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Climate change and the daily press:
Did we miss the point entirely?

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Abstract

Even though most of the public debate regarding climate change seems to be centered today on the politics of potential post-Kyoto agreements and, to some extent, on the science and technology of mitigation and adaptation, the old questions of whether such a thing as 'global warming' actually exists and whether or not industrialised society is to blame for it still pop up every now and then in the media. This persistence ought to be surprising because the Third Assessment Report (TAR) issued in 2001 by the Intergovernmental Panel on Climate Change (IPCC) was quite clear in its statement that climate change is real and most probably caused by human activity. We have made a partial review of the coverage of the various Reports issued by IPCC during 2001 to analyse the degree to which the daily press identified (or not) this qualitative shift and whether or not it characterised it as representative of a scientific consensus regarding these two points. Our data suggests that the shift in discourse was not entirely lost on what could be characterised as 'prestige press', but that Mexican dailies remained oblivious to it throughout the news cycle. We also present a model of science journalism's functionality to assess the degree to which these qualitative differences in coverage may have be relevant to the public.

Keywords: climate change, science journalism, IPCC

1. Introduction

In a rather casual commentary caught on TV the leader of the opposition in Spain, Mariano Rajoy, managed to put himself – and a certain cousin of his – on the wrong side of the spotlight by stating that climate change 'cannot be turned into the greatest world problem', given that not even 'the world's ten most important scientists can guarantee tomorrow's weather in Sevilla (El País, 2007a).' Quite clearly, Rajoy made the common mistake of confusing *weather* with *climate*. Admitting that he doesn't 'know a lot' about this matter, Rajoy, a candidate to become Spain's Prime Minister, opted to quote his cousin, a Physics Professor. 'I assume *he* must know', he said, and then proceeded to display their ill-fated argument: If tomorrow's weather cannot be predicted by even the best scientists, 'how can anybody say what will happen in the world in 300 years?'

Whether or not Rajoy's scepticism is representative of what a sizable portion of the population believes to be true concerning climate change, it is, at the very least, a high profile example of how the principle of authority can be invoked to question the wisdom of some experts based solely on the differing opinion of some other experts. Incidents such as this have more than merely anecdotal value because the media tend indeed to rely heavily on 'expert opinion' as valid sources to back up nearly all sorts of claims. And although a simple 'tit for tat' strategy may seem appropriate to reach balance in press coverage, this is not necessarily the case when the subject involves scientific controversy (Mooney, 2004). The risk is that by giving equal weight to different experts (whether or not their expertise is equally legitimate), journalists may breathe artificial life into controversies already settled among scientists.

Here we hypothesise that this may well have been the case with the coverage of climate change of anthropogenic origin. We postulate that the year 2001 marks a turning point in the subject inasmuch as it was the first time that the Intergovernmental Panel on Climate Change (IPCC) explicitly formulated and answered the two questions most relevant to the debate (IPCC, 2001). We will examine the reasons why most of the media consider the IPCC to be the ultimate expert source on the subject, and so, once the Panel reached a consensus on the existence and the causes of global climate change, the scientific debate may be considered to have reached a point, during 2001, in which, if not entirely over, at the very least the focus changed from existence and sources to the more pressing issues of vulnerability, impact and adaptation. In very simple words, the IPCC Reports of 2001 were an announcement to the world that climate researchers were sufficiently satisfied that the global climate was indeed changing and that humankind was in no small measure behind the observed trends.

In this work we set out to examine to what extent the daily written press relayed to its public this shift in the scientific debate, comparing the coverage in Mexico and abroad. Furthermore, we develop a model of quality in science journalism with the aim of analysing how relevant the differences in coverage may have been for the general public.

