



**Innovative integrated tools and platforms for radiological emergency preparedness and post-accident response in Europe**

**PREPARE**

# Why and how are mass media important in nuclear emergencies: theory and method for analysis

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RICOMET 2015 – 15-17 June,  
Brdo Castle, Slovenia



UNIVERSITÀ DEGLI STUDI  
DI MILANO



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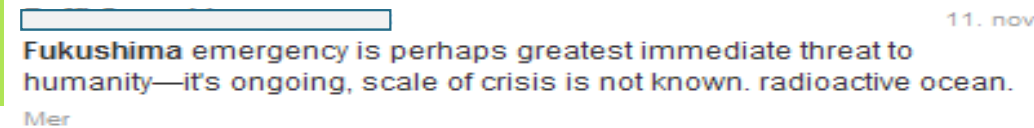


POLITÉCNICA





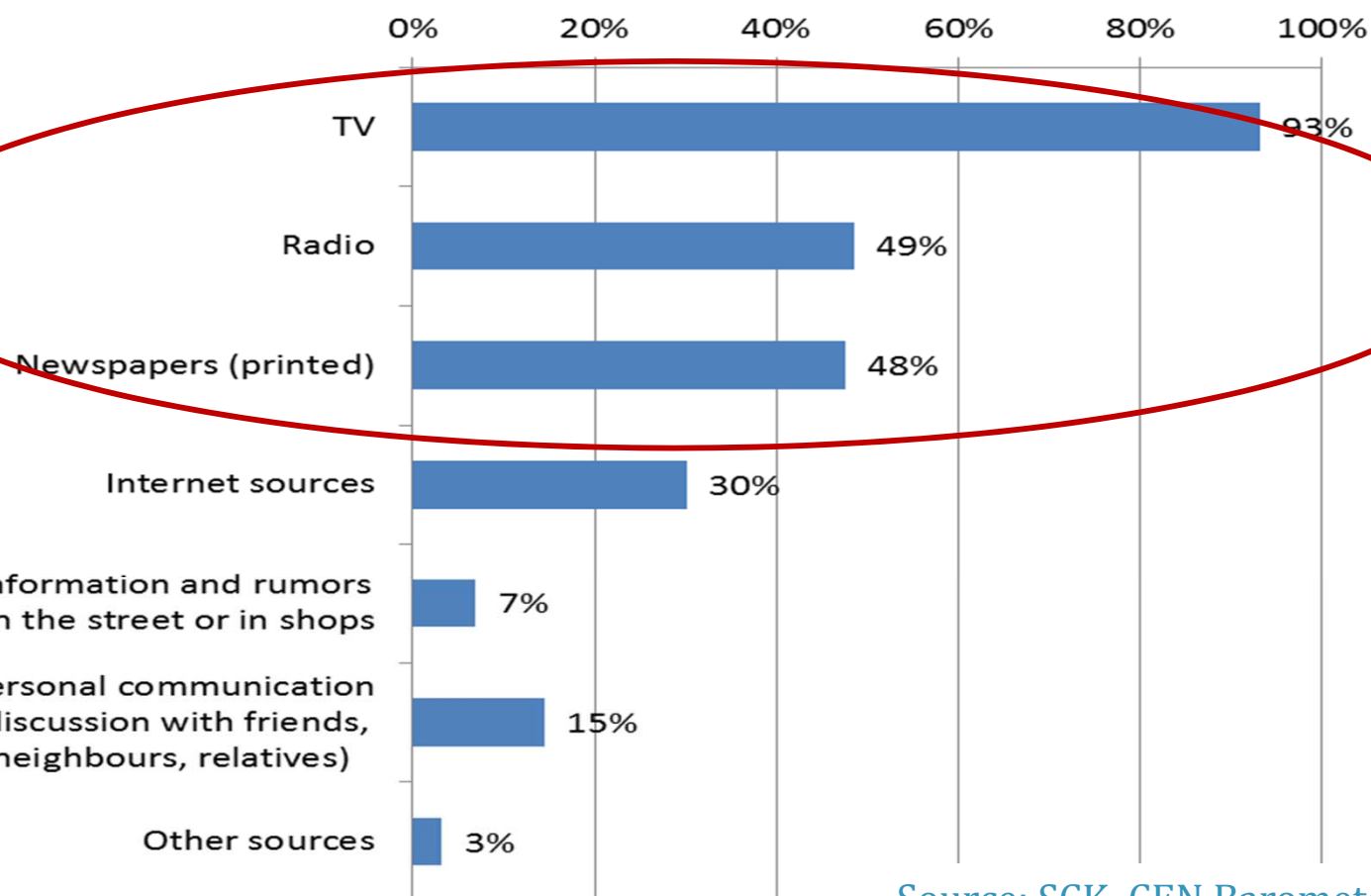
# Mass media = major source of information for general public





