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# Communicating Health Risk Uncertainty: Busting the myths

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University of Manitoba



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*“Then we’ve agreed that all the evidence isn’t in, and that even if all the evidence were in, it still wouldn’t be definitive.”*

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# Study Objectives

- To evaluate empirical studies of communicating uncertainty to the public in environmental health risk
- To produce evidence-based recommendations that can be used by health practitioners



# Methods

- English language articles
- Published between January 1985 and Sept. 2008
- Input from collaborators representing regional, provincial and national health agencies



# Search Techniques

- **Database search**

- 38 databases in range of disciplines
- 38 related terms and synonyms

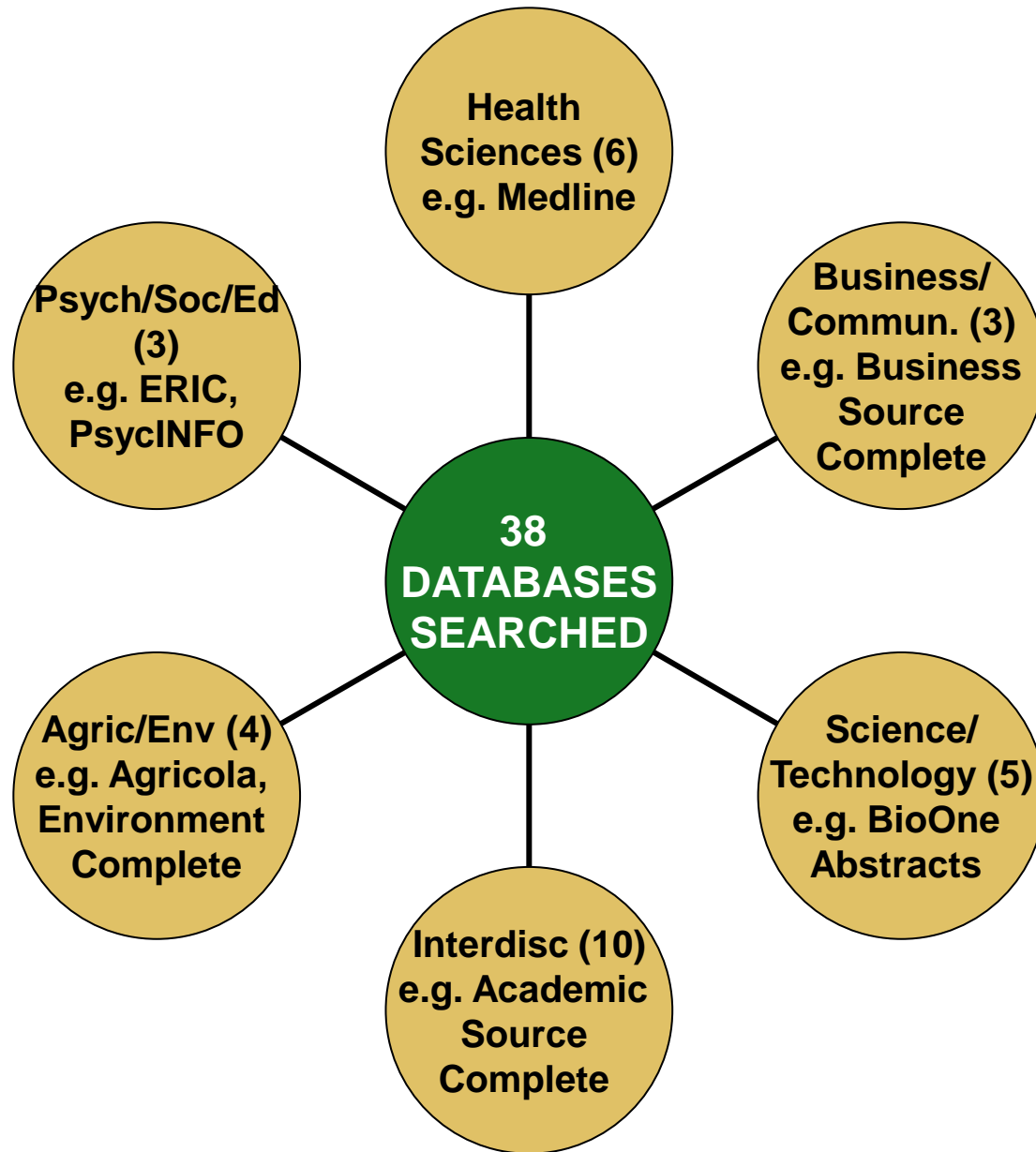
- **Key journal search**

- e.g. *Risk Analysis, Journal of Risk Research, Health Risk and Society*

- **Key author search**

- 109 key risk communication authors





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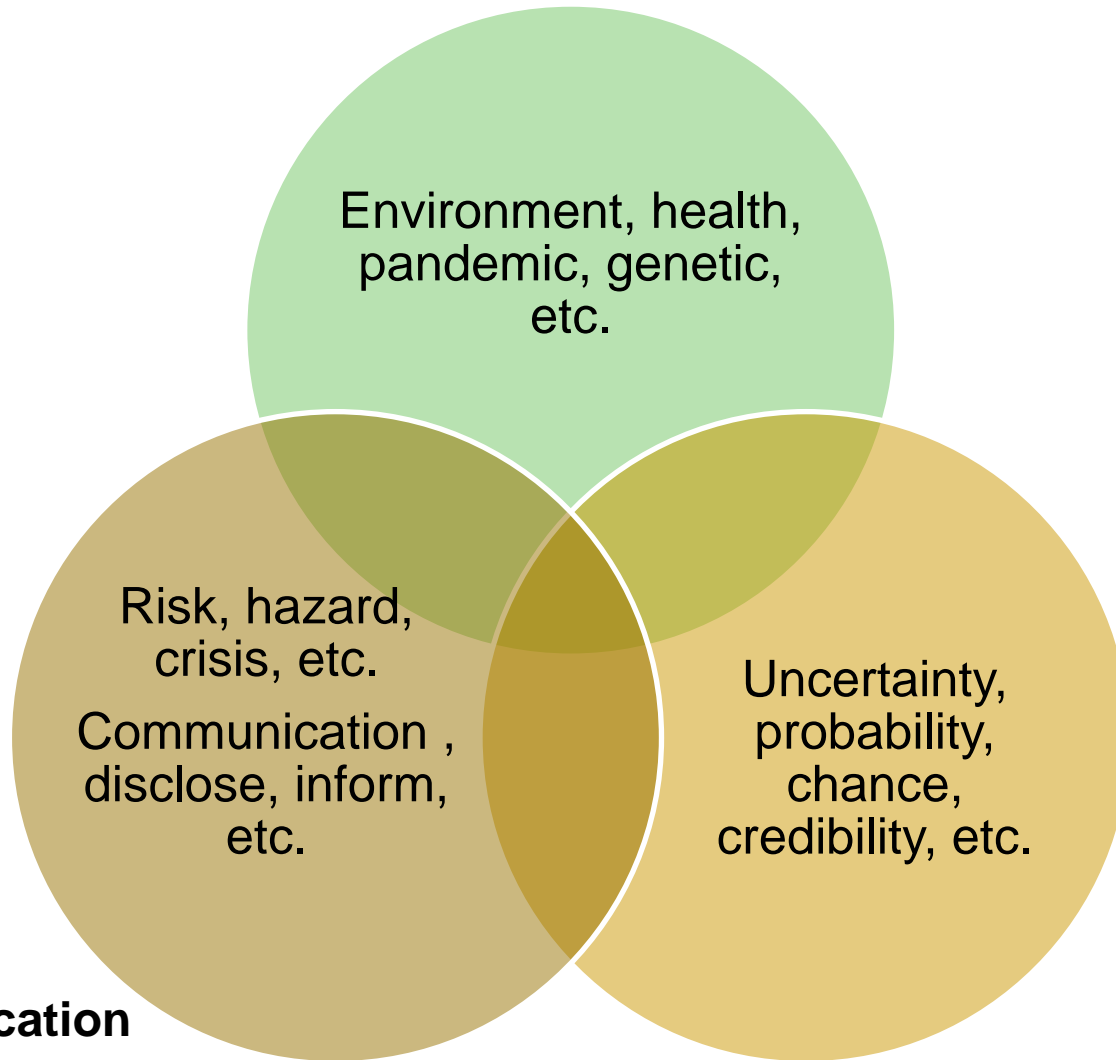
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# Environmental Health