2. The climate debate

Rajoy's episode, late in 2007, happened in an environment in which most of the Spanish press either expressly condemned or mocked it, or at least presented it in such a light that left him vulnerable to criticism (El País, 2007a). This, however, has not always been the case. It could be argued that until quite recently some media outlets still lent credence to sceptics nearly just as much as to IPCC members, which led to comparable space and/or time in coverage and left the impression that the debate was still wide open among experts (Rosen, 2007). It is easy to see how this would tick off those who are in the know regarding the science of climate change, but our concern here is with the average citizen, who may depend on the media to acquire relevant information.

We thus turn first to IPCC as a journalistic source for science writers covering the global climate debate. It is worth noting that the Panel shies away from calling itself 'the ultimate authoritative voice' on the matter, as many media outlets routinely do. What it does state indeed is that 'a main activity of the IPCC is to provide in regular intervals an assessment of the state of knowledge on climate change' (IPCC, 2007). It can be argued that it is correct to have chosen the singular in 'the state of knowledge' based on the fact that IPCC's Reports convey the agreement not only amongst its close to 3,000 experts but also of government representatives and stake holders which are supposed to go through these documents line by line before they are made public. Rosen (2008) has made a detailed analysis of the way in which IPCC operates with the main goal of reaching consensual agreement on both the scientific facts behind climate change as well as the interpretations and predictions from those very facts.

We thus may consider IPCC as not only a legitimate source for science journalists, but indeed as an often indispensable one. It then follows that the presentation of IPCC's Reports, which so far has occurred only every 5 to 6 years, ought to be main news events for the international media. But what about other scientific sources, particularly those who do not share the interpretations contained in IPCC's Assessment Reports? In her analysis, which claims to be thorough but not exhaustive, Rosen (2008) was able to establish the huge disparity in the number of scientific papers with views contrary to IPCC in peer-reviewed journals. Conspiracy theories aside, these two facts might give journalists pause to consider how best to balance their coverage between sources. We argue, however, that regardless of how much space and/or time is devoted to contrary views[1], there appears to be no legitimate journalistic reason *not to* cover in depth the contents of IPCC Reports when they are released.

One such occasion took place in 2001, in a news cycle lasting from January to September of that year with at least four major events corresponding to the release of Reports from each of IPCC's three Working Groups plus the final Synthesis Report. The first (January 20, Shangai) and last (September 29, Wembley) deserve special attention in this work because they contain explicit claims which clearly shift the focus of the scientific debate regarding the existence of a global climate change and the weight of the human contribution to it. Table 1 shows the exact phrases contained in the documents 'Climate Change 2001: The Scientific Basis' (IPCC, 2001a) and 'Climate Change 2001: Synthesis Report' (IPCC, 2001b). If the average reader were to pose the following questions: 'Is global warming for real?' and 'Is humankind in any significant way causing it?', then reading these few phrases ought to at least let the public know that thousands of scientists participating in IPCC along with government representatives from hundreds of nations have reached a consensus on both questions, and, furthermore, that in both cases the answer is affirmative. These are by no means extremely technical questions,

[1] Rosen (2008) also noted that there is no such thing as a coordinated opposition to IPCC on the science of climate change, but rather a dispersed chorus of so called *contrarians.*

only imaginable from the brightest of minds, highly specialised in climate science. These are, on the contrary, precisely the sort of questions that one might expect ordinary people to be pondering regarding climate change.

So a great divide appears to have formed as early as 2001 between the experts on the field and the common citizen. Our question here is this: should the press have done something about it?

Table 1. Exact phrases quoted from Reports made public by IPCC in 2001 in which the Panel explicitly addresses the questions of existence of global climate change and human contribution to it.