## Mass media use (Belgium)

### Which were your main sources of information about the Fukushima accident?



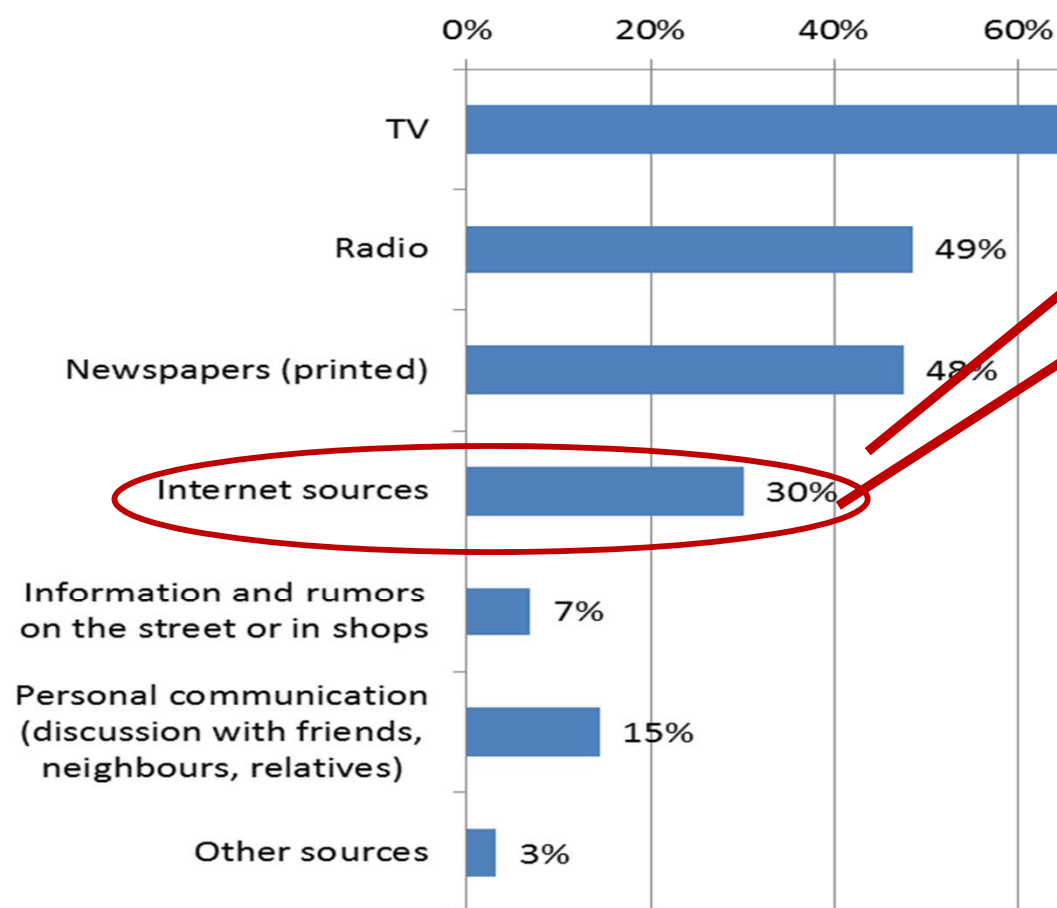
**TRADITIONAL  
MEDIA**

Source: SCK•CEN Barometer 2013, Turcanu C. & Perko T.

