.8[ac]	29.1[b]	*50.5*	85.7[c]	66.6[ac]	87.3[cd]	*84.8*
8.	News Report based on a peer-reviewed study	22.5	*0.001*	34.1[a]	25.0[ac]	45.8[a]	*34.8*	9.5[bc]	33.3[ab]	12.6[bc]	*13.6*
9.	Headline does not reflect the original study accurately	97.2	*0.306 (N.S)*	97.6	100	100	*98.9*	100	91.7	94.4	*96.0*
10.	Appeared on Page one	0.9	*0.086 (N.S)*	2.4	0	0	*1.1*	0	8.3	0	*0.8*

N.S= Not Significant.
Note: Variations in superscripts indicates significance of mean differences across newspapers (P<0.05).

original study did not report the effects of energy drinks on normal kids. Similarly, in *Andhra Jyothi* some misleading headlines were - "*Tiffin maanesthe… Gunde Jabbu Khayam!*" (If you skip breakfast… you will surely get cardiac ailments); "*Meegada baaga thinte… Moothrasaya cancer guarantee*" (Cancer to Urinary bladder is guaranteed with more intake of cheese or milk cream); "*Choclates thinte pandlu thinnatley..!*" (Eating Chocolates is Equal to Fruits Intake); "*Suvaasanalathone kovvu karuguthundhi*" (Body Fat Dissolves by Fragrance).

However, they either over-emphasized one of the findings or misreported the results of the original studies. Similar findings were observed in *Sakshi* daily too. During the six-month period, only two research reports, one in Deccan Chronicle (English) and another in *Sakshi* (Telugu) appeared

Table 2. Percentage of news reports containing no. of variables in each report

S.No.	News Paper	7 variables reported	6 variables reported	5 Variables reported	4 Variables reported	3 Variables reported	2 Variables reported	Only 1 Variable reported
English Dailies								
1.	Deccan Chronicle n=41	2.4	14.6	26.8	14.6	9.7	12.2	19.5
2.	The Hindu n=24	0	16.6	4.2	8.3	8.3	8.3	54.2
3.	Times of India n=24	4.2	37.5	29.2	0	4.2	4.2	20.8
	Pooled (English Dailies) n=89	*2.2*	*21.3*	*21.3*	*8.9*	*7.8*	*8.9*	*29.2*
Telugu Dailies								
1.	Eenadu n=42	0	7.1	21.4	7.1	7.1	14.3	42.8
2.	Saakshi n=12	8.3	25.0	8.3	8.3	0	16.7	33.3
3.	Andhra Jyothi n=71	0	5.6	15.5	7.0	16.9	16.9	38.0
	Pooled (Telugu dailies) n=125	*0.8*	*8.0*	*16.8*	*7.2*	*12.0*	*16.0*	*39.2*
	Total (N=214)	1.4	13.6	18.7	8.0	10.3	13.0	35.0

on page one of the newspaper.

DISCUSSION

This article has attempted to evaluate the accuracy of newspaper reports based on scientific research articles using a 10 parameter scale and evaluated the relative accuracy in reporting in vernacular and English dailies. It was observed that less than a quarter of all the news reports had fulfilled at least half of the parameters that we considered were necessary for ensuring accuracy of reported nutrition research studies in newspapers. The current study indicates that the sample characteristics, methodology and study limitations are not routinely reported. These components are very critical for accurate understanding of the research results. Although, relatively higher number of reports in English dailies contained these components than the vernacular ones, Times of India accounted for maximum of such reports. Among the Telugu newspapers, not even a single report had quoted limitations of studies. Reporting these compo-nents was found to be limited in a similar study conducted by Hackman and Moe way back in 1999 in American newspapers. They found that only 43% descry-bed the study population, 68% stated the sample and only 23% reported the limitations.

For the readers who might want to locate the original nutrition research studies, the current trend of reporting in the Indian newspapers provides very little scope. Unlike in the American dailies (Hackman and Moe, 1999), only about a third of the reports in the current study provided the primary source with significantly higher number of English dailies doing so than the Telugu newspapers. Headlines of some of the news reports have missed the real messages and highlighted inappropriate content, perhaps to grab the readers' attention. This observation was in concurrence with findings of an earlier study, which observed that the news headlines tend to focus on partial study results (Maheshwar and Rao, 2011a). Commenting on this trend, Hilbert and Ried (2009) in their research paper say, "With medicine being one of the most elusive, mysterious, and misunderstood fields in society, the press often has to unearth the answers to the questions many citizens have. The medical field is constantly pressured to find the next breakthrough and the next lifesaver, but when the slightest information is discovered, the news is everywhere, no matter how accurate the findings may be". This type of reporting may misinform the lay public and may lead to questions about the applicability of the results to individual patients (Motl et al., 2005).

