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**Imagining the Future at the Global and National Scale:**

**A Comparative Study of British and Dutch Press Coverage of Rio 1992 and Rio 2012**

## Abstract

Climate change and imagined futures are intricately linked, discussed by policymakers and reported in the media. In this article we focus on the construction of future expectation in the press coverage of the 1992 and 2012 United Nations conferences in Rio de Janeiro in British and Dutch national newspapers. We use a novel combination of methods, semantic co-word networks and metaphor analysis to analyse imagined futures. Our findings show that between 1992 and 2012 there was a switch from future-oriented hope to past-oriented disappointment regarding implementing international agreements on climate change policy. While the UK focused on global issues, the Netherlands focused on national (including colonial) and local ones, reflecting different views and expectations about the future of climate change adaptation and mitigation.

**Keywords:** future expectations, Rio, climate change, newspapers, semantics, metaphors, media

**Words:** 8348 words (excluding Acknowledgments, References and Figures)

## **Imagining the Future at the Global and National Scale:**

### **A Comparative Study of British and Dutch Press Coverage of Rio 1992 and Rio 2012**

#### **Introduction**

Public debates about climate change have evolved via long, slow phases of scientific agreement, and sudden, sometimes even drastic changes in how “climate change” has been defined and re-defined in a complex process of negotiation of meanings in both spatial (local-global; nature-society; science-policy-publics) and temporal (past-present-future) dimensions. As debates changed over time, so did actors and meanings. In this paper, we compare expectations about the future in the press coverage of the 1992 and 2012 United Nations conferences in Rio de Janeiro in British and Dutch national newspapers.

Climate change has been in the news for many years. It became a political issue in 1988 (Jaspal & Nerlich, 2012) and in 1992 the issue attracted not only international leaders from across the globe to the first Rio Earth Summit (United Nations Conference on Environment and Development), it also attracted increasing media attention. This attention peaked with the publication of *Climate Change 2007*, the Fourth Assessment Report (AR4) of the United Nations Intergovernmental Panel on Climate Change (IPCC). Since then media coverage and public attention have tailed off. However in 2012 international action was again on the agenda with the 20<sup>th</sup> anniversary Rio Earth Summit also dubbed Rio+20 (United Nations, 2011).

While climate change is a global issue, nations respond to it in different ways, both in terms of press coverage, public perception and policies. Between 1992 and 2012, communication and social science scholars have devoted increasing attention to studying

media reactions to issues related to climate change. There have been a number of comparative studies of media reporting of climate change (e.g. Anderson, 2009; Boykoff, 2007; Grundmann & Krishnamurthy, 2010; Nerlich, Forsyth & Clarke, 2012; Young & Dugas, 2012), but none so far has been devoted to a comparison of UK and Dutch media reactions to climate change at two crucial junctures in the climate change debate, namely 1992 and 2012. Moreover, media coverage in the Netherlands alone has so far also attracted relatively little scholarly attention (but see, van der Sluijs, van Est, & Riphagen, 2008; Versteeg, 2011).

The UK and The Netherlands share weather systems and climates and have coastal regions around the North Sea threatened by sea level rises and flooding. However, they have different geographies and national policy agendas regarding climate change. Comparing press coverage in these two countries at two points in time provides a unique opportunity to examine the construction of futures in spatial, political and temporal contexts that are similar and different in interesting ways. Both countries are expected to be severely affected by the potential effects of global warming, in particular in terms of sea level rise and flooding (DEFRA, 2009; IPCC, 2007; Veraart & Bakker, 2009). However, policy responses to climate change threats have been quite different. The Netherlands has a long history of flood protection policies that only recently considered threats of climate change as central. A National Adaptation Strategy, aiming at making the country “climate proof” was signed by ministries in 2007, and new advice by the Delta Commission, assigned by the Ministry of Transportation and Water Management, was signed in 2008 (Termeer, Biesbroek & van den Brink, 2011, p.45). Policy responses have focused on the adaptation to climate change as part of long-standing regional concerns about flooding. In the UK, policies around climate change have had a national focus, but with a view of becoming global leaders in climate change mitigation. Through the UK Climate Impacts Programme, the UK was the first country to include adaptation policy as part of law by enacting the Climate Change Act in November

2008. This led to the governmental Adaptation to Climate Change Programme in 2008-2011 (Jordan et al, 2012). Issues of flooding are normally addressed by the Department of Environment, Food and Rural Affairs, which implemented a Flood and Water Management Act in 2010 (DEFRA, 2010). Consequently, we would expect the UK newspapers to represent the UK as a world leader in climate change policies and the Dutch newspapers to pay more attention to national issues.

This cross-cultural comparison is also a cross-temporal one, as media reactions in The Netherlands and the UK will be studied at two crucial points in time, 1992, when climate change rose to international political prominence and with it climate science, and 2012, when climate science itself has become highly politicised and international political action has become all but impossible due in large part to polarisation of opinion (Painter, 2011). We focus on media reporting on the Rio meetings, with climate change as the key agenda point, given that, “[a]s a forum for the discourses of others and a speaker in their own right, the media have a key part in the production and transformation of meanings” (Carvalho, 2007, p. 224). These meanings reflect but also shape national policy responses to climate change over time.

In order to facilitate our cross-country and cross-temporal comparative analysis, we focus on the ways in which different meanings in the media create future expectations about climate change and indeed expectations about the future. The construction of future expectations will be studied in two complementary ways; first, by using semantic co-word analysis, which provides a first overview of core concepts and key actors in the national media in the two nations at two points in time; and second, by using metaphor analysis to study the emerging meanings and their construction by key actors in more qualitative detail. The results of our analysis reveal how different nations construct different futures in response to challenges posed by climate change. These constructions are linked to how nations deal

with their pasts and how they construct present responsibilities locally and globally. In the following sections we will explain the theoretical background on imagining futures in more detail, as well as our methods. We shall then go on to detail our findings and discuss their significance for environmental communication.

### **Conceptual and theoretical background**

Many studies have shown that climate change perceptions and media reporting changed substantially between 1992 and 2012 (e.g. Carvalho & Burgess, 2005; Kahan, 2012) with a heightening of attention around 1997 and the Kyoto protocol and the 2006 IPCC report. However things have changed quite dramatically since then, especially after 2009 and “climategate” (Nerlich, 2010). Most recently, Pidgeon has pointed out that “[d]espite extensive media coverage of the issue since 2006 there was a gradual decrease in public concern between 2006 and 2010. Possible explanations are issue fatigue, the impact of the global financial crisis, distrust, and the deepening politicization of the issue”(Pidgeon,2012: 85).This meant that the 2012 Rio+20 summit was held in very difficult circumstances compared to the 1992 one. This also meant that the futures that can be imagined at these two points in time in the past are probably quite different. This is just one aspect that turns climate change into a complex social issue.