**Risk Communication**

**Uncertainty**



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# Search Techniques

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# Volume of Applicable Literature

Screening Level	Total
Quick Exclusion	29,499
Broad Screening	23,104
Sorting Paper Types	2,365
Review with Full Text	1,026
Literature Used for Extraction	282
Final	28



# Methods – Data Extraction

- Inclusion:
  - Explicit focus on the public and uncertainty
- Exclusion:
  - where uncertainty is only mentioned in passing
  - no empirical evidence; and
  - studies about occupational health or economic risk



# Results – Overview of research

- 28 articles from 1985 to 2008 (Sept.)
  - 22 articles from 2000 to 2008
  - 6 articles from 1985-1999
- Most studies from the US(14) and the UK (5)
- Quantitative, qualitative and mixed methods
- Disciplinary perspectives: Public Health, Health Policy, Communication studies, Risk Management, Medicine, Social Sciences, Nutritional Sciences



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# Myth #1: All uncertainty is the same

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# One size (doesn't) fit all



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# Variability vs. Uncertainty



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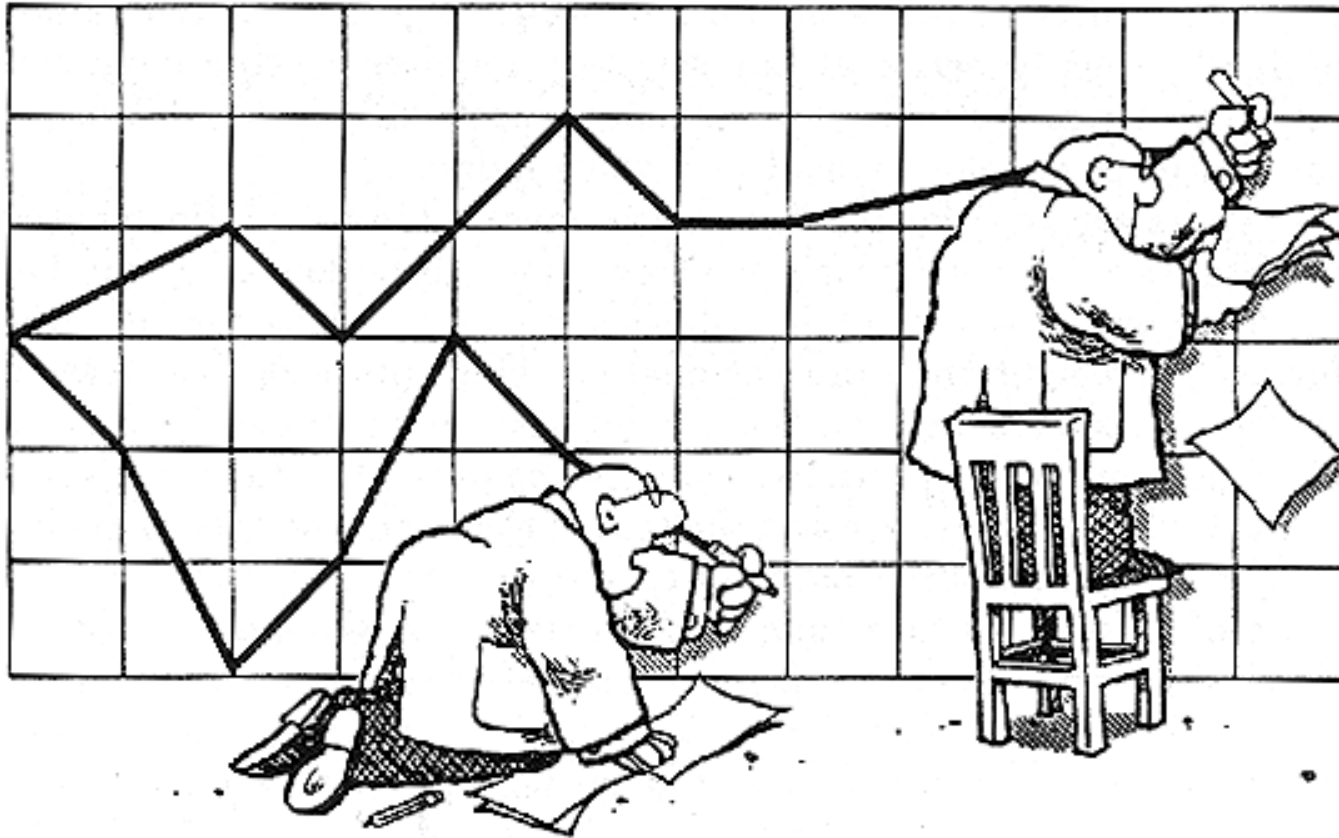