Climate Change 2001: The Scientific Basis	**Climate Change 2001: Synthesis Report**
'The global average surface temperature has increased over the 20th century by about 0.6°C'. 'Temperatures have risen during the past four decades in the lowest 8 kilometres of the atmosphere'. 'Changes have also occurred in other important aspects of climate'.	'The Earth's climate system has demonstrably changed on both global and regional scales since the pre-industrial era, with some of these changes attributable to human activities'.
'An increasing body of observations gives a collective picture of a warming world and other changes in the climate system'.	'An increasing body of observations gives a collective picture of a warming world and other changes in the climate system'.
'Concentrations of atmospheric greenhouse gases and their radiative forcing have continued to increase as a result of human activities'.	'Concentrations of atmospheric greenhouse gases and their radiative forcing have continued to increase as a result of human activities'.
'There is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities'.	'There is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities'

3. A functional model for journalism

The question of what is the press expected to do with the information it gathers lies at the heart of the debate over the purpose of journalism. It is, furthermore, essential to our analysis since we aim to gauge the social relevance of failing to convey to the public the shift in the scientific discussion of climate change.

There is a plethora of ideas regarding the social purpose of journalism. We have placed our starting point alongside Kovach and Rosenstiel (2001), who state that 'the primary purpose of journalism is to provide citizens with the information they need to be free and self-governing.' Alas, such a statement begs the question of how exactly can regular citizens make use of their daily newspaper or favourite radio newscast to reach as grand a purpose as exercising freedom

and government for themselves. Without losing any of the soundness of Kovach and Rosenstiel's postulate, we argue that the practical side of it can be seen more easily from the vantage point of the practising journalist. Take, for instance, the Report from IPCC's Work Group 1 on the scientific basis of climate change, released in January 2001. There may have been as many ways of deciding which information points to include in any specific note as there were journalists writing notes about it. However, those who had the social function of journalism on their minds would very likely have tried to identify the information which would leave their public in better position to make use of their freedom and to influence their own government on the issues. This, of course, is not an easy task, for each citizen has its own particular way of trying to go about the business of putting their freedom to good use. And while some are quite vocal and place calls to their representatives or write letters to the papers, most tend to believe that the only instance of action available to them comes at the voting booth once every number of years. How, then, can journalists be expected to prioritise, in line with the social function of their trade, the huge amount of information to which they are exposed by IPCC?

We propose that the answer, and indeed a system for identifying specific information points, stems from the very question of how can citizens use information from the media in any significant way. Whether they exercise their freedom very often or only when they vote, the one thing that every citizen can do is *decide*. And it is precisely here that journalists can try to serve their public by giving them, at the very least, the information which they deem most relevant to their decision processes regarding the issues they are informing them about.

We have thus arrived at a functional model for journalism which pins the quality of the coverage at least partly on whether or not it satisfies its social purpose by giving the public the information needed to make relevant decisions. The advantage for the public should be obvious. And for their part, journalists operating under these philosophy may find themselves in a better position to sift through large volumes of information guided by the purpose of looking first and foremost for those points without which their public would be in a weaker position to make decisions.

4. The model at work

We can now go back to the two questions which we hypothesised that the general citizen might want to have answered regarding the debate on climate change back in 2001. Except that now, instead of looking to the media to read or hear or see someone else's answers (be it a legitimate expert on the field or Rajoy's cousin), each citizen will be given information intended to help them make up their own minds. They may of course choose not to do so, if they are more inclined to invoke the principle of authority. But this is irrelevant to the journalist who decides to inform the decision process, regardless of whether the decision will be made or

deferred. Once the journalist has identified the most important decisions the public might want to make, the method will systematically prioritise the information points towards that end.

Table 2. Decision grid. The left column contains potential decisions that citizens might want to be able to make, and on the right we show information points extracted from IPCC reports which we deem relevant to the decision processes

Decisions	Information points from IPCC Reports
Is there really such a thing as *global warming*?	• Mean temperature records reported by IPCC show a sharp increase in recent decades, driving the total rise to 0.6ºC ± 0.2ºC during the 20th century
Why do scientists think that global warming is not due to natural climate variability?	• These increases in mean global temperature are unprecedented in the historical record of the last few centuries (the famous 'Hockey stick' graph) • Numerous computer simulations of global climate show that, without CO2 forcing, the planet would probably have not increased its mean global temperature nearly as much
Why do scientists think that human activities are responsible for global warming?	• Human activities have significantly increased CO2 emissions to the atmosphere since the current industrial era began • According to the greenhouse model of atmospheric climate, greenhouse gases have the effect of trapping heat in the atmosphere, thus driving the increase in mean global temperature • Graphs of mean global temperature vs. time strikingly follow the corresponding graphs of CO2 concentration in the atmosphere
How dangerous is this warming trend?	• Coastal areas and small islands will be vulnerable to rises in sea level • Extreme weather events will tend to be even more extreme more frequently
What demands could I make from my government in relation to climate change?	• Local planning based on the review of suggested strategies and available technology for mitigation of greenhouse gas emissions and adaptation to climate change