A research line on the sociology of future (Adam, 2005; 2006, 2011) and the related sociology of expectations (Brown & Michael, 2003) has concentrated on the temporal construction of complex social issues, showing that future expectations play an important role as bridges mediating across different boundaries. Borup, Brown, Conrad and van Lente (2006) summarize the role of expectations: “Expectations are foundational in the coordination of different actor communities and groups (horizontal co-ordination), and also mediate between different scales or levels of organization (micro-, meso-, and macro –vertical co-

ordination). They also change over time in response and adaptation to new conditions or emergent problems (temporal co-ordination)” (p. 286).

In her critique of the metaphor of future as an empty territory to be colonized, Adam (2005) makes a distinction between “future presents” and “present futures” (also in Brown & Michael, 2003) in order to argue that the future is not an empty territory but already occupied by the future visions, plans and decisions of predecessors that have already materialized or are in the process of materialization (Adam, 2006, p. 8). Present futures are the realm of management, policy-making and organizational practice and refer to futures that are in the making in the present due to the complex interaction between the various actors making decisions in the present. In brief, present futures are under control in the present (Adam, 2006). In contrast, the concept of future presents refers to “not yet” futures, a world that we can set in motion, but over which we have no control. Notably, both present futures and future presents are grounded in present values and morals (Adam, 2011).

Adam stresses that “our present was our predecessor’s empty and open future: their dreams, desires and discoveries coming to fruition, their imaginations, creative innovations and impositions materialising in our present” (Adam, 2011, p. 593). The present and the future are relative concepts that constantly change over time when some sets of meanings are realized in the succeeding presents. In this way time also impacts space, as actions taken according to imaginations regarding futures will structure how we live on this planet and how it will look like in the future. The tension between the present futures and the future presents add an important dimension to social scientific research interested in the spatial axis of approaching complex social issues. In order to make our present futures and future presents visible, metaphors and frames can be used for anchoring fears and threats into their causes and solutions. However, these metaphors and frames change over time as particular decisions



are made in the inter-section of the various actors taking part in climate sciences and climate change policy.

### **Aims and objectives**

In this article we ask to what extent different media responses are shaped by experiences of national and global pasts and how they themselves contribute to shaping expectations of national and global futures. We compare these responses by focusing on media representations of two events, one in the past and contributing to experiences of the more distant past (Rio 1992) and one in the more proximal past (Rio 2012). We expect that the UK media representations of these events to be more focused on global aspects of climate change while the Dutch representations will be more focused on national issues because of different policy responses to climate change. Specifically, we asked the following research questions:

RQ 1: What future expectations were constructed in media responses to Rio 1992?

RQ 2: What future expectations were constructed in media responses to Rio 2012?

RQ3: How do these future expectations compare across media in The Netherlands and the UK?

### **Methods**

We use a novel combination of text analysis methods to answer our research questions and compare the semantics of co-occurring words and metaphors used to cover the Rio conference in 1992 and in 2012 in order to see what kind of expected futures (present futures vs. futures present) were constructed and circulated in the press (Lakoff, 2010). We focused on national newspapers because climate change adaptation policies are constructed at the state level (Termeer et al, 2011). Both Rio 1992 and Rio 2012 Summits were global events that are not likely to be covered by regional and local newspapers (Barranco & Wissler, 1999). Every

analysis comparing newspaper coverage in different points in time is vulnerable to problems of comparability of the newspapers across time and space (ibid., 301). We have tried to take this into account by collecting a large set of different, national newspapers and thereby reducing the potential bias introduced for example by only taking into account quality newspapers.

We will discuss potential comparability problems when discussing our results. We collected the UK and The Netherlands national newspapers during the conference in 1992 (11-13 June, 1992<sup>1</sup>) and in 2012 (20-22 June, 2012). We used the LexisNexis database for the Dutch papers and Nexis® Academic database for the UK newspapers to collect the articles (removing duplicates using a moderate similarity setting) using the search terms “Rio and climate” in English and “Rio and klimaat” in Dutch. Both countries are members of the European Union, which partly regulates the national agendas on climate change policy, in particular mitigation policies. Since the Rio meetings in both 1992 and 2012 were international climate meetings, we would expect the EU-level to be visible in the coverage in both countries and both years. Both countries are vulnerable to some of the predicted consequences of global warming, in particular the estimated sea level rise. We would expect the media in these two EU-countries to be particularly interested in both climate change adaptation and mitigation as policy responses to global warming in order to secure their own futures (also, Termeer et al., 2011).

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<sup>1</sup>The Rio 1992 Earth Summit took place, officially from 3-14 June, 1992, but the first weeks consists of preparation of the actual meeting taking place 11-13 June, 1992. We also conducted semantic maps analysis on 7 days preceding the meetings in both countries and both years. However, the three days during the meetings were most illuminating for our purposes, since the press in the Netherlands hardly covered the meeting a week before the starting of the meeting – publishing only 7 and 9 news items in 1992 and 2012, respectively, as compared to 45 and 62 news items published in the UK national press in the same time period. This difference in the number of news items in the two countries makes it impossible to compare the UK and Dutch coverage before the meeting. The number of news items during the actual meetings was almost equal in both 1992 and 2012 coverage in the two countries.

We selected national newspapers in both countries in order to be able to compare the coverage in two EU-countries, not just, as is more usual, EU countries and the US, for example (Grundmann & Krishnamurthy, 2010). The 2012 meeting attracted more attention than the 1992, but at the same time, many more newspapers covered the meeting in 2012 than in 1992. In 2012, for example, there were 13 Dutch newspapers covering the Rio+20 meeting, while in 1992 only 3 newspapers published on the meeting. This is partially due to the expansion and diversification of the news market and the inclusion of some online sources, such as, in the UK, Guardian Unlimited, for example<sup>2</sup> (Figure 1).

(Figure 1 near here)

We used a mixed methods approach to analyse the data: semantic co-word maps, and metaphor analysis. First, we drew semantic co-word maps extracted from the newspaper headlines used in 1992 and in 2012. This automated text analysis tool is designed to aid in comparing the levels of codification in different types of texts, such as scientific articles and newspapers (Leydesdorff & Hellsten, 2005) or to detect changing implicit frames in newspapers over time (Hellsten, Dawson & Leydesdorff, 2010) and has been validated through several case studies. The semantic maps method uses specific routines and open software to construct networks of co-occurring words using texts as data. First, the headlines of the news items were saved as a text.txt document, and a word frequency list was created using TextStat open software tool (<http://www.niederlandistik.fu-berlin.de/textstat/>). The word frequency list was saved as words.txt, and a stopword list of common words with little

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<sup>2</sup>In order to focus on the national coverage of the two Rio meetings, we included all the national newspapers covering the 2012 meeting instead of restricting the analysis on only those newspapers that covered the 1992 meeting. Hence, our analysis represents the whole overall attention to the meetings, and the content in the newspapers.

semantic relevance, such as “the,” “he” and “with” were compiled to the file stopword.txt to be removed from the analysis, and saved in the same folder with the text.txt. Second, aTi.exe routine, available at [www.leydesdorff.net](http://www.leydesdorff.net) was run in the folder containing text.txt, words.txt and stopw.txt. Plural s was automatically removed (e.g., the words “car” and “cars” were stemmed into the single word, “car”).

