Facts and feelings

Framing effects in responses to uncertainties about high-voltage power lines

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Publication date
2017

Document Version
Final published version

Published in
Proceedings of 21st International Research Society on Public Management Conference

Citation (APA)
de Vries, G., & de Bruijn, H. (2017). Facts and feelings: Framing effects in responses to uncertainties about high-voltage power lines. In Proceedings of 21st International Research Society on Public Management Conference (pp. 1-16)

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Framing effects in responses to uncertainties about high-voltage power lines

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IRSPM Corvinus University of Budapest, 20 April 2017

TenneT Taking power further

Climate change and power grid infrastructure

- Impacts: extreme weather
- Policy: international agreements on clean energy
- Need to upscale power lines to secure power supply

Public opposition

- Paradox
  - Secure (and green) power supply for public good
- Uncertainties
  - Health impact: leukaemia, Alzheimer
  - Visual, noise, environmental impacts
  - Drop in property value
- Costly delays

(Aas et al., 2014; Cain & Nelson, 2013; Linder, 1995; Wiedemann, Boerner, & Claus, 2016)

Responding

- Transmission system operators: media and public meetings
- Aim: Debunk misperceptions, provide correct information (adequate response)
  - Credible
  - Persuasive
- Policy:
  - Share factual information: cold, technocratic
  - Add feelings: more credible and persuasive? Or diluting effect?

Facts and feelings

- Empirical evidence in this domain is lacking
- Multi-phased research design
- Main question: “Is a fact-and-feelings response more persuasive and credible than a fact-only response?”

Research design

Phase	Research
1	Expert meetings: investigation of uncertainties and responses in the public debate on high-voltage power lines
2	Survey: assessment of persuasiveness and credibility of responses and stimulus checks
3	Experiment: comparing responses

Expert meetings

- Policymakers and communication professionals
  - TenneT (TSO)
  - Ministry of Economic Affairs
  - Ministry of Infrastructure and the Environment

- Role play actors
- Facilitated by TU Delft
- Four meetings (2015 / 2016)
- Identification of three frames and three responses

Expert meetings

Health-frame: “Research shows that there is a connection between living near high-voltage power lines and the occurrence of leukaemia among children.”

FACT: *“After more than 35 years of research, scientists have found no causal link between high-voltage power lines and leukaemia among children. That is to say, it has never been demonstrated that high-voltage power lines are responsible for the fact that people fall ill. However, it was discovered 15 years ago that children had a slightly increased risk of developing leukaemia if they lived near high-voltage power lines, but it was not possible to demonstrate that the disease was caused by the lines. It should also be stated that this relationship has not been evident in recent research. This all weakens the statement that there is a connection between high-voltage power lines and leukaemia among children, but not every trace of uncertainty can be eliminated. That is why we still adhere to the policy recommendation issued by the government in 2005, which is aimed at preventing new situations in which children spend long periods of time in the magnetic field zone of a high-voltage power line.”*

SAFETY VALUE (feeling): *“We are not a commercial enterprise; we operate in the public interest. Do you think that as a public body we would take risks by taking decisions that endanger your health? We always err on the side of caution. For us, safety is a core value. It is precisely because safety is so important to us that we make sure that where new high-voltage power lines are installed, nobody is forced to live in the magnetic field zone, while our engineers fit conductors in the pylons in a way that makes the magnetic field as small as possible. We do not take any irresponsible risks.”*

PERSONAL COMMITMENT (feeling): *“I know the stories and I’ll be honest with you: I would rather not live close to a high-voltage power line. But if I did not have that choice, it would be no problem for me at all to live near a high-voltage power line. That’s because I know there really is no evidence of risks to health.”*

Survey (online, March 2016)

Respondents

- Representative sample Dutch population (via research agency)
- Male: *N* = 441; Female: *N* = 440
- Age: *M* = 44.56, *SD* = 14.75 (18-70 years)
- 23.7% live near high-voltage power lines (self-reported)

