



# CHANGING CLIMATES

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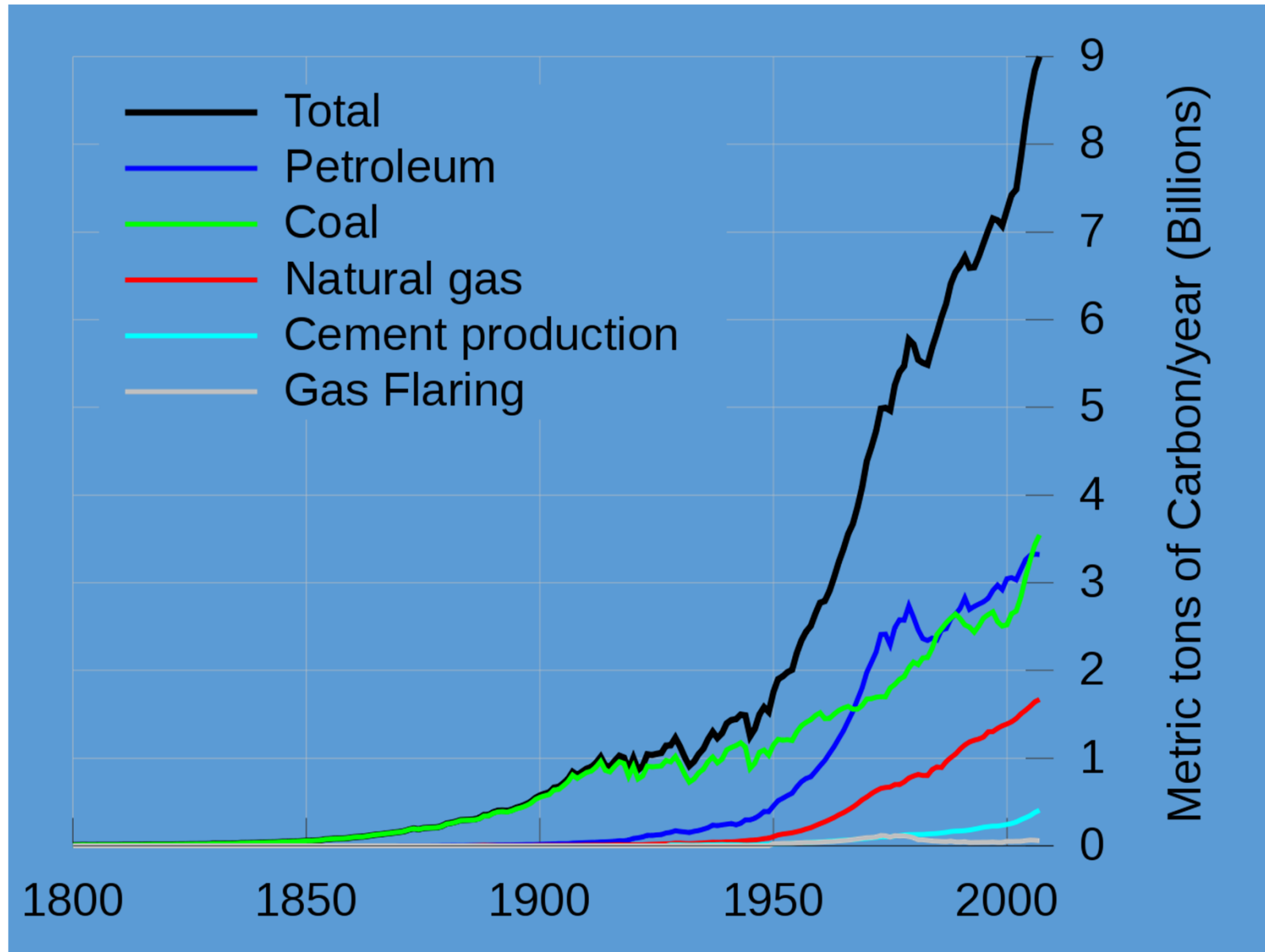
# THE PROBLEM OF ENERGY