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# Conflicting knowledge vs not knowing



"HEY, I THOUGHT WE WERE WORKING WITH THE SAME DATA..."



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# Source of uncertainty



"What have I got?"



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# Consequences of uncertainty



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# Presentation of uncertainty



"FEWER THAN ONE IN TEN THOUSAND - SOMETHING LIKE ONE IN FOURTEEN THOUSAND - GETS THESE SIDE EFFECTS. HARDLY ANYBODY GETS THESE SIDE EFFECTS. THEY'RE EXTREMELY RARE. YOU SHOULD BE VERY PROUD."

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# Interpretations of uncertainty



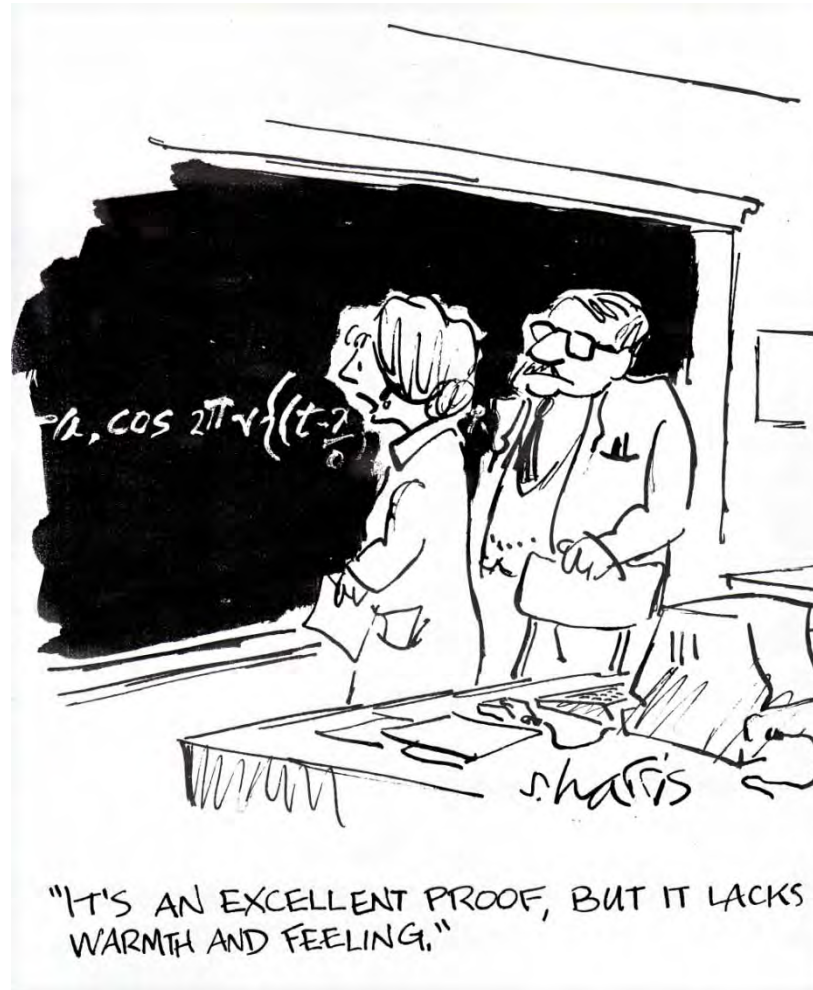
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# Interpretations of uncertainty



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# Policy default assumptions



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# Myth #2: People will not accept uncertain information

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# People need *some* information



"'BE CAREFUL'! ALL YOU CAN TELL ME IS 'BE CAREFUL'?"