The routine calculates the co-occurrences of the headline words in the set of all the headlines, and automatically constructs matrices of words versus documents that result both in relational co-occurrence matrices and positional cosine normalized matrices (Egghe & Leydesdorff, 2009), using Salton’s Index (Salton & McGill, 1972). We used cosine matrices for the visualization. The cosine matrix uses the vector space for the visualization that represents coordinates instead of relational space. Distances in the visualization are based on similarity in the distributions of words in documents and not on the relations among words (Leydesdorff & Vaughan, 2006).<sup>3</sup>The routine, hence, calculates not only the relations of co-occurrences of words within one news headline, but also the positions of the relations of the co-occurring words in the whole set of documents using similarity in the distributions. In our case, we used headlines as the documents because newspaper headlines provide well-codified data for the semantic maps (Leydesdorff, 2012). The approach takes into account also triad words instead of just dyads, or co-occurring two words. This is because the routine captures also sets of several words that co-occur in several documents in the data set. We used the

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<sup>3</sup>The cosine is formulated as follows:

$$\text{Cosine}(x,y) = \frac{\sum_{i=1}^n x_i y_i}{\sqrt{\sum_{i=1}^n x_i^2} \sqrt{\sum_{i=1}^n y_i^2}} = \frac{\sum_{i=1}^n x_i y_i}{\sqrt{(\sum_{i=1}^n x_i^2) * (\sum_{i=1}^n y_i^2)}}$$

where  $x_i$  and  $y_i$  refer to the score of the  $i^{\text{th}}$  row (e.g., document) in column x or y (e.g., different words).

cosine normalized matrices for the network visualization in Pajek, an open network analysis and visualization tool (available at <http://vlado.fmf.uni-lj.si/pub/networks/pajek/>).

For the visualization in Pajek, we used the Kamada-Kawai graph layout algorithm that results in most readable maps (Kamada-Kawai, 1989). While the analysis was conducted using *ti.exe* programme, Pajek was used for the visualization of the *cosine.dat* file. (For more information on the *ti.exe* routine, see Vlieger & Leydesdorff, 2010). Unlike Visone (Baur et al., 2002; Brandes & Corman, 2003), the semantic map method developed by Leydesdorff (Leydesdorff & Hellsten, 2005) takes into account the positions of the co-occurring words in addition to the relations of these words. Brandes and Corman (2003) have introduced a visualization approach for evolving networks for the analysis of dynamic discourse but because our set of newspaper articles focuses on only two snapshots instead of continuous development over time, we used the software that is freely available at [www.leydesdorff.net](http://www.leydesdorff.net).

To complement the semantic maps that are based on the headline words of the news items, we close-read the full text of the newspaper items, and coded them paying attention to the main metaphors and the related frames. Metaphor and frame analysis is a qualitative text analysis method that has been used for several case studies on for example genetics and genomics (Nerlich & Hellsten, 2004), but also climate change coverage (Hassol, 2008; Nerlich, 2010; Nerlich & Koteyko, 2009; Nerlich & Jaspal, 2012; Ungar, 1992). The authors adopted the following coding procedures. The full text of the four corpora of newspaper articles (UK1992, UK2012, NL1992 and NL2012) were read repeatedly in order to extract salient metaphorical expression and their positive or negative tone. These collections of expressions were compared and integrated, after which the authors collated the expressions jointly into clusters of metaphors, which were then labeled according to the norms of standard (conceptual) metaphor analysis as introduced by Lakoff and Johnson (1980). Examples of metaphorical expressions are highlighted in the following, illustrative sentences: “She

rebutted his argument,” “Your claims are indefensible,” “She attacked every weak point in my argument” and so on. The overarching (conceptual) metaphor in this case would be: ARGUMENTS ARE WAR (usually rendered in small capitals). In this paper, we will discuss the most frequently used metaphors (Lakoff & Johnson, 1980).

This combination of methods allows us to compare the results of the semantic maps to more in-depth analysis of the development of metaphors and frames around the Rio meetings, and in particular what kind of futures were constructed via the use of metaphors of hope, progress and solutions as opposed to metaphors of hopelessness and disappointment, for example. We expect the latter to occur more often in 2012, after a series of summits that failed to live up to expectations, especially the 2009 Copenhagen summit which had coincided with the so-called climategate affair (Nerlich, 2010; Hellsten & Vasilieadou, in prep.).

## **Results: Rio Meetings in 1992 and 2012**

### **Rio Earth Summit in 1992**

In 1992 the Rio meeting was covered by The Guardian, The Times, The Independent and the Daily Mail. Altogether these papers published 18 news items in three days, which constitutes a rather small set of news items, but is sufficient for the semantic co-word analysis. The main topics in the UK coverage were closely linked to the formal agenda of the summit, emphasizing the various phases of the meeting, such as problems in reaching an agreement on the protection of forests (especially the Amazon), future action to be taken to reduce greenhouse gases, the financial settling of the costs of the climate change and biodiversity treaties and the population growth as well as political focus on the role of the US, as represented by the then American president George H. W. Bush and the actions taken by the then British Prime Minister John Major.

In the headlines the words Earth Summit, Rio, World, Major and greens connect the sub-topics focusing on the present, such as for example, signing the actual Treaty (left upper corner), the rhetoric used during the conference (right lower), the limited scale of protests (right below) and the agreement on US goods that should be taxed to pay for Rio agreements (lower right) as well as those focusing on the future, such as the pledge to stop the baby boom (right upper corner) and the struggle over ecology benefits (right middle), (Figure 2).