**Schumacher: 'There is no substitute for energy. The whole edifice of modern society is built upon it....it is not "just another commodity" but the precondition of all commodities, a basic factor equal with air, water, and earth'**

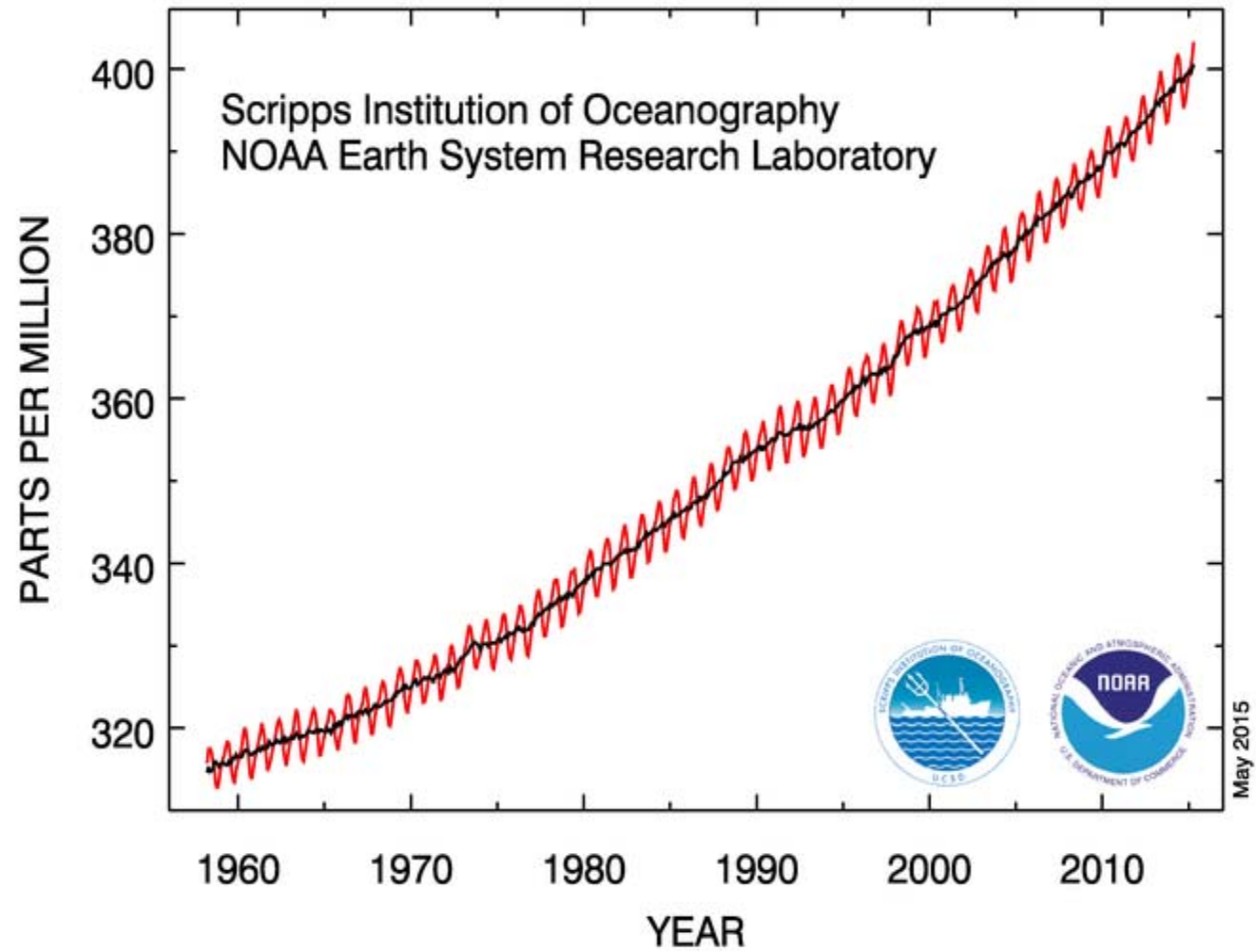
**McNeill notes that: 'We have deployed more energy since 1900 than all of human history before 1900'**