Earlier we proposed that the average citizen might have faced two specific questions about climate change in January 2001: 'Is global warming for real?' and 'Is humankind in any significant way causing it?' It seems quite hard to find any other questions as legitimate or as urgent as these two. More importantly, they are at the root of potential decision processes by the public, and thus they could guide journalists in their coverage. The key is to construct a simple table containing a few decisions that citizens might want to be able to make, and then

searching for the information points which seem to be more relevant to those decisions. For the case of IPCC's Reports of 2001, Rosen (2008) elaborated the array shown in Table 2. Slightly rephrasing our two original questions and expanding them into a few more subsidiary ones we composed a grid with five potential decisions and the corresponding information points to enrich the decision processes. Note that all information points in Table 2 can be extracted from any of the four reports released by IPCC during 2001, and so all of them were readily available to journalists covering climate change. In this way, the coverage is guaranteed to have at the very least information which has been deemed to be essential to help citizens make up their minds on issues in which they have the potential to decide either to take action or to demand action from their governments. Or, in the words of Kovach and Rosenstiel's original statement, 'to be free and self-governing.' Since all these considerations apply just as well to those cases in which the essential information happens to come from scientific sources, we can trivially extrapolate the model to the field of science journalism (Crúz-Mena, 2002).

5. Methodology

Once a model is available to gauge the quality of press coverage on its functionality one can proceed to perform content analysis in search of specific information points. In the case under study, concerning the reports from IPCC in 2001, we were interested in the question of whether the press relayed the relevant information for the public to be able to decide if global climate change was for real and to what extent did humankind have a hand on it. This information may have appeared in the form shown on Table 2 or in any other equivalent formulation.

We analysed the coverage of three nationally distributed Mexican daily newspapers (La Jornada, Reforma and El Universal) and three major overseas dailies (Le Monde, from France; El País, from Spain; and The New York Times, from USA)[2]. This choice is admittedly not exhaustive, but at least at the Mexican level it is indeed representative. Online searches and hard copy analysis were made for each newspaper from September 1, 2000 to January 1, 2002[3]. All in all, 29 notes were identified, as shown in Table 3. Details about the selection criteria and keywords used in search engines will be published elsewhere (Rosen, 2008). Two substantial differences jump out immediately between the coverage by Mexican newspapers and the three dailies abroad: the dimension of the coverage, as measured by the sheer number of notes, and the delay with which the Mexican press started following the trail of this global story.

[2] Results from Le Monde are not included in this study because the analysis is still ongoing.
[3] Originally we had set out to search only between January 1 to December 31, 2001, but we noticed some newspapers had ran stories as early as October 2000, so we decided to consider a lengthier news cycle.

Table 3. Summary of press coverage. A total of 29 notes were identified, 24% of which were published well in advance of the release of the very first report. The three Mexican newspapers studied account for 13.7% of the total coverage analysed in this study, or slightly less than 15% of the amount of notes published by the three foreign newspapers.