(Figure 2 near here)

In order to analyse these various sub-debates more in detail, we read the actual news items. In these news items, global warming was treated as one of the major global problems, including deforestation, the spreading of deserts and population growth – the other main topics of the Rio meeting: “The population explosion had replaced nuclear war as the greatest threat to the world, John major warned yesterday. If the baby boom continued it would destroy the world, the Prime Minister said.”(Greig in Daily Mail June 13, 1992).The political rhetoric of perceiving the planet Earth as a whole is prominent, as well as care for future generations. “Today we are here, not to argue for a national cause, but for the future of our planet”, John Major” (Brown in The Guardian June 13, 1992). This shift from the local-present to the global-future was noted by John Vidal, the Guardian’s environmental correspondent: “In three-and-a-half hours the ‘planet earth’ count was on 10, there had been at least dozen mentions of ‘our survival as a species’ and more than 20 ‘future generations” (Vidal, The Guardian 13 June, 1992). These urgent calls to save the planet (forests, rivers populations etc.) do not specify how this will be achieved. In 1992, the main issue seems to be

to attract attention to the global problem of the future, beyond national agendas, rather than specifying global or national solutions. Much is still undefined in this future presents.

In the Dutch newspapers, the Rio 1992 summit was covered by three national newspapers: Trouw, Algemeen Dagblad and NRC Handelsblad that published altogether 22 news items in 11-13 June, 1992. The main topics covered were the financial aspects of the summit, in particular EU-finance, protection of forests, and Dutch ministers meeting Presidents of former Dutch colonies during the meeting. The Dutch coverage consists of separate sub-debates that are not linked via specific words (Figure 3). The main connected cluster is linked via the word Rio (right upper corner), which connects sub-debates emphasizing the present, for instance, about the church being disappointed about the meeting (kerkenraad teleurgesteld<sup>4</sup>) and EU-billions spent on the summit (EG-miljarden aan milieutop). The second cluster is connected by the words leads (leidt) and Jan Pronk, the then Development Minister. The third, and only future-oriented connected cluster focuses on the EU policy on sustainable development (EG) (Figure 3).

It is noteworthy that the Dutch papers adopt a quite negative tone when covering the meeting, and words like “doubt”(twijfel), disappointed (teleurgesteld), and no money (geen geld) are present in the headlines. There is no sense of urgency related to climate change as a global future problem. Besides, the Dutch newspapers use the summit as a context for covering issues that are beyond the agenda of the Rio Earth Summit, but important for present Dutch national politics, such as Prime Minister Lubbers meeting with President Soeharto of Indonesia (right corner in connected cluster), Indonesia having been a Dutch colony, the crisis in Venezuela that led to president Perez not attending the meeting (left side in the second connected cluster) (Venezuela is situated very close to the Dutch Antilles in the Caribbean), and a meeting of President Venetiaan of Suriname and the Dutch Minister Pronk (lower right

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<sup>4</sup> All translations from Dutch to English are our own translations.



corner in the second connected cluster) (Suriname was a Dutch colony until 1975, and was still economically dependent on the Netherlands in 1992).

This orientation in covering the meeting as a present event, not linked to a significant future expectation, is a remarkable difference to the UK press. In other words, while John Major was calling for urgent global action that transcends national interests, the Dutch papers emphasized national interests and preoccupations. Where the coverage is global, it is linked to the Dutch colonial past.

(Figure 3 near here)

In summary, in the UK papers in 1992 the emphasis was on defining the planet as a whole in order to call for action to protect future generations, at a general level. This positioned the UK as taking the lead in finding solutions and shaping the still undefined future, marking a shift from future presents to present futures. In this sense, the political strategy is to call for urgent attention to climate change and other agenda points of the Rio 1992 meeting, as affecting everyone's future. By contrast, the Dutch papers used the Rio meeting as an opportunity to discuss local political issues and, at the same time, emphasize the importance of EU-policy on climate change, representing the transfer of responsibilities from national to trans-national level. However, the focus was still mainly on Dutch national politics, but seen through its global colonial past. In this sense, the Dutch papers represented the Rio 1992 meeting as a place for national politics to take place on issues not related to the Rio Earth Summit, without emphasis on future expectations.

### **Metaphors of Rio Earth Summit in 1992**

In the British newspapers, the Rio 1992 Earth Summit was metaphorised in terms of WAR, JOURNEY, DISEASE and a CIRCUS. However, the most prominent metaphor was the JOURNEY metaphor. The metaphors of JOURNEY are closely related to the common way of covering political processes in terms of steps into the future: “if such steps were not taken, he said, the earth would destroy itself” (Oakley & McCarthy, *The Times* June 13, 1992) or more broadly as a road: “As important as the road to Rio has been, what matters more is the road from Rio” (Brown, Rocha & Tisdall in *The Guardian* June 13, 1992), and milestone: “The Prime Minister said the climate convention and biodiversity treaty, both of which he had signed, were not the end of the road, they were crucial milestones” (Brown, *The Guardian* June 13, 1992). Metaphorising public issues in terms of steps taken on the road is an effective way of binding the present situation (e.g. one particular meeting) into a broader context of future steps to be taken. In this sense, the JOURNEY metaphor functions as a future-oriented way to approach public issues as processes instead of single events.

The metaphors of CIRCUS, WAR, and JOURNEY were also used in the Dutch newspapers, along with the additional metaphor of COLONIANISM. The most prominent metaphor was the rather disparaging CIRCUS metaphor. This constructs a present orientation, reflected in a general description about the Rio summit: “een politiek circus” (a political circus). In the same article, the metaphor of WAR was in use in terms of weapons “veel wapen gekletter” (a lot of saber rattling) in the same article (Knipen & Westerwoudt, *NRC Handelsblad* June 13, 1992). Again the focus is on the present meeting instead of future JOURNEY. Similar to the UK newspapers, the Dutch newspapers also used the metaphor of JOURNEY to discuss first steps taken in environmental protection, and the economic progress (voortgang), as well as obstacles that may impede the progress of the journey – but in the context of covering the Rio summit as taking place in the present: “De financiële kwestie is een van de grootste obstakels voor het wel slagen van de conferentie” (The financial issue is one of the main obstacles for

the success of the conference) (Steketee, NRC Handelsblad, June 12, 1992). Interestingly, the Dutch newspapers also used (or rather quoted) the metaphor of COLONIALISM in the coverage of Rio meeting: “Milieu-kolonialisme”, noemt Agarwal (environmental expert representing India in the meeting,) de westerse plannen met bossen” (Argawal calls the western plans for forests “environmental colonialism” (Schwartz, Trouw June 13, 1992). This is interesting in the context of a coverage that also deals with old Dutch colonies in the context of climate change.

### **Rio+20 meeting in 2012**

The Rio+20 meeting in 2012 was covered by The Guardian (and its online version Guardian Unlimited), The Daily Telegraph (and its online version, The Telegraph), The Independent (and its online version, i-independent), The Daily Mail (and its online version, Mail Online), The Express and The Times. These ten papers (including four online outlets) published altogether 49 news items on 20-22 June, 2012.<sup>5</sup> The main topics dealt with the various phases of the meeting, the expected weak results of the meeting, and comparisons between the 2012 meeting and that of 1992, with emphasis on the slow progress made in the past two decades. There was therefore both a looking back to the coverage in 1992 and a looking forward, with expectations of a better future being however rather muted.