**Stern: climate change is 'the world's greatest ever market failure'**

# GLOBAL CARBON DIOXIDE EMISSIONS 1800-2010



## Atmospheric CO<sub>2</sub> at Mauna Loa Observatory



# CLIMATE CHANGE

- **20% risk of more than a 5°C increase in temperatures – increase beyond 2°C by 2050 now almost inevitable**
- **4 major potential non-linear transformations: Greenland ice sheet, Antarctica ice sheets and melting permafrost**
- **transformation of the world's physical and human geography**
- **reductions in overall population worldwide instead of 2-3 billion increase**
- **impacts especially in poorer countries – ‘climatic genocide’**
- **huge conflicts over the likely rate, scale and impact of change; and of the likely costs of mitigation**
- **the power of carbon capital in powerfully contesting climate change externalities – ‘merchants of doubt’**

# **‘HUMAN BEHAVIOUR’**

**The sciences of climate change make it clear that ‘human behaviour’ is central to ‘global warming’.**

**Climate change is not a purely ‘scientific’ problem - human actions are central to the apparent warming of the planet.**

**Such warming will only be slowed down or reduced if ‘humans’ around the world behave differently, if their social practices change from high to low carbon**

**There are many variations in the ways in which people understand the causes and consequences of climate change; future changing of the world’s climate depends upon patterns of social life now and in the near future**

# HIGH CARBON SOCIAL PRACTICES

- Overseas holidays
- Driving to the shops
- Showering daily
- The school run
- Drinking foreign beers/wines
- Second homes
- Climate control rather than clothing control
- Driving through well lit streets
- Dining out rather than in the home/collective canteens
- Global friendships
- Working on projects with a global team

# Dayrell and Urry (2015)

Article



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## Mediating climate politics: The surprising case of Brazil

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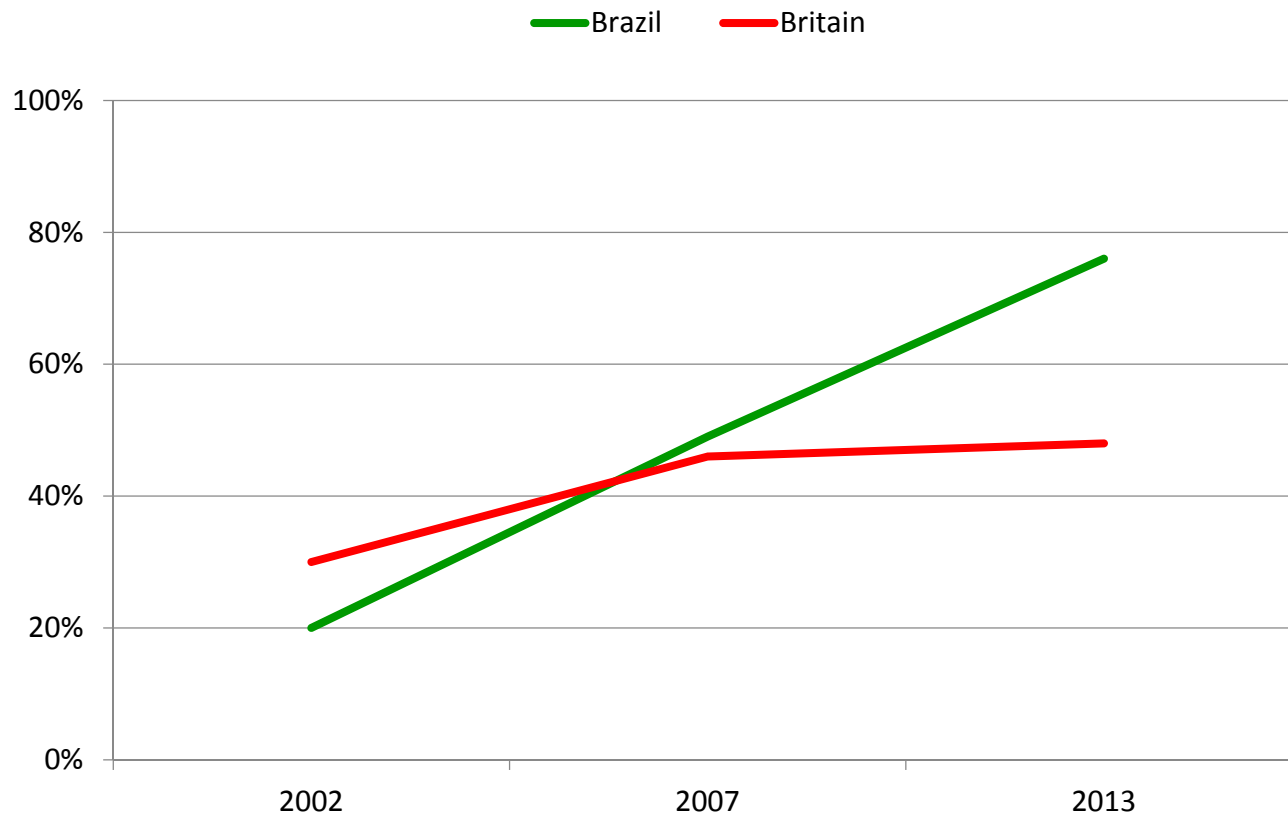
*Lancaster University, UK*