Design (randomized within-subject)

- "Imagine news interview with TSO spokesman"
- Health-frame and – randomly distributed - three responses

Main dependent variables (1 = not at all; 7 = completely)

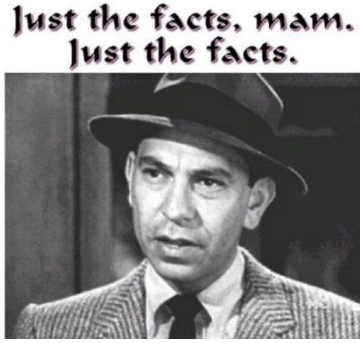
1. "How convincing do you find this response to be?"
2. "To what degree do you believe that the spokesman is telling the truth?"

(Stimuli were recognized as intended)

Health-Frame:	"Research shows that there is a link between living near high-voltage power lines and the occurrence of leukaemia among children."		
	Facts	**Values**	**Commitment**
Answer: 1 = not at all; 7 = completely	*M (SD)*	*M (SD)*	*M (SD)*
Convincing?	**4.19 (1.56)***	4.04 (1.52)	3.35 (1.64)
Credible?	**4.16 (1.52)***	4.04 (1.47)	3.61 (1.62)

*Significant highest result (analysis with paired t-tests)
Familiarity with this frame: Locals: 51.1%: Other: 38.9%
Other frames showed similar pattern

Quotes from respondents



"Factual answers (from study) are more credible"

"A spokesman is the representative of the company so his story is never a personal one"

"For me, it should be a combination of sound scientific substantiation and understanding of the health risk"

"In my opinion, it is important to provide information that is as honest as possible. The personal opinion of the person providing the information is not important. But it is good to show understanding. However, that understanding is related to hard facts from the studies. Caution, safety and transparency are the key words in this situation!"

"I would never use a sentence in the answer that puts your own credibility on the line. "Do you think I would have worked for 20 years for this company if it took risks with health?" *"Yes, I think so. In fact, if you put it that way, it immediately removes all the spokesman's credibility!"*

Experiment (online, June 2016)

Respondents

- Sample Dutch population (via research agency)
- Male: N = 190; Female: N = 222
- Age: *M* = 48,34, *SD* = 14,06 (18-70 years)
- 18.7% live near high-voltage power lines (self-reported)

Design (randomized between-subject)

- Short videos showing TSO spokeswoman respond to health-frame (actress)
- Fact-only response vs Fact-and feelings responses

Main dependent variables

- Same as in survey: persuasiveness and credibility
- Also questions on likeability and competence

Health-Frame:	"Research shows that there is a link between living near high-voltage power lines and the occurrence of leukaemia among children."			
	Fact-only response	+ Values	+ Personal	+ Values + Personal
	N = 89	*N = 84*	*N = 68*	*N = 90*
1 = not at all; 7 = completely	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*
Convincing?	3.47 (1.73)	*3.69 (1.37)*	*3.32 (1.57)*	*3.83 (1.59)*
Credible?	3.75 (1.71)	*3.90 (1.32)*	*3.63 (1.56)*	*4.04 (1.55)*
Likeable?	3.46 (1.65)	*3.52 (1.34)*	*3.69 (1.50)*	***4.04 (1.50)****
Competent?	3.83 (1.68)	*3.95 (1.48)*	*3.81 (1.52)*	*4.03 (1.59)*

- Deviates significantly from answer that participants gave who had seen the purely factual response
- There was a fifth condition: Empathy + facts (N = 81); no significant effects

Conclusion

- A fact-and feelings response is not more convincing and credible than a fact-only response.
- However, it does evoke sympathy.

Discussion

- Fact-only response experiment less credible than in survey (vividness video, source expectations?)
- Generalizability to other sources (image TSO?)
- Generalizability to other risk domains (level of controverse?)
- Self-reports: is actual persuasion important here?

End

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