Surprisingly, in 2012 the British newspapers used very long headlines compared to 1992, most headlines fitting barely into the limits of a tweet message of 140 characters. Consequently, the semantic map is more complex, showing several partly overlapping sub-debates. The most frequently used words are quite expectedly Rio+20, Summit and the name of the UK’s Deputy Prime Minister, Nick Clegg. In 1992 John Major, the then Prime Minister, had attended. In 2012 it was “only” the Deputy Prime Minister. However, also

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<sup>5</sup> The increase in the number of newspaper reporting on the Rio meeting in 2012 means increased amount of attention to the issue. Since we were interested in the media responses by national newspapers in the two moments in time, we included all national newspapers in 1992 and 2012.

words such as world, leaders, text, development, sustainability and Greenpeace show up prominently (Figure 4).

(Figure 4 around here)

Future expectations are discussed, but mainly through the lens of present actions taken by the industry leaders. A main focus, new in 2012, is on cutting CO<sub>2</sub> or carbon dioxide emissions (lower middle), a clear future-oriented climate mitigation strategy. There is no longer talk about forests or rivers like the Amazon, as in 1992. However, this future-oriented mitigation strategy is discussed as the present responsibility of “top firms,” that is to industry rather than governments. At the same time, the papers cover several cases of protecting nature, such as Greenpeace’s campaign to establish an Arctic sanctuary (left, upper side), and an experiment to drive solar-powered plane in Moroccan desert (right upper corner). The role of China is central in the semantic map, as part of growing concerns about developing countries and emerging economies increasing emissions. The focus on the Arctic replaces the Amazon and a focus on China replaces a focus on Brazil.

The 2012 Rio event does not create a positive future expectation. Rather, the overall tone is negative, as represented by the words disappointment and failure in the map and in the full news items: “... so why, 20 years after the first such summit, are they about to fail the world” (Lean, headline in *The Daily Telegraph*, 20 June 2012), or “more than 150 world leaders and ministers kick off the Rio+20 Earth Summit today amid widespread disappointment about the strategy they will adopt to put the global economic on a more sustainable path.” (Watts & Ford, *The Guardian*, June 20, 2012) or just plainly: “Rio: Killing the earth since 1992” (Delingpole, headline in *The Telegraph*, 22 June 2012). The meeting

was also described as washout (Lean in *The Telegraph*, 22 June, 2012) and hoax (Gray in *The Telegraph*, 22 June, 2012) leading to a rubber-stamp job (Watts & Vaughan, *The Guardian*, 21 June, 2012).

George Monbiot of *The Guardian Unlimited* (and leading green activist) noticed that in the draft text, headlined “Rio+20 draft text is 283 paragraphs of fluff” that:

In 1992, world leaders signed up to something called “sustainability”. Few of them were clear about what it meant; I suspect that many of them had no idea. Perhaps as a result, it did not take long for this concept to mutate into something subtly different: “sustainable development”. Then, it made a short jump to another term: “sustainable growth”. And, now, in the 2012 Rio+20 text the world leaders are about to adopt, it has mutated into “sustained growth”. (Monbiot, *Guardian Unlimited*, 22 June, 2012)

Compared to the calls for saving the planet (as a whole) by binding state-level agreements in 1992, in 2012 this has changed to a more present oriented focus on positioning big businesses as the leaders on the one hand, and the life-style of private consumers on the other hand, towards sustainability, or rather, as Monbiot put it, “sustained growth.” The focus is more on economic recovery than on “saving the planet.” On the other hand there were some initiatives that tried to force businesses etc. to contribute to reductions in greenhouse gas emissions. For example, *Mail Online* covers plans for forcing big businesses to report their CO<sub>2</sub> emissions (Gray in *The Telegraph*, 21 June, 2012), “Top firms “must file a greenhouse audit”, and “Latest plan by zealot Clegg for more red tape” (Cohen, *Mail Online*, 20 June, 2012). At the same time, consumers are exhorted, for example, to “Eat less meat” to save the planet” (Collins, headline in *The Daily Telegraph*, June 20, 2012). In summary, the newspaper coverage emphasizes future climate change mitigation via concrete present policy-actions and technology innovations that aim at decreasing of carbon dioxide emissions, hence

present futures. While the debate in 1992 aimed at putting climate change on the public agenda as a still undefined global problem (future present), in 2012 the UK papers report on the different presently oriented actions taken to reduce greenhouse gas emissions, and to protect vulnerable parts of the world, such as arctic areas (present futures).

In 2012, the Dutch national papers De Telegraaf, de Volkskrant, Metro, Nederlands Dagblad, NRC Handelsblad, Algemeen Dagblad, Boerderij Vandaag, Het Parool, Het Financiële Dagblad, NRC Next, Reformatorisch dagblad, SPITS and Trouw cover the Rio+20 meeting. Altogether these twelve newspapers published 41 news items. In the Dutch papers, the meeting is also covered as a failure. However, the papers point out that the Netherlands may not be such a failure as it hosts pioneering efforts to, for example, use renewable energy to power aeroplanes and providing train passengers with the option to calculate their transportation CO<sub>2</sub> emissions. Reference is also made to the exemplary role of the island of Aruba (which seceded from the Dutch Antilles in 1986) towards 100% sustainable energy economy. Again, as in 1992, Dutch politics still focuses on its colonial past and the present of the meeting. The Dutch papers emphasise that the Rio+20 meeting is overshadowed by the financial crisis in Europe, that has led several political leaders to refrain from attending the meeting, including the Dutch Prime Minister Mark Rutte, as well as Obama, Merkel and Cameron (anonymous in De Telegraaf, June 22, 2012).

In Figure 4 we have taken into account all headline words, because the Dutch papers used only 16 unique words more than twice. The debate was more fragmented in 2012 than in 1992, though distinctly present-oriented. The main clusters deal with Dutch delegates using renewable energy (frituurvet, frituurolie) to fly to the meeting (upper middle), the Rio meeting being overshadowed by the European financial crisis (left middle), and conflicting interests (botsende belangen) (right middle). The Dutch papers also mention the Copenhagen

meeting which is framed as having left a “hangover” (kater) (lower middle) which, probably, hinders clear thinking in 2012 (Figure 5).