### Abstract

This article examines the centrality of Brazil within the future of climate policy and politics. The state of the carbon sink of the Amazon rainforest has long been an iconic marker of the condition of the Earth. Brazil has been innovative in developing many non-carbon forms of energy generation and use and it has played a major role in international debates on global warming since the Rio Earth Summit in 1992. We examine various ways in which climate change has come to be centrally important in Brazilian public opinion. Survey evidence shows that Brazilians are the most concerned about issues of climate change – with less climate change scepticism as compared with more ‘advanced’ societies. Through using techniques of corpus linguistics we examine how Brazilian media has engendered and stabilized such a high and striking level of climate change concern. We show that the media helped to fix a ‘climate change framing’ of recent often strange weather. The article analyses the newly constructed Brazilian Corpus on Climate Change, presenting data on a scale and reach that is unique in this area of research.

# PUBLIC OPINION IN BRAZIL/BITAIN – THE PUZZLE

**PERCENTAGE OF PEOPLE WHO REGARD ENVIRONMENTAL PROBLEMS  
AS A MAJOR GLOBAL THREAT**



Source : PEW (2007, 2013)

# OBJECTIVES

- 1. What concerns about global warming are revealed through talk and text in Brazil and Britain?**
- 2. How has climate change has been framed within large data sets in major newspapers in Brazil and Britain in the past decade (2003-2013)?**
- 3. Does the Brazilian data show high levels of concern about climate change? Does the data explain how and why Brazilians are so concerned with climate change?**
- 4. To what degree are the three main frameworks for responding to climate change, catastrophism, gradualism and scepticism, revealed in this corpus?**
- 5. What kinds of social practices do people discuss in relation to the causes and ways to mitigate climate change?**

# Why Corpus Linguistics?

- **to carry out a systematic analysis of a very large amount of empirical data**

⇒ Findings are based on a vast amount of evidence

- **to identify frequency patterns**

⇒ to identify salient patterns in the discourse

(Baker *et al.* 2013:25-26, Baker and Levon 2015)

Can Corpus Linguistics **supplement** or **replace** more traditional qualitative techniques?