IPCC Meeting	The New York Times	El País	Le Monde	El Universal	Reforma	La Jornada
Total: 29	7	7	11	1	1	2
Advanced stories, October 2000	26/10/00 28/10/00		03/11/00 03/11/00 03/11/00 18/11/00 16/01/01			
The Scientific Basis (Shangai, January 2001)	18 /01/01 23/01/01	23/01/01	24/01/01			22/01/01
Impacts, Adaptation and Vulnerability (Geneva, February 2001)	19/02/01 22/02/01	14/02/01 19/02/01 20/02/01	21/02/01 21/02/01	20/02/01		19/02/01
Mitigation (Accra, March 2001)	10/02/01	06/03/01				
Plenary Meeting (Nairobi, April 2001)		03/04/01				
Synthesis Report (Wembley, September 2001)		25/09/01				
(No identified meeting)			21/02/01 07/03/01 27/03/01		19/04/01	

But the ultimate goal of our analysis, and indeed the test to which our method should be subjected, is the confrontation between the information points in our decision grid (Table 2) and the contents of the published notes. In retrospective, the most important piece of information to be gathered from all IPCC reports during 2001 was the consensus amongst scientists and government representatives regarding the existence of a marked warming trend in mean global temperatures and the partial contribution of human activities to this trend. In Table 4 we have isolated the exact phrases with which The New York Times and El País conveyed this particular

information point[4]. None of the Mexican newspapers informed about it. We also compared the rest of the information points in our Decision Grid to the actual coverage. A summary of this comparison is shown in Table 5, with dates and sources, when these were identified. It is worth noting that none of our information points was left without at least one of the newspapers having mentioned it. In the same vein, though, alternative hypotheses to the greenhouse gas model of global warning seem not to have been considered legitimate back in 2001, for only one newspaper picked it up, and then with no attributable source.

Table 4. Shift in scientific debate. All three Mexican newspapers failed to inform about the newly established consensus amongst scientists regarding the existence and partial human contribution to a global warming trend. (NYT=The New York Times; EP=El País)

Information Point	Date/Newspaper	Exact quote
IPCC confirms there is consensus amongst scientists regarding global warming	26/10/00 NYT	'Greenhouse gases produced mainly by the burning of fossil fuels are altering the atmosphere in ways that affect earth's climate, and it is likely that they have "contributed substantially to the observed warming over the last 50 years," an international panel of climate scientists has concluded. (…)This represents a significant shift in tone.'
	18/01/01 NYT	'The draft finds that the warming in the 20th century was likely to have been the greatest of any century in the last 1,000 years for the Northern Hemisphere and that the 1990's was the warmest decade of the last millennium.'
	23/01/01 NYT	'New evidence shows more clearly than ever that temperature increases are caused mostly by pollution, not by changes in the sun or other natural factors'.
	23/01/01 EP	'There is no doubt: human activities are responsible for most of the planet's global warming. This is one of the main conclusions of the United Nations third scientific report on climate change'.
	23/01/01 EP	'In light of new evidence and despite uncertainty, most of observed global warming during the last 50 years is due, very likely, to rise in greenhouse concentration in the atmosphere, according to IPCC experts'.

[4] Le Monde did as much, but is excluded from this partial report.

Table 5. Summary of content analysis. Each of the 31 notes identified was read to see if any of the information points from our Decision Grid (Table 2) was included in the coverage, when and from what source. (NYT=The New York Times; EP=El País; LM=Le Monde; LJ=La Jornada; REF=Reforma, EU=El Universal)