(Figure 5 around here)

The Dutch newspapers pay attention to the consequences of climate change in developing countries, such as children dying as a result of polluted water (kinderen sterven vuil water) and the link to developed countries efforts to protect biodiversity while the list of endangered species is increasing (lijst bedreigde dieren planten groeit). Both UK and Dutch papers cover CO<sup>2</sup> emissions as the main cause of global warming, but in the Netherlands, this is linked to national, already existing innovations, such as a CO<sup>2</sup> comparison tool for train passengers (middle, reizigers, CO<sup>2</sup>vergelijking). Similar to the UK papers, the Dutch papers describe the Rio+20 meeting as a disappointment and a failure. For example, de Volkskrant describes the meeting as “Natuurlijk: als top is de top bijvoorbaat mislukt” (Persson, de Volkskrant, 20 June, 2012) (Of course, as a top meeting, the top has already failed), and “Slappe afspraken in Rio” (Weak agreements in Rio) “Vooruitgang van afgelopen 20 jaar wellicht in gevaar” (Progress of the last 20 years in danger) (anonymous in Spits, 20 June, 2012). The Reformatisch Dagblad suggests that the meeting should be called Rio minus 20 instead of Rio plus 20 meeting (anonymous in Reformatisch Dagblad, 21 June 2012).

The main focus, though, is on present innovations in Dutch business (present futures). For example, the airline company KLM uses biofuel made from discarded deep-fat fryer oil (chips are sort of a national dish in the Netherlands) to fly Dutch delegates to the meeting (anonymous in De Telegraaf & Heijne in de Volkskrant, 20 June, 2012). The fact that Queen Beatrix will fly “greener” also hits the headlines: “Koningin Beatrix gaat groener vliegen”

(anonymous in *Nederlands Dagblad*, 20 June, 2012). The news about the island of Aruba, part of the Antilles in the Caribbean, aiming at full sustainability in energy hits the headlines as well (Luttikhuis in *NRC Handelsblad*, 20 June, 2012). In both 1992 and 2012, the Dutch coverage focused strongly on presently relevant national issues, in 1992 on issues not directly linked to climate change, and in 2012 on Dutch innovations in climate change mitigation. The semantic maps of the Dutch newspapers are less structured because of the focus on a wider variety of local and national issues as compared to the more global focus in the British newspapers.

### **Metaphors in Rio+20 coverage in 2012**

The variety of metaphors used in discussing climate change has increased in the 2012 coverage as compared to that of 1992. While the basic metaphor of JOURNEY is still present in the coverage in both countries, there are a number of new metaphors such as BUILDING/CONSTRUCTION, TIPPINGPOINT/ LIMITS and RELIGION.

In the British and Dutch newspapers, the meaning of a JOURNEY has also partly changed, and is expressed in terms of steps back, no progress and dead end (UK papers), progress in danger, and journey backwards (Dutch papers). Over the last twenty years, the orientation of the metaphor of journey has changed, from forward look and future to backward look and past, but with some future orientation still present, albeit towards a bleak future.

The metaphor of CONSTRUCTION/BUILDING, that was not used in 1992, is frequently used in the UK newspapers, in terms of pillars, for example: “A key objective of the talks is to interlink ‘three pillars’ – economy, society and environment” (Watts, *Guardian Unlimited*, June 21, 2012) and building blocks: “Malik said basic building blocks would be needed to come up with a suitable measure” (Vaughan in *Guardian Unlimited*, June 21, 2012). This



metaphor implies global warming as a problem that can be solved by present political actions, and coordination between economy, society and environment. The related metaphor of BLUEPRINT is present in both the UK and the Netherlands papers, referring to Kyoto agreement as “a 6000 pages blueprint for action” (Vidal, *The Guardian*, June 20, 2012) and to Aruba as blueprint (blauwdruk) for other small islands towards generating sustainable energy (Luttikhuis, *NRC next*, June 21, 2012). Reference is also made to the Rio+20 meeting to “set up a blueprint” (Persson, *de Volkskrant* June 20, 2012).

In addition to the metaphors of CONSTRUCTION, the UK newspapers use another new metaphor, TIPPING POINT in the context of warnings about reaching the limits of planet Earth (Lean, *The Daily Telegraph*, June 20, 2012). Metaphors of BOUNDARIES and LIMITS are used in both the UK and the Dutch papers: “We cannot go on living beyond the Earth’s boundaries” (Vidal, *The Guardian*, June 20, 2012) and “draagkracht van de aarde” (carrying power of the earth) (anonymous in *Nederlands Dagblad*, June 22, 2012) or just simply: “De grens is bereikt” (the limits have been reached) (de Water, *de Volkskrant*, June 21, 2012). The metaphors of LIMITS and BOUNDARIES have been used frequently in covering environmental issues, already present in the title of the Club of Rome report “Limits to growth” published in 1972 (Meadows et al., 1972). They were absent in our 1992 coverage but reemerged in the 2012 one. These metaphors indicate that the future expectation is now defined in terms of present limitations.

In summary, in 2012, both the UK and the Dutch papers highlighted the Rio+20 meeting as a disappointment and a failure, setting a bleak future. The metaphors are linked to this more pessimistic view on encountering global warming. At the same time, the focus has changed from climate change as a state level policy and governance issue to that of businesses and companies – and to climate change mitigation. Present actions increasingly define future possibilities.

## **Discussion and Conclusion**

Our results show consistent differences over time and across the two EU-countries. While the coverage in the UK papers in 1992 focused on a yet undefined future (future present), and positioned climate change as one of a series of global problems, the Dutch papers used the Rio meeting to discuss presently relevant local political issues and implications for Europe in the present. The UK 1992 was characterized by a “future-presents,” where the future is still in the making, while The Netherlands had a present-orientation, with no well-defined future expectations. This may indicate a more general difference in the policy-making on climate change in these two countries, the Netherlands being more focused on the national interests related to climate change policy. In 2012, both the UK and the Dutch papers highlighted the Rio+20 meeting as a disappointment and a failure. The constructed futures in both countries changed from hope to disappointment. At the same time, the focus shifted from positioning climate change as a state level policy and governance issue to positioning it as the responsibility of industry and commerce. While in 1992 the future in terms of climate change was seen as generations away, in 2012, the coverage focused on the coming few years. In 2012, the coverage of both countries were characterized by “present-futures,” or futures that are in the making in the present due to the complex interaction between the various actors making decisions in the present in anticipation of (possible) futures (Adam, 2006).

### **Global vs. Local**

A notable difference between the two countries and the media coverage in 1992 and 2012 was the national, local focus of the Dutch press compared to the more global focus of the UK press. This is in accordance with our expectation of the UK press focusing more on global aspects and the Dutch newspapers to national and local issues. Each national press

focused on different temporal aspects and expectations of climate change. In terms of the distinction between “future presents” and “present futures” (Adam, 2005), present futures are in the realm of management, policy-making and organizational practices and actions in the present while futures presents are in the realm of present imagination on futures. In anticipation of the possible futures, the national focus of Dutch media is on climate change as a present future. One consequence of the present futures temporal focus in Dutch media is that responsibility for climate change is delegated to local practices of people and businesses. Such an approach may be beneficial for mitigating climate change by focusing on local solutions through specific actions.