***Baker and Levon (2015)***

- **Either method is likely to elicit dominant discourses around a topic**
  - ⇒ Neither approach yielded any contradictory findings
- **Corpus analysis**
  - ⇒ Picked up on repeated lexical patterns that pointed to a set of frequent representations (but did not appear in the down-sampled set)
- **Qualitative analysis**
  - ⇒ Uncovered discourses that were linguistically realised in more complex ways

# Brazilian Newspapers

19,268 texts (10.9 Million words)

Broadsheet papers
Folha de São Paulo
O Globo
Estado de São Paulo
Jornal da Tarde
Gazeta do Povo
Zero Hora
Diário Catarinense
Pioneiro
Estado de Minas
Correio Braziliense
Diário de Pernambuco
Correio

# British Newspapers

85,925 texts (61.8 Million words)

Broadsheet	The Times	The Sunday Times
	The Guardian	The Observer
	The Daily Telegraph	The Sunday Telegraph
	The Independent	Independent on Sunday
	The Herald	Sunday Herald
	The Scotsman	Scotland on Sunday

# British Tabloids

21,072 texts (9.8 Million words)

Tabloids	The Express	The Sunday Express
	The Daily Mail	Mail on Sunday
	The Sun	Sunday Sun
	The Daily Mirror	Sunday Mirror
	The Daily Star	Daily Star Sunday
	The Daily Record	Sunday Mail

# Query words/phrases (Gabrielatos 2007)

## British Newspapers

- *climate change*
- *global warming*
- *greenhouse gas(es)*
- *carbon emissions*
- *carbon reduction*
- *carbon cuts*
- *greenhouse initiative*
- *carbon trading*
- *renewable(s)*

## Brazilian Newspapers

- *mudança(s) climática(s), mudança(s) do clima*
- *aquecimento global*
- *gases-estufa, gases de/do efeito estufa*
- *emissões de carbono, emissões de CO<sub>2</sub>, emissões/emissão de dióxido de carbono*
- *redução das emissões, reduzir (as) emissões*
- *emissões globais*
- *IPCC*
- *UNFCCC*
- *Conferência/Convenção do Clima*
- *Protocolo de Kyoto/Kioto/Quioto*
- *temperatura global*

# Corpus Linguistics Methods

- **Keyword:**

- ⇒ words which are unusually frequent, or infrequent, in one corpus compared to another corpus

- **Collocational Analysis**

- ⇒ surrounding context of a given word

# Top Keywords in British Newspapers in 2007

climate  
pound  
carbon  
emission  
warming  
say  
mr  
energy  
Blair  
change  
global

# Mentions of the *IPCC* in 2007

<b>Occurrences of IPCC in 2007</b>	<b>British Newspapers</b>	<b>Brazilian Newspapers</b>
% of texts containing IPCC	<b>2%</b>	<b>17%</b>