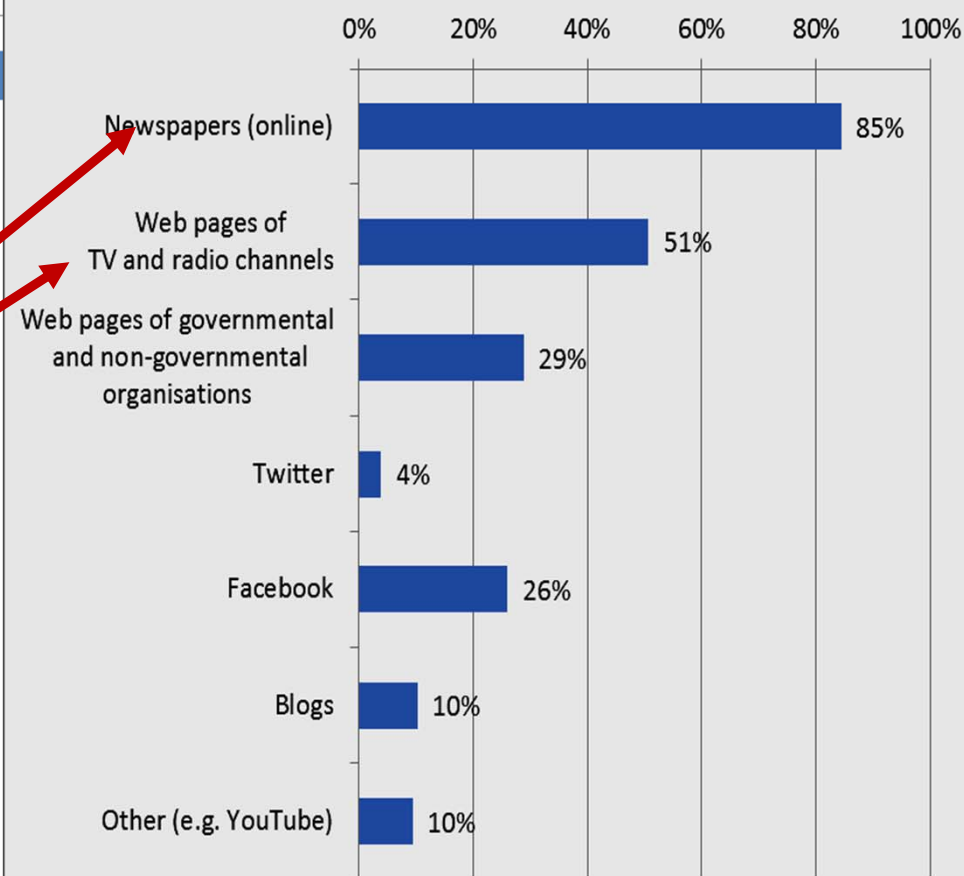


## Mass media use (Belgium)

### Which were your main sources of information about the Fukushima accident



### Use of information sources on the internet in the case of the Fukushima accident





## Media represent, interpret and construct the reality

- give a voice to different stakeholders (traditional media have a selection power,  
new media empower citizens journalism)  
Boomgaarden & de Vreese, 2007; Robinson, 2009; Schultz, Utz & Göritz ,2011
- play the role of a “watchdog” of society  
Rupar, 2007, 2010
- fulfil the economic aspects of publishing or broadcasting; *‘if it bleeds, it leads’*  
Berkowitz, 2008
- can create, shape or terminate a crisis (framing of the event)  
Kovach & Rosenstiel, 2007; Wilson, 1996
- (co)influence related political and public salience  
Vliegenthart & Walgrave, 2008



“Who sets the media agenda?”

McCombs, 2005



## “Who sets the media agenda?”

McCombs, 2005

### Inter-media agenda setting:

- An effect from **one medium on the other** in traditional media

Golan, 2006; Vliegenthart & Walgrave, 2008

- Continuous source cycle where **new and traditional media** influence each other

Wallsten, 2007; Meraz, 2011; Vliegenthart & Walgrave, 2008

- **YouTube** videos on traditional media      Sayre, Bode, Shah, Wilcox and Shah , 2010

- **Tweets** do trigger news stories and Twitter becomes an important tool for journalists

Broersma and Graham, 2012, Jungherr, 2014; Neuman, Guggenheim, Jang, & Bae, 2014;  
Skogerbø & Krumsvik, 2014

- **Blogs, TV, newspapers** influence each other

Messner & Distaso , 2008<sup>7</sup>



TELEVISION



PRINT MEDIA



RADIO

Is there more content?