On the other hand, UK media, especially in 1992, had a more global approach to climate change, positioning climate change as one of a series of global problems, and calling for urgent attention to climate change, as affecting everyone’s future. This focuses on different temporal aspects of climate change, namely climate change is a future present (Adam, 2005). The concept of future presents refers to “not yet” futures, i.e. futures that we can set in motion but where the consequences of our present actions are largely unknown. Future presents are not fully guided by the actions taken in the present. This complexity was well known in 1992 and is well known now, but it has increased over time, with more and more knowledge of weather and climate systems being accumulated which does not seem to reduce complexity and uncertainty but rather to increase it, and with political systems reacting in increasingly polarized ways to issues of climate change, globally and locally. One benefit of this temporal focus is that climate change is taken seriously as a global problem. However, at the same time it may depict the problem as “uncontrollable” and beyond solution. These differences in the expected and constructed futures have important implications for policy-making in the UK and the Netherlands. Policy-makers in both countries should be more aware

of the different actions called for in the context of different views on how global warming may affect their national futures in a European and global context.

### **Shifting Responsibility from Government to Business**

A notable similarity between the Netherlands and UK media coverage is the framing of climate change in 2012 as a responsibility of industry and businesses. Compared to the calls for saving the planet (as a whole) by binding state-level agreements in 1992, in 2012 this changed to positioning firms and big businesses as the leaders towards sustainability. Existing research on businesses in emergent strategies for addressing climate change in the Global 500 (Kolk & Pinske, 2005) has shown that there is still a great deal of managerial discretion in which paths are followed to reduce greenhouse emissions. Companies follow distinctive pathways, for example, as those under more flexible regulatory regimes may focus more on innovation. If the responsibility for climate change is shifting to businesses, this could mean a shift towards a focus on solutions, though far from any agreement on a common solution.

### **Disappointment in Rio 2012**

Another notable similarity between the countries media coverage are the 2012 negative framings of the Rio meeting. Both the UK and Dutch press depicted Rio as a disappointment and failure. The consequences of media framing of climate change have been well researched (Boykoff & Boykoff, 2007; Boykoff, 2008; Brossard et al., 2004; Carvalho & Burgess, 2005; Zehr, 2000). One consequence of this negative framing is the potential to create the public perception that climate change is such a complex social problem that coming to any solution will first result in a dead end. Rather than shifting responsibility to a nation, or to a set of business and industries, responsibility potentially becomes a mute issue as Rio solutions offer little hope for change. This may also be linked to climate fatigue (Brulle et al., 2012).

## Changing Metaphors Over Time

Metaphors of environmental risks have attracted scholarly interest in the context of the issue-attention cycle in news reporting (Downs, 1972). Notably, both countries in 1992 shared the metaphors of WAR, CIRCUS, and JOURNEY to describe Rio. In particular, the metaphor of a JOURNEY, which was used to characterize climate change in 1992 and 2012, shows consistency in how climate change is characterized over time. However, the meanings associated with the JOURNEY metaphor shifted considerably. Rather than a JOURNEY that has a road with reachable milestones, the journey in 2012 is a journey backwards or towards a dead end. Such metaphorical framings are consequential because they align with the well-documented culture of skepticism that has emerged since climategate (Dunlap, & McCright, 2011; Hoffman, 2011; Hoffman, & Forbes, 2011; Nerlich, 2010). At the same time, both countries shifted to metaphors of CONSTRUCTION and BLUEPRINT. Since the original 1992 meeting, metaphors have shifted towards a focus on the process of creating plans and solutions to the problems of climate change. These metaphors indicate that progress may still be possible.

In conclusion, our results show consistent differences over time and across the two EU-countries. While the coverage in the UK papers in 1992 focused on the planet as a whole, and positioned climate change as one of a series of global problems, the Dutch papers used the Rio meeting as a context for local political issues and, at the same time, emphasized the importance of EU-policy on climate change. In 2012, both the UK and the Dutch papers highlighted the Rio+20 meeting as a disappointment and a failure. This change is related to the shortening of the imagined futures, also visible in metaphors that emphasize backwards development instead of the optimistic future orientation that characterized the 1992 Rio Earth Summit coverage. These differences in future orientations may have policy implications for climate change as a global issue in these two countries. For example, there have been reports

that The Netherlands may face legal action over climate change because of not prioritising the reduction in greenhouse gas emissions (Harvey, 2012), or, as one blog said “Netherlands caused Hurricane Sandy” (Real Science, 2012). There is need for more research into the link between media representations of constructed futures and metaphors.

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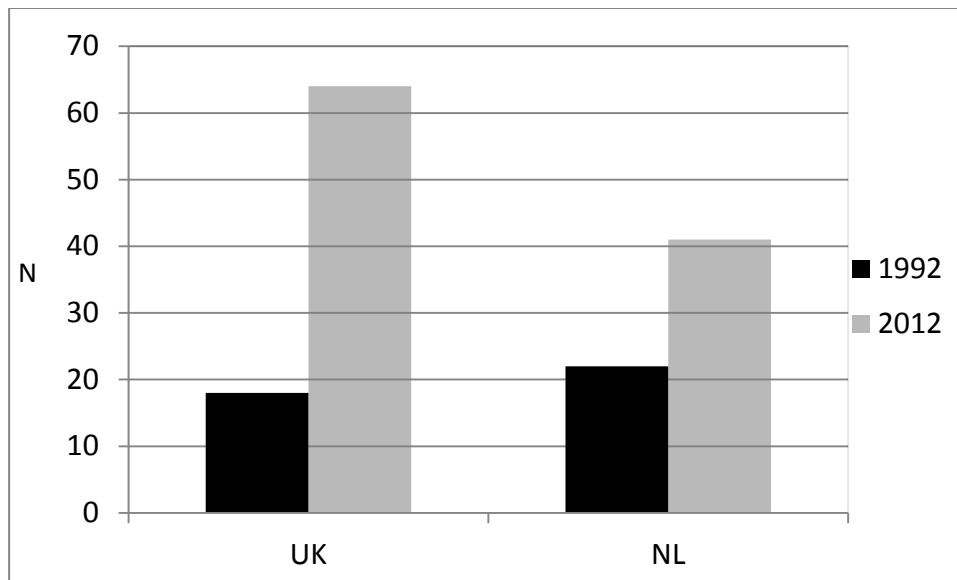
**Figures**

Figure 1: Newspaper articles covering the Rio 1992 and Rio+ 20 meetings in the UK and Dutch national newspapers