Nutrition-related information portrayed by media, often over-emphasized and could confuse readers. Though, appearance of such kind of information is rare (about 4% in the current study), it cannot be ruled out as insignificant

since media have potential influence on readers. The use of exaggeration or slant (whereby some features are ignored and others are overemphasized) may be motivated by the conflicting expectations of readers and responsibilities of journalists (Condit, 2004). While the readers consider health and nutrition information that appears in daily newspapers authentic (Maheshwar and Rao, 2011b), reporters need to gain newspaper space (and ultimately an audience) for their topics, so they are prone to include, sensationalistic, absolutist or at least dramatic statements (Wilcox, 2003). This drive also conflicts with the norms of science journalism, which encourage cautious, detailed, balanced reporting, thus reflect the norms of the science that is covered (Jones *et al*, 2008).

The background and level experience of reporters (and scientists) influence the accuracy of reports. Many reporters with solid backgrounds in nutrition science present research findings correctly, in context, and with a clear indication of the relation of new findings to the existing body of research. Others, however, report new scientific findings without clearly indicating their limitations or inconclusiveness, which may lead consumers to act on information that change or that, is proven by further research to be inaccurate. Such developments fuel public confusion and the perception that nutrition information is unreliable and ever-changing (Nutrition Science Policy, 1996)**.** The media's major obstacle in communicating science is a lack of understanding of the scientific process itself, especially among non-science writers. Journalists with science backgrounds may better understand that every new study is not necessarily news, but rather part of a larger process of discovery and debate. However, to a general assignment reporter who may not understand this process, each new study seems to provide newsworthy information and potential headlines (Sylvia B. Rowe 2002).

Most reporters work hard to keep their stories accurate. However, the media are in business to sell papers or attract viewers and listeners. To do so, they sometimes use headlines or story lead-ins with words such as "breakthrough" and "cure" to describe the findings of studies that may offer only preliminary results (Abbasi, 1998). These tactics may attract the audience, but they could be misleading, especially if the audience does not read or listen to the entire story (Frost and Frank, 1997). In addition, some media reports are sensationalized. For instance, some special interest groups promote their own agendas by citing statistics out of context or touting inaccurate and alarming data. The media present this information because of its shock value and audience appeal (Miller et al., 2002)**.**

The process of conveying scientific information through the media has been likened to a "communications chain", which has the scientist on one end and the journalist who delivers the information on the other end. In between are several key players who may influence the end result,

including editors, public affairs professionals, special-interest groups, and representatives of the food, pharmaceutical or supplement industries (Rowe, 2001)**.**

Media reports about new nutrition research are abundant, but they may confuse the public when unqualified sources are quoted, findings are reported out of context, or results appear to contradict previous studies (Miller et al., 2006).

The media's major obstacle in communicating science is a lack of understanding of the scientific process itself, especially among non-science writers. Journalists with science backgrounds may better understand that every new study is not necessarily news, but rather part of a larger process of discovery and debate. However, to a general assignment reporter who may not understand this process, each new study seems to provide news-worthy information and potential headlines (Rowe, 2001).

CONCLUSION

From the present study, it can be concluded that important components of research studies that are critical for accurate and meaningful interpretation of nutrition related research - sample characteristics, study methodology, and study limitations- are not routinely reported. With emphasis on short, "newsworthy" or sensational pieces, the media often only highlight some results of the studies, and stories are chosen simply because the results run contrary to current health recommendations. The media will continue to be consumers' main source of nutrition information, and an important means for the nutrition scientists to help translate their research to the public. There is a need for synergetic efforts between journalists covering health topics and experts in the field of diet and nutrition, to avoid inaccurate information to the readers.

Conflict of Interests

The author have not declared any conflict of interests.

REFERENCES

Abbasi K (1998). Headlines: more perilous than pills? BMJ., 316: 82.
ABC (2010). Audit Bureau of Circulation (India) Periodical report: January- June 2010.
Angell M, Kassirer JP (1994). Clinical research- what should the public believe? N. Engl. J Med. 331:189-190.
Begley A, Cardwell G (1996). The reliability and readability of nutrition information in Australian women's magazines. Aust. J. Nutr. Diet. 53:160-166.
Condit C (2004). Science reporting to the public: Does the message get twisted? J. Can. Med. Assoc. 170(9):1415-1416.
Edwards DD (1988). Breast cancer's link to alcohol assailed. Sci. News. 133:242.
Foreman J (1978). Alcohol tied to breast cancer, 2 studies find even 3 drinks a week heighten risk. Boston Globe 7:1.
Frost K, Frank E (1997). Relative risk in the news media: a

quantification of misrepresentation. Am. J. Public Health 87:842-845.