Information Point	Date/Newspaper	Source
Time evolution of mean global temperature	19/02/01 LJ	Osvaldo Canziani
	23/01/01 LJ	Unidentified IPCC Report
	18/04/01 REF	'Impacts, Adaptation and Vulnerability' report, 'Scientific basis and Special Report on Emissions Scenarios'.
	23/01/01 EP	No source
	03/04/01 EP	IPCC Third Assessment Report
	18/01/01 NYT	Shangai draft report
	22/01/01 NYT	IPCC report
Alternative hypothesis (Sun, glaciations, volcanism)	18/04/01 REF	No source
Relationship between greenhouse gases and temperatures rise	23/01/01 LJ	Unidentified IPCC Report
	18/04/01 REF	Unidentified IPCC Report
	23/01/01 EP	Unidentified Authors
	18/04/01 REF	Jorge Sánchez Sesma
	23/01/01 EP	IPCC experts
	20/02/01 EP	IPCC experts
	23/01/01 EP	IPCC experts
	19/02/01 EP	James McCarthy
	26/10/00 NYT	'The panel'
	28/10/00 NYT	Most recent IPCC synthesis report
	22/01/01 NYT	Shangai Report
	10/02/01 NYT	First Report
	19/02/01 NYT	First Report
	18/04/01 REF	Report
	23/01/01 LJ	Report
	03/04/01 EP	IPCC Third Assessment Report
	28/10/00 NYT	IPCC
	22/01/01 NYT	Shangai Report
	26/10/00 NYT	Panel members (interviews) / Kevin Trenberth
Anthropogenic origin of greenhouse gases	23/01/01 EP	The authors
	23/01/01 EP	IPCC
	23/01/01 EP	IPCC experts

Temperature projections from greenhouse gas emissions	22/01/01 LJ 18/04/01 RE 23/01/01 EP 19/02/01 EP 03/04/01 EP 26/10/00 NYT 22/01/01 NYT	Unidentified IPCC Report Unidentified IPCC experts James McCarthy James McCarthy IPCC Third Assessment Report Draft report Unidentified IPCC report
Impacts and vulnerability	19/02/01 EP 20/02/01 EU 18/04/01 RE 20/02/01 LJ 20/02/01 EP 19/02/01 NYT 22/02/01 NYT	'A United Nations study' No source 'A thousand pages document'/ Michael Zammit Ernesto Jáuregui / IPCC Report No source 'Impacts, Adaptation and Vulnerability' report Switzerland report
Scale (local /global)	20/02/01 EU 19/02/01 LJ 23/01/01 LJ 18/04/01 RE 23/01/01 EP 19/02/01 EP 20/02/01 EP 20/02/01 EP 03/04/01 EP 19/02/01 NYT 22/02/01 NYT	'A thousand pages document disseminated by the IPCC' 'Some researchers' Report No source 'Impacts, Adaptation and Vulnerability' Report Ohio University/ Greenpeace Studies IPCC Report IPCC Third Assessment Report' Analysis from an influent net of scientists' No source
Adaptation and mitigation	19/02/01 NYT 22/02/01 NYT 19/02/01 LJ 23/01/01 LJ 06/03/01 EP 19/02/01 LJ 10/02/01 NYT 19/02/01 NYT 18/04/01 RE 25/09/01 EP	'Impacts, Adaptation…' report Switzerland report Osvaldo Canziani Klaus Toepfer 'Climate change experts and 100 government representatives'/'An UN speaker' / Group III report Osvaldo Canziani 'A report scheduled for next month' 'Impacts, adaptation and vulnerability' report' 'Most of IPCC researchers' IPCC scientists/ 'A report to be published next October 1'

6. Discussion

The subject of quality in journalism has proven to be a tough nut to crack for both practising journalists and researchers in mass communication, but it seems plausible to argue that in the case of the climate change debate, back in 2001, the public would have been poorly served if at the end of a news cycle lasting roughly one full year the media has failed to recognise that a couple thousand scientists under the umbrella of the most respected organisation in the field

had reached a consensus on the most basic of questions: Yes, global warming is for real, and Yes, we, humankind, have been causing a good portion of it.

Yet our analysis shows that the three Mexican daily newspapers which arguably form the cream of the crop at the national level did just that: they failed to inform their readers about the strongest findings reported by the IPCC up to that moment. Furthermore, the combined total of 4 notes published on climate change by La Jornada, Reforma and El Universal seem to point to a serious difference between them and The New York Times, Le Monde and El País as far as editorial decisions are concerned. The 25 notes found in these foreign newspapers suggest that the Mexican Editors were either unaware of the seriousness of the issues presented by IPCC, or simply unwilling to devote the necessary means to give their readers a good coverage. Or both, indeed, because had it been merely a matter of placing climate change at the lower end of their editorial priorities, the Mexican newspapers would have had the possibility of covering all IPCC Meetings of 2001 with at least wire services and dispatches from news agencies. Instead, none of them had continuity throughout the news cycle, only La Jornada had more than one note during the whole year, and Reforma lagged until the first three meetings had taken place before publishing their first ink on the subject.