Figure 2: UK national newspapers on Rio Earth Summit in 11-13 June, 1992, 18 news items, 97 unique headline words, cosine $>0>0.691$ —using Kamada-Kawai algorithm

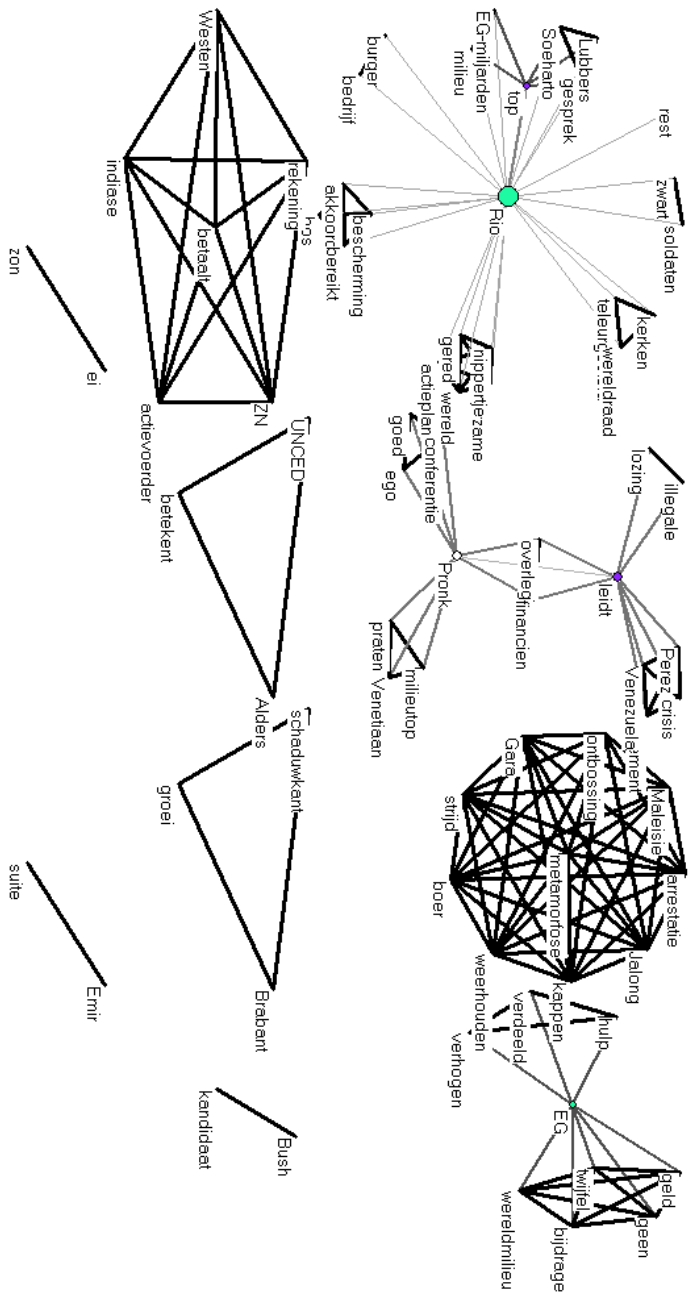


Figure 3: Dutch national newspapers on Rio Earth Summit, 11-13 June 1992. 22 news items, 77 unique headline words, cosine > 0.851 – using Kamada-Kawai algorithm

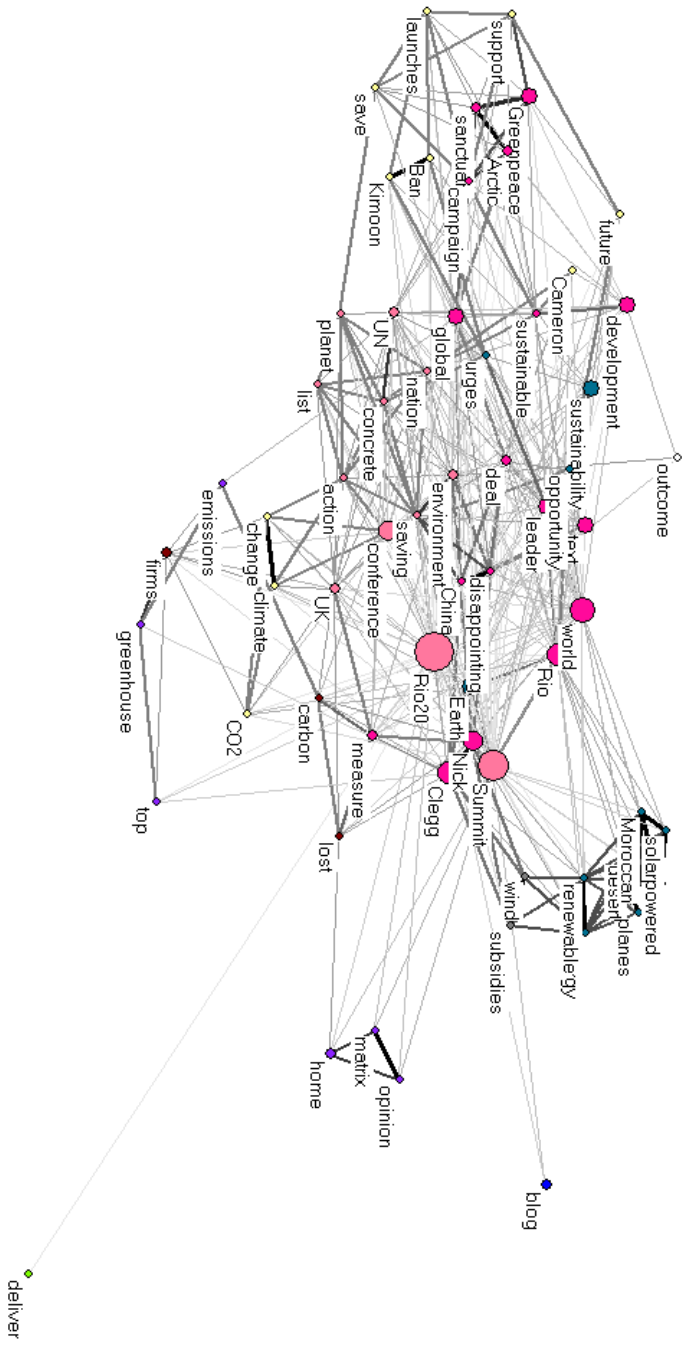


Figure 4: UK national newspapers on Rio+20 meeting, 20-22 June, 2012. 49 news items, 64 unique words occurring twice or more often, cosine $>0>0.385$  using Kamada-Kawai algorithm





Figure 5: The Dutch national newspapers on Rio+20 meeting, 20-22 June, 2012. 41 news items, 120 unique title words (all words included), cosine $>0>0.817$  using Kamada-Kawai algorithm