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Is there more content?

- Increase of media outlets does not necessarily lead to an increase of news content

Boczkowski, 2010

- Media agenda is rather stable across news outlets despite growing diversification of information channels

Boczkowski and De Santos, 2007

- The homogenization of news (however, may not continue)

Lee, 2007

- More research is needed

Weaver , 2014



Rupar, V. (2010). *Journalism and Meaning-Making*; Hampton Press



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What is newsworthy  
for media in general?

Goiânia, 1987

Tragedy, drama

Event can be personalized



Tokaimura, 1999

New, unusual information



The Windscale, 1957

Extraordinary event

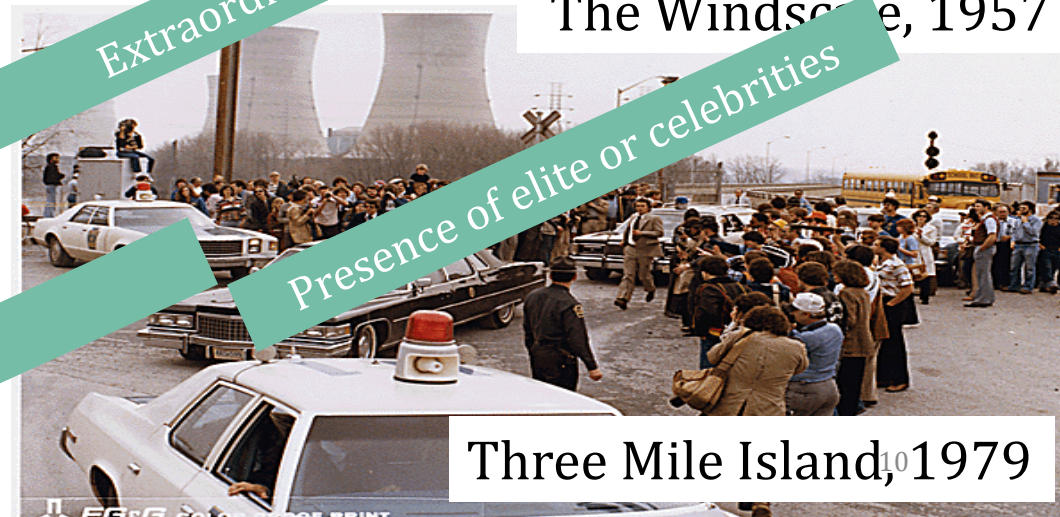
Chernobyl, 1986

Evokes emotional response

Conflict



Presence of elite or celebrities



Three Mile Island, 1979



## How and what did they report about Fukushima?



Photos: private archive, correspondent Veerle de Vos, VRT, Belgium<sup>1</sup>



## Media analysis of reporting on Fukushima

- Newspapers in the U.S. were more likely to provide **quantitative and factual information** than media reporting about previous nuclear accidents: Chernobyl or Three Mile Island.  
Kim & Bie, 2013
- American and Canadian TV networks mostly presented the Fukushima nuclear accident as **less severe than the Chernobyl nuclear accident**. Suggests that political or commercial alliances at the national level may – indirectly – influence media discourse.  
Katchanovski, 2012
- British journalists, compared to their German colleagues, dedicated less than **half the amount of attention** to the catastrophe.
- German and Swiss media focused much **more on the domestic relevance of the accident**.  
Kepplinger & R. Lemke, 2012

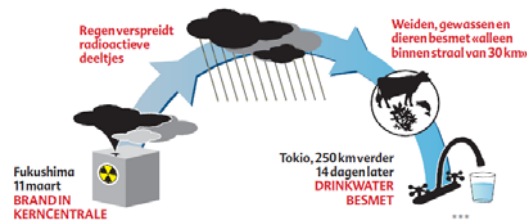
## Inoffensif, le premier bateau venu du Japon

Le premier bateau japonais à se présenter au port de Zeebrugge est arrivé à destination. Le Japon est le premier pays à avoir été touché par la catastrophe nucléaire de Fukushima.