But the numbers – telling as they are – fail to touch on the gravest part of the analysis. To say that the coverage was poor because it was scant is not saying nearly enough. What exactly did the Mexican public miss out on? Was there any practical social value attached to the information they did not receive from these three major newspapers? To answer these questions the concept of quality of journalism has to be taken beyond the simple parameters of number and placement of notes. Indeed, it has to be turned into the concept of *functionality*: what good is journalism to its readers, beyond *infotainment* and scandal? What function does it serve in the life of the people it is written for? If we accept the notion presented here that journalism ought to strive to inform the decision processes to which the public, comprised as it is of free citizens, is entitled to, then the social value of the unpublished information should be gauged by its relevance to those very decision processes.

In such case, Table 4 proves that the Mexican newspapers analysed here seriously let down their readers by failing to inform them of the shift in the scientific debate regarding climate change up to 2001. Moreover, Table 5 offers further proof that the Mexican public reading any or all of these three newspapers would have been left ill-informed to decide on matters such as public strategies to mitigate emissions or to adapt, at both local and national scales, to the impacts identified by IPCC as likely or highly likely.

But at the most basic level citizens should have been given the necessary information to make up their minds about the very reality of global warming – for otherwise any discussion on adaptation would appear devoid of any sense – and the human contribution to it – or else the whole point of mitigation might have seem unnecessary. It appears that in Mexico the social

relevance of this information was lost on the very journalists who should have been on the alert for it.

7. Conclusions

We have developed a model of quality in journalism from its social function. By considering potential decisions the public might want to make on issues of interest and relating them to information points necessary to make those decisions, we have found a system in which these decision grids may systematically help journalists to prioritise vast amounts of information so as to guarantee that the coverage will not fail to serve its social function to the public.

Using this system as a diagnostic tool for content analysis we have reviewed the coverage of IPCC's Reports during 2001 in daily newspapers in Mexico and abroad. We found the Mexican dailies to be seriously lacking in relevant information for the Mexican public to have made decisions regarding global warming, its impacts, Mexico's vulnerability, adaptation strategies and available technologies. In contrast, the three foreign newspapers analysed had both broader and deeper coverage, both in terms of number of published notes and the information contained therein, touching on all but one of the information points from our decision grid.

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References

AFP (2001) 'Los científicos prevén un cambio climático incluso si se reducen las emisiones de CO2', *El País,* 25 September.

Agencias (2001) 'Los expertos advierten de que el cambio climático aumentará las sequías en el sur de Europa', *El País,* 19 February.

AP (2001) 'Global warming threat worsening, report says', *The New York Times,* 23 January.

Chanin M.L. and Fellous J.L. (2001) 'L´alteration du climat: une confusion entretenue', *Le Monde,* 16 January.

Crúz-Mena, J. (2002) 'La Ciencia del Periodismo de Ciencia,' in J. Tonda, A.M. Sánchez and N. Chávez (eds) *Antología de la Divulgación de la Ciencia en México*, 103-20. Mexico: UNAM.

DPA (2001) 'Naciones Unidas alerta sobre el recalentamiento global', *La Jornada,* 22 January.

Editorial Desk (2000) 'A sharper warning on warming', *The New York Times,* 28 October.

El País (2001) 'La ONU alerta sobre los impactos irreversibles del cambio climático', *El País,* 14 February.

El País (2001) 'Las emisiones de CO2 pueden reducirse con la tecnología actual', *El País,* 6 March.

El País (2001) 'Sin dudas sobre el calentamiento global', *El País,* 3 April.