Gupta A, Sinha AK (2010). Health coverage in mass media: A content analysis. J. Commun. 1(1):19-25.

Hackman EM, Moe GL (1999). Evaluation of newspaper reports of nutrition-related research. J. Am. Diet. Assoc. 99(12):1564-66.

Heinz F, Karin H, Ibrahim E (2009). Mass media nutrition information sources and associations with fruit and vegetable consumption among adolescents. Pub. Health Nutr. 13(2):269-275.

Hilbert A, Ried J (2009). Obesity in print: An analysis of daily newspapers, Eur. J. Obes. 2(1):46-51.

Houn F, Bober MA, Huerta EE, Hursting SD, Lemon S, Weed Dl (1995). The association between alcohol and breast cancer: popular press coverage of research. Am. J. Public Health 85:1082-1086.

International Food Information Council (2007). Consumer Attitudes toward Functional Foods/Foods for Health (Executive Summary). Washington DC: IFIC.

Johnson G (1987). New evidence linking alcohol to breast cancer. New York Times 10:5.

Jones SC, Andrews KL, Tapsell L, Williams P, Mc Vie D (2008). The extent and nature of "health messages" in magazine food advertising in Australia. Asian Pacific J. Clin. Nutr. 17:317-324.

Kolata G (1988). New study finds no association linking alcohol to breast cancer. New York Times., March 21: A14.

Koren G, Klein N (1991). Bias against negative studies in newspaper reports of medical research. JAMA., 266: 1824-1826.

Liberman T (2005). Bitter Pill, Columbia Journal. Rev., 45-47.

Maheshwar M, Rao DR (2011a). A Comparative analysis of nutrition science coverage by popular Indian daily newspapers. J. Media. Commn. Stud., 3(4):131-143.

Maheshwar M, Rao DR (2011b). A Matter of Looks: The Framing of Obesity in Popular Indian Daily Newspapers. J-UCMS., 8(1): 30-34.

Maheshwar M, Rao DR (2012). Quantitative analysis of nutrition and health messages in Indian print media. Pub Health Res. 2(2):28-31.

Miller GD, Krautheim AM, Quagliani D (2002). Who's putting the spin on your science? Nutr Today 37:186-191.

Miller GD, Cohen NL, Fulgoni VL, Heymsfield SB, Wellman NS (2006). From nutrition scientist to nutrition communicator: Why you should take the leap. Am. J. Clin. Nutr., 83(6):1272-1275.

Motl SE, Timpe EM, Eichner SF (2005). Evaluation of accuracy of health studies reported in mass media. J. Am. Pharm. Assoc. 45(6):720-725.

Nelson H (1987). Evidence reported in NEJM suggests alcohol consumption significantly increases a woman's chances of developing breast cancer. Los Angeles Times 7: 1.

Nutrition Science Policy (1996). Communicating emerging scientific information. Nutr. Rev. 54 (5):153-157.

Oxman AD, Guyatt GH, Cook DJ, Jaeahka RJ, Heddle N, Keller J (1993). An index of scientific quality for health reports in the lay press. J. Clin. Epidemiol. 46:987-1001.

Princeton Survey Research Associates for Rodale Press (1998). Public Evaluations of Health News Coverage. Princeton, NJ.

Rowe S (2001). Communicating science-based food and nutrition information. J. Am. Diet. Assoc. 101:1145-1146.

Shakuntala R, Johal NS (2006). Ethics and news making in the changing Indian media space. J Mass Media Ethics., 21: 286-303.

Smith R (1996). Three rules to cut the hype. BMJ. 312:983.

Sylvia BR (2002). Communicating Science-Based Food and Nutrition Information. J. Nutr. 132(8):2481S-2482S.

Voelker R (1998). Getting the story straight on nutrition. JAMA., 279:417.

WAN (2012). World Press Trends Report: 2012.

Wilcox SA (2003). Cultural context and the conventions of science journalism: drama and contradiction in media coverage of biological ideas about sexuality. Crit. Stud. Media Commun. 20(3):225-247.

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