Dans un premier temps, les autorités japonaises ont déclaré que le bateau était sûr. Cependant, des inquiétudes ont persisté quant à la contamination radioactive. Les autorités belges ont donc décidé de contrôler le bateau et ses cargaisons. Les résultats des contrôles ont été positifs, mais des mesures de précaution ont été prises pour protéger la population. Les autorités ont également lancé une campagne d'information pour rassurer les citoyens. Les médias ont largement couvert l'événement, soulignant l'importance de la sécurité alimentaire et de la protection de l'environnement.



## FEITEN SPREKEN OVERHEID TEGEN



## Media analysis of reporting on Fukushima

- Analysis of Belgian newspapers, shows that even though intensive efforts are dedicated in Japan to the agricultural areas, food and related environmental contamination, these aspects occupied a side role in the overall Belgian reporting.
- Limited attention has been given to the preparedness for nuclear emergencies.
- The most important issues identified in the relation to the presence/absence of radioactivity in the food chain or related environmental contamination were protective actions in the French language newspapers and radioactivity in food in the Dutch language newspapers.



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## Main criticism on traditional journalism in Fukushima

- Television reporting presented unrelenting and repetitive videos or broadcasting irrelevant graphics and interviews.

Friedman, 2011

- Lack of animated maps that would include a time series visualization of radiological effects, acquired data, for a coherent picture.

Hoetzlein, 2012

- The problem wasn't getting expert sources; it was vetting experts sources. Everyone with broadband had access to more expertise than a reporter could possibly read and absorb.

Sandman, 2011



*PREPARE*



## Goal WP6.3 *PREPARE*

The analysis of the use of respectively traditional media and social media in the context of the Fukushima accident.



To assess the contribution of the media to the quality of public information in the context of emergency, in the perspective of the Aarhus Convention.



**Recommendations** will be formulated regarding the use and interaction with mass media in case of **a nuclear emergency**