El País (2007) 'Lluvia de Críticas contra Rajoy por Minimiar el Peligro del Cambio Climático,' *El País*, URL (consulted November, 2007): http://www.elpais.com/videos/espana/Rajoy/primo/cambio/climatico/elpvidnac/20071023elpepunac_5/Ves/

Ferreira, P. and Barba, A. (2001) 'La tierra se calienta', *Reforma,* 19 April.

Galus, C. (2001) 'Dramatique mise en garde de l'ONU sur le réchauffement', *Le Monde,* 21 February.

Galus, C. (2001) 'Les experts évaluent le cout de la stabilisation des émissions de CO2', *Le Monde,* 7 March.

Herbert, B. (2001) 'Rising tides', *The New York Times,* 22 February.

International Reuters, DPA and AFP (2001) 'Amenaza calentamiento global', *El Universal,* 20 February.

IPCC (2001a) *Climate Change 2001: The Scientific Basis.* Cambridge: Cambridge University Press.

IPCC (2001b) *Climate Change 2001: Synthesis Report. A contribution of Working Groups I, II and II to the Third Assessment Report of the Intergovernmental Panel on Climate Change.* Cambridge*:* Cambridge University Press.

IPCC (2007) 'Mandate and Membership of the IPCC,' URL (consulted November 2007): http://www.ipcc.ch/about/about.htm

Kempf, H. (2000) 'Les scientifiques prévoient un réchauffement accru du climat', *Le Monde,* 3 November.

Kovach, B. and Rosenstiel, T. (2001) *The Elements of Journalism: What Newspeople Should Know and the Public Should Expect*. New York: Crown Publishers.

Le Monde (2000) 'La température de la planète devrait se rèchauffer de 1,5 à 6 grades en 2100, affirment les scientifiques de l'IPCC', *Le Monde,* 3 November.

Le Monde (2000) 'Les preuves du réchauffement climatique', *Le Monde,* 3 November.

Le Monde (2001) ‘Climat: le climat devrait se réchauffer de 1,4 à 5,8 C d´ici á 2100’, *Le Monde,* 24 January.

Le Monde (2001) ‘Le cout humain du réchauffement de la Terre’, *Le Monde,* 21 February.

Mooney, C. (2004) ‘Blinded by Science: How ‘Balanced’ Coverage Lets the Scientific Fringe Hijack Reality,’ *Columbia Journalism Review* (6), URL (consulted November 2007): http://cjrarchives.org/issues/2004/6/mooney-science.asp

Morin H. (2000) ‘Le Xxe siècle a été le plus chaud du millénaire et le XXIe battra ce record’, *Le Monde,* 18 November.

Morin, H. (2001) ‘Dramatique mise en garde de l´ONU sur le réchauffement de la planète’, *Le Monde,* 21 February.

Morin, H. (2001) ‘Le XXIe siècle sera celui des phénomènes climatiques extremes’, *Le Monde,* 27 March.

Núñez, K. (2001) ‘Alerta por el cambio climático’, *La Jornada,* 19 February.

Revkin, A. (2000) ‘A shift stance on global warming theory’, *The New York Times,* 26 October.

Revkin, A. (2001) ‘Global warming’s likely victims’, *The New York Times,* 19 February.

Revkin, A. (2001) ‘Report to back forests to fight warming’, *The New York Times,* 10 February.

Rosen, C. (2008) ‘Analysis of Press Coverage of Climate Change in 2001 from a Functional Model Perspective. Science Journalism in National and Foreign Written Press’. Unpublished Undergraduate Thesis, Faculty of Social and Political Sciences, National Autonomous University of México, and General Direction of Science Communication, UNAM.

Salomone, M. (2001) ‘El nuevo informe del clima culpa a la acción humana’, *El País*, 23 January.

Smith C. (2001) ‘150 nations start groundwork for global warming policies’, *The New York Times,* 18 January.

Vázquez, L. (2001) ‘Los expertos advierten que el cambio climático ya tiene sus primeras víctimas’, *El País,* 20 February.

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