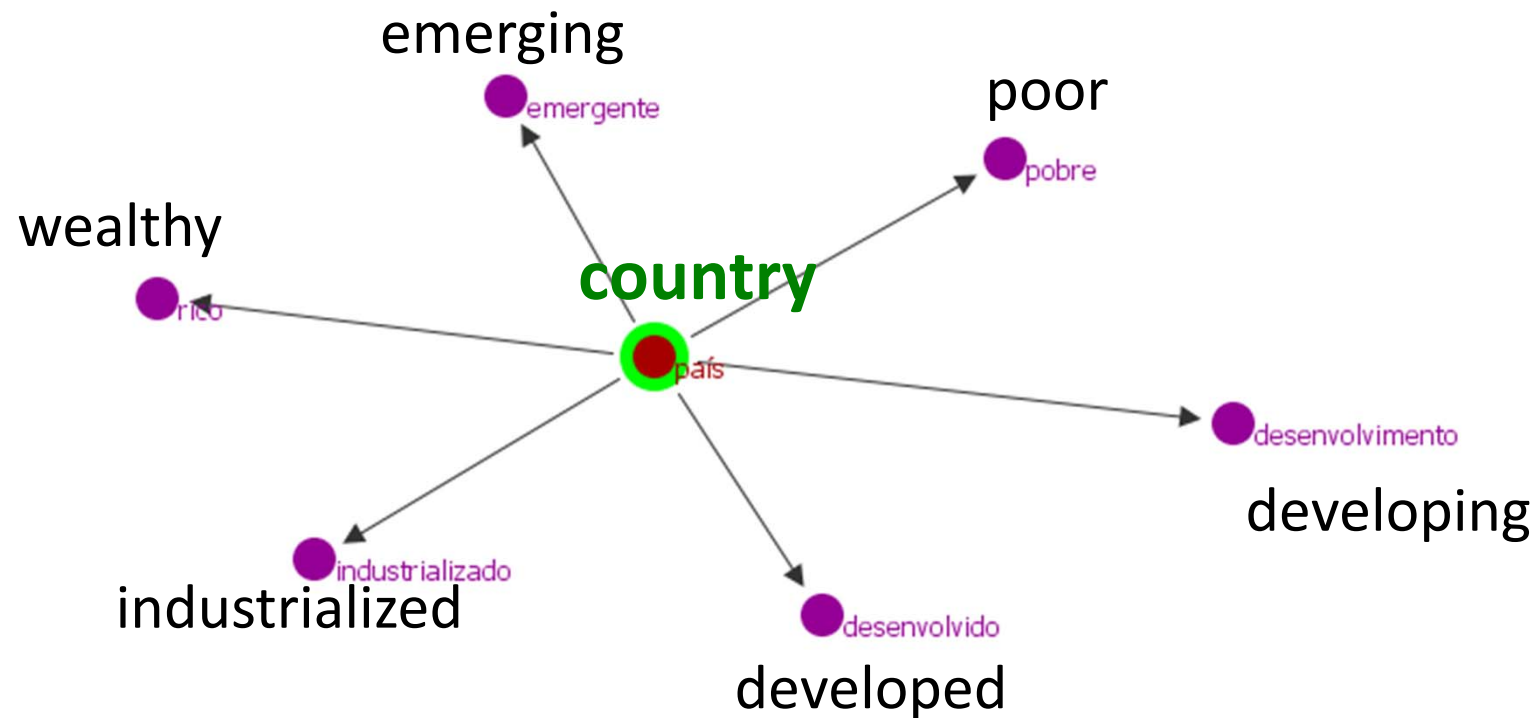
# Mentions of the *IPCC* in 2007

Occurrences of IPCC in 2007	British Newspapers	Brazilian Newspapers
% of texts containing IPCC	2%	17%
Frequency per 100,000 words	7	59