Content analysis of 1340 articles  
in six different countries

“Fukushima “ and “nuclear”  
March 11th - May 11th, 2011

Total articles

$N_B = 260$

$N_I = 270$

$N_N = 133$

$N_R = 172$

$N_S = 190$

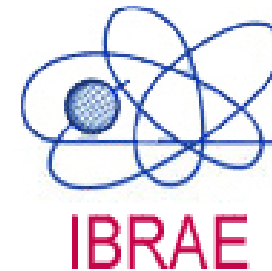
$N_{Sp} = 315$



Content analysis of 1340 articles  
in six different countries

“Fukushima “ and “nuclear”  
March 11th - May 11th, 2011

Acknowledgement:  
Joint research partner outside of the project

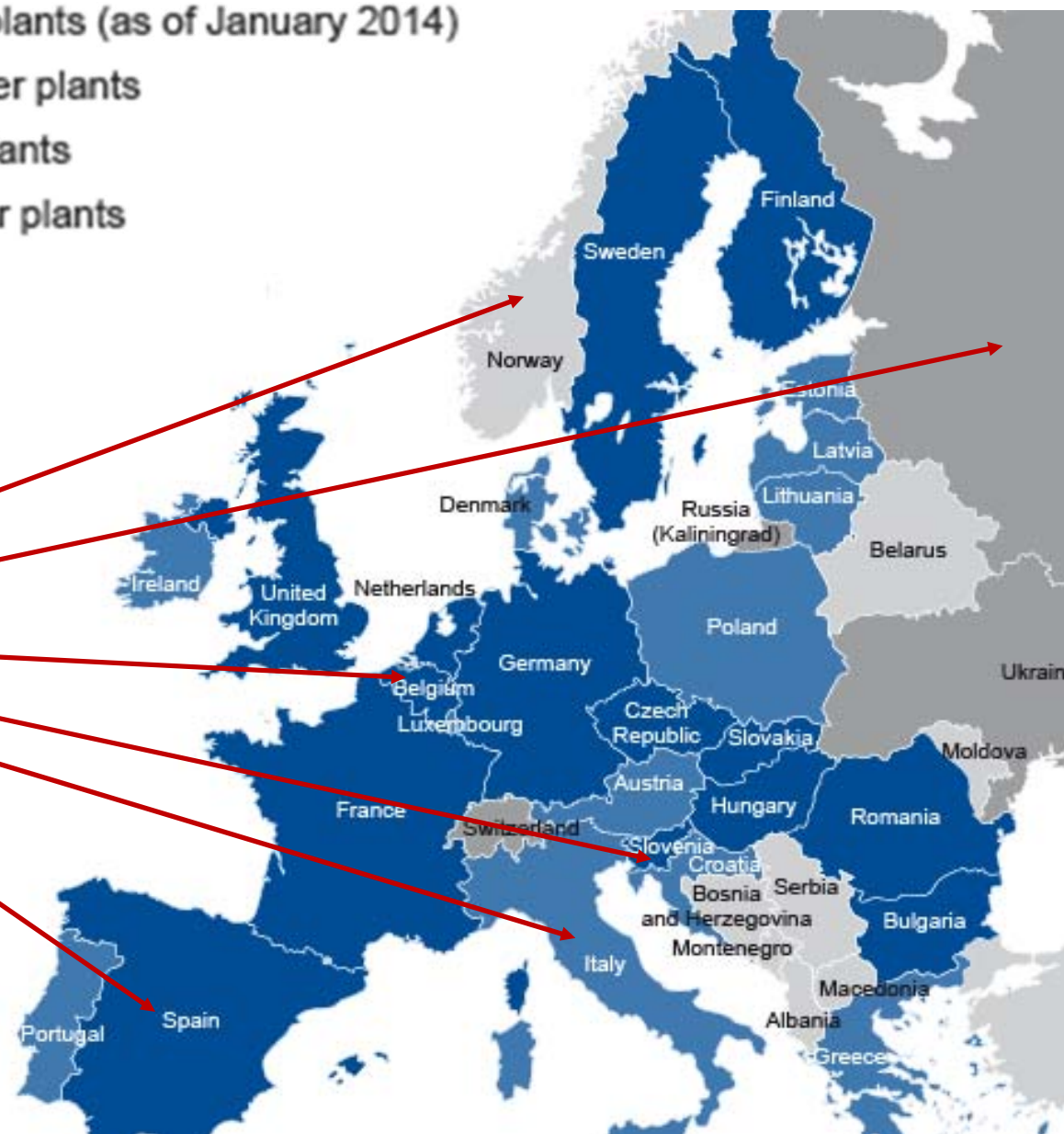


NUCLEAR SAFETY INSTITUTE OF THE  
RUSSIAN ACADEMY OF SCIENCES



- EU member states with operating nuclear power plants (as of January 2014)
- EU member states without operating nuclear power plants
- Non-EU countries with operating nuclear power plants
- Non-EU countries without operating nuclear power plants

Analysed:  
similarities and differences  
in reporting about Fukushima





# Scientific methodology Content analysis

Krippendorff, K. (2004) Reliability in Content Analysis.  
*Human Communication Research*, 30, 411-433.