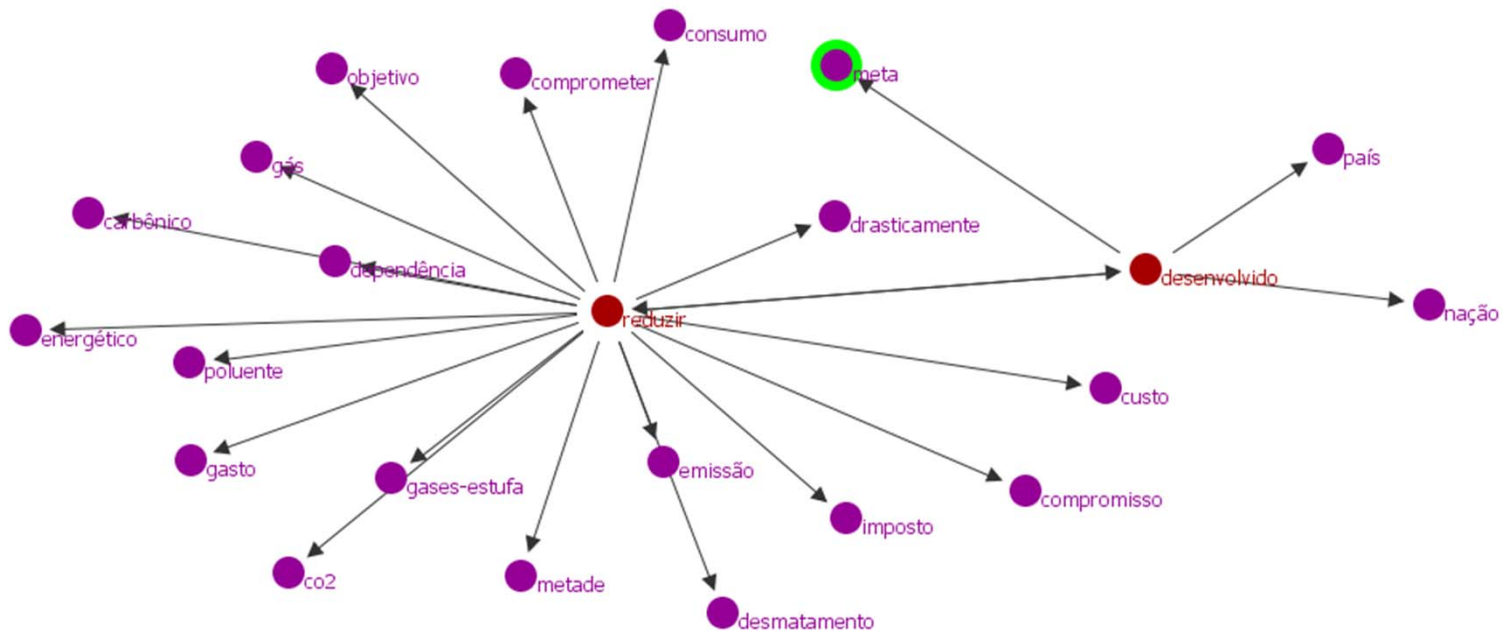
# *IPCC* as Keyword

- **No** instances in the **British** Newspapers
- Highly **frequent** in **Brazilian** newspapers from 2007 onwards

Brazilian newspapers frequently discuss the position of developed and developing countries



# What do Brazilian newspapers say about **developed countries**?



# Both should take action

O fato é que, hoje, 50% das emissões se originam em países em desenvolvimento. Mesmo que os países industrializados reduzissem a zero suas emissões, o problema não seria resolvido.

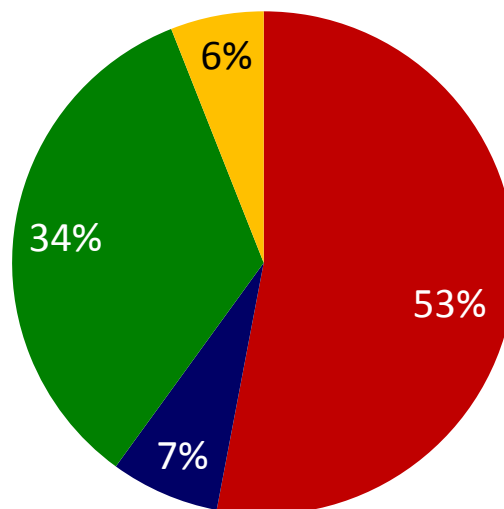
*Estado de São Paulo* - 20 April 2009

The fact is that, today, 50% of all emissions come from developing countries. Even if industrialized countries reduce their emissions to zero, the problem would not be solved.

# Brazilians' opinion

## Which countries are to blame for global warming?

■ rich countries      ■ poor countries  
■ both      ■ Don't know/ Refuse to answer

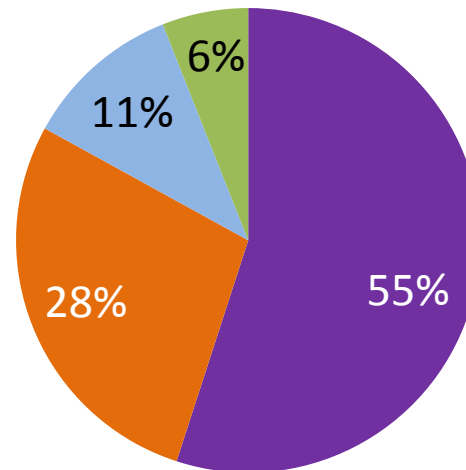


Source: CNI-IBOPE (2012)

# Brazilians' opinion

## Which countries should take action to fight global warming ?

- both equally
- both should work together but rich countries should do more
- rich countries only
- Don't know/ Refuse to answer



Source: CNI-IBOPE (2012)

Consequences of Climate Change are frequently discussed in **Brazilian** newspapers

- **Melting of the Greenland and Antarctic icefields**

⇒ *Artic and ice co-occurring with melt, melting, ocean*

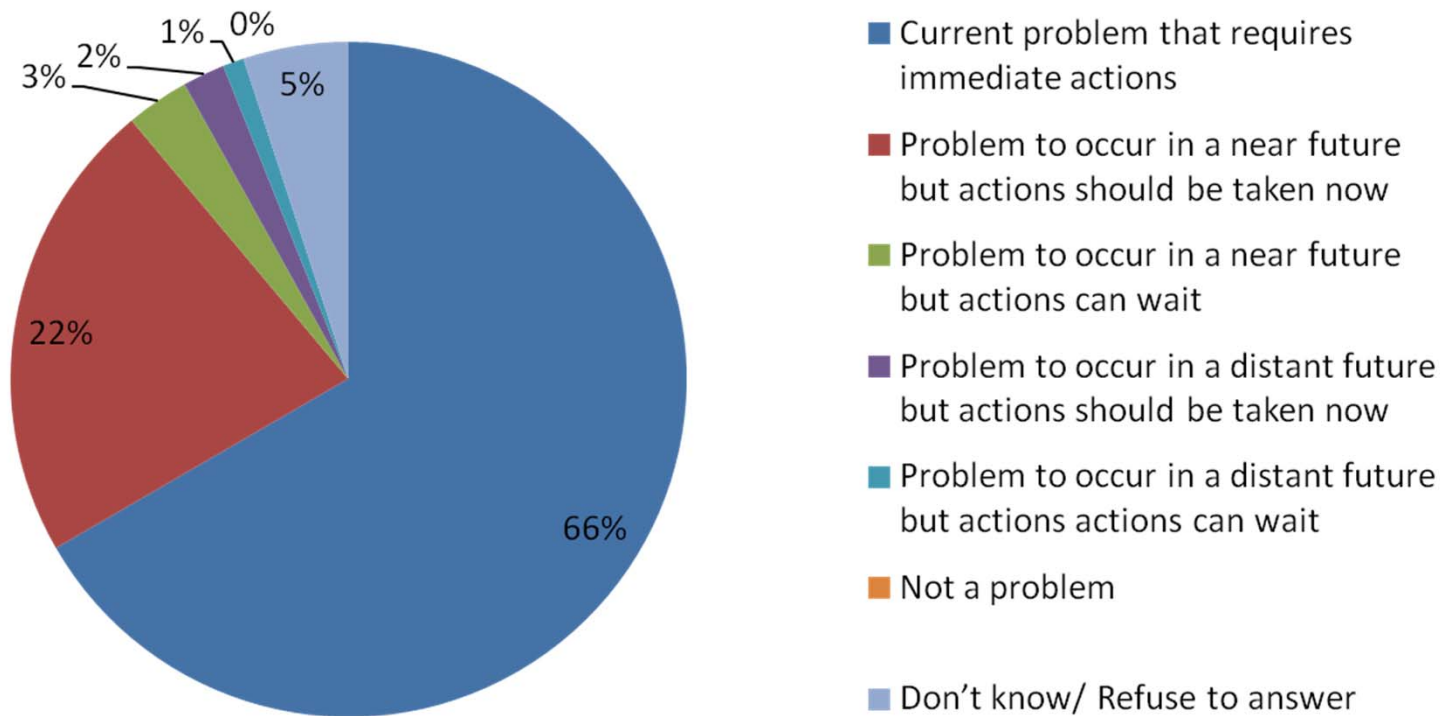
- **Impact of ecosystems and biodiversity**

⇒ *ecosystem and biodiversity co-occurring with loss, impact*

- **Increased frequency of ‘natural’ disasters**

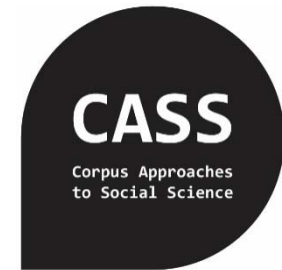
⇒ *hurricane, tsunami, even earthquake co-occurring with more, frequent, strong*

## Brazilians' discourse as to the urgency of the problem (CNI-IBOPE 2012)



Germany

Italy



Thank you!  
Obrigada!



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