Inter-coder  
reliability

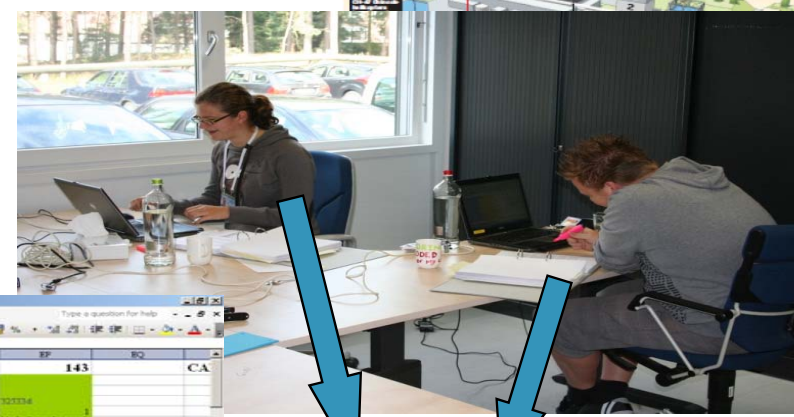
$\alpha$



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coder



CODES FUKUSHIMA		139	140	141	142	143	CA
SECTION	VARIABLE COMMENT						
1. META	Article ID, newspaper, number	32713	32717	32720	32723	32724	
2. META	Validity	1	1	1	1	1	
3. META	Title	Contaminated Japanese container discovered	Fukushima prepares to repair the reactor building and get better food	Workers enter the reactor building and get better food	Article compares Japan measures	Reactor makes an appeal to the nation	
4. META	Title translated in English	Contaminated Japanese container discovered	Fukushima prepares to repair the reactor building and get better food	Workers enter the reactor building and get better food	Article compares Japan measures	Reactor makes an appeal to the nation	
5. META	Date	04/05/2011	04/05/2011	04/05/2011	04/05/2011	04/05/2011	
6. META	Source	De Standard	De Standard	De Standard	De Standard	De Standard	
7. META	STATE	Belgium	Belgium	Belgium	Belgium	Belgium	
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9. META	PROOF	373	199	318	161	127	
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coder



## What was analysed?

### ➤ 200 variables:

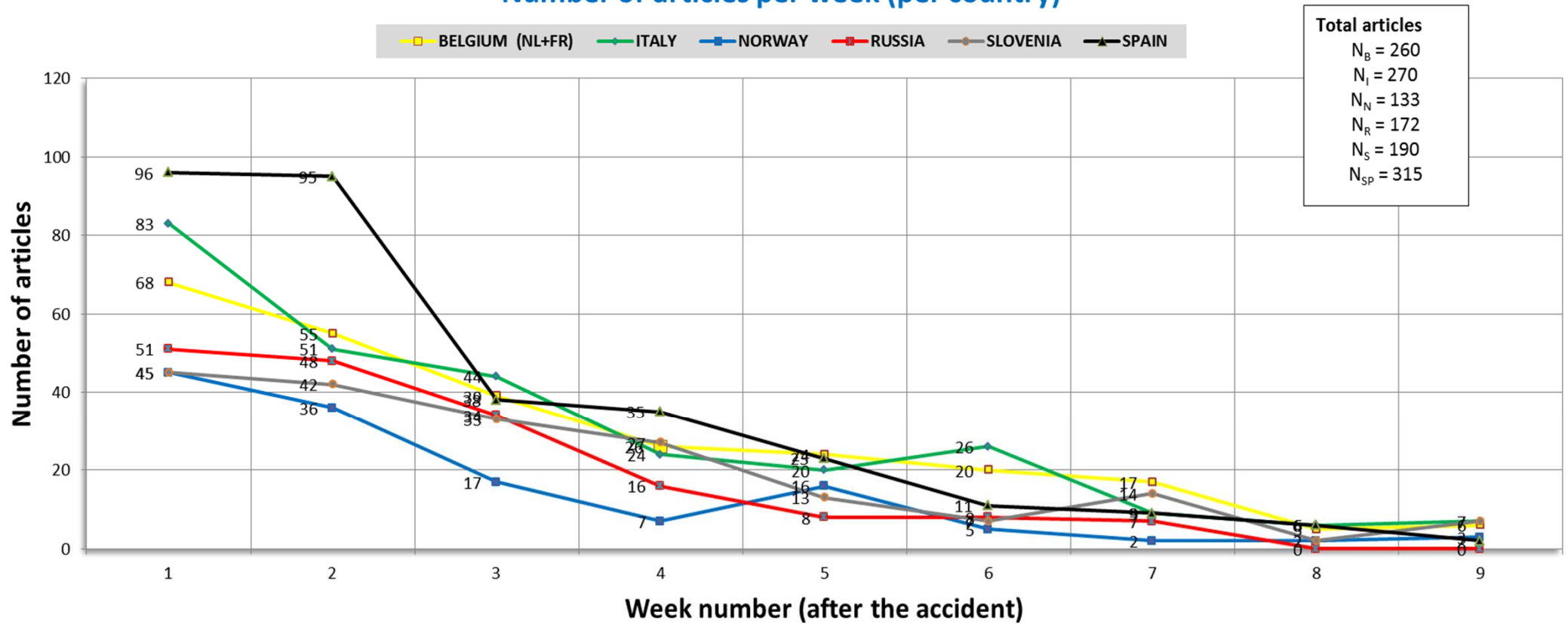
- media attentiveness,
- information sources,
- reported topics,
- conflicts reported,
- radiation measurements reported,
- risk comparisons,
- media interest in different emergency management aspects
- attitude towards nuclear energy...



# What was analysed?

## Media attentiveness

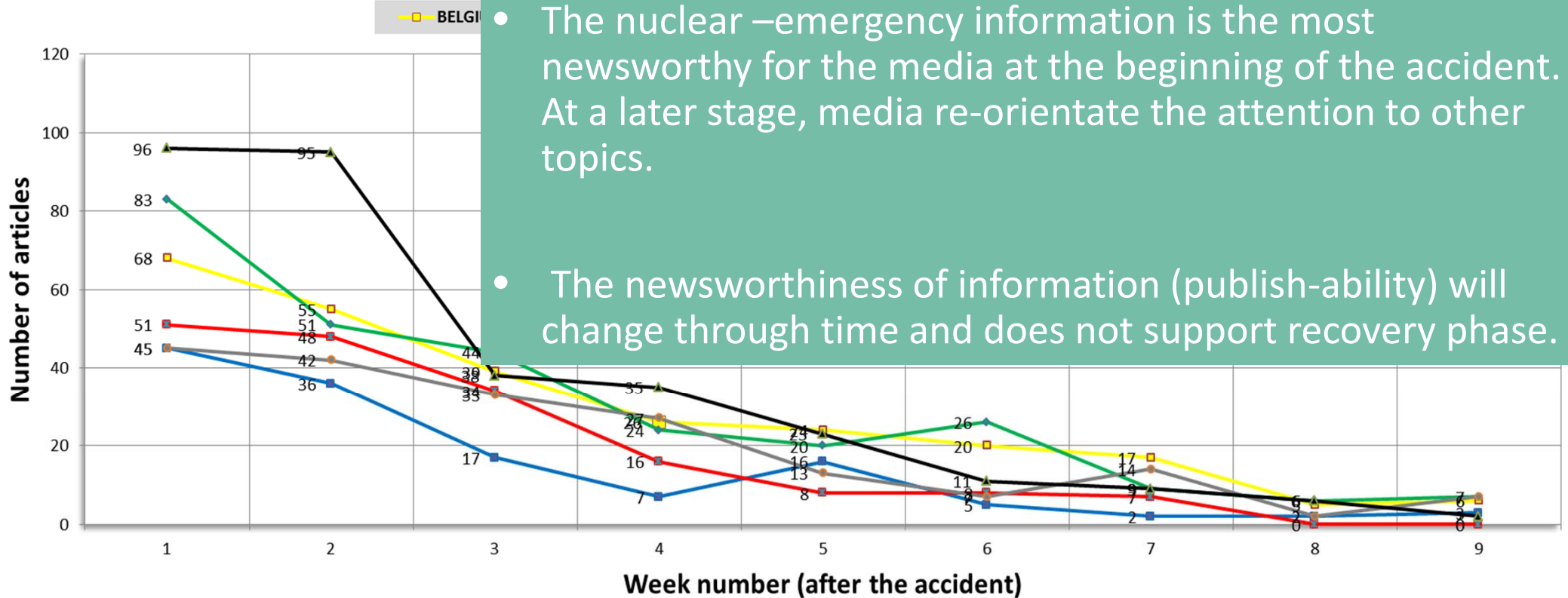
Number of articles per week (per country)





## What we can learn?

### Media attentiveness



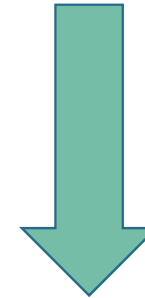


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Following Presentations



- **In-depth analysis**
- **Suggestions for discussion and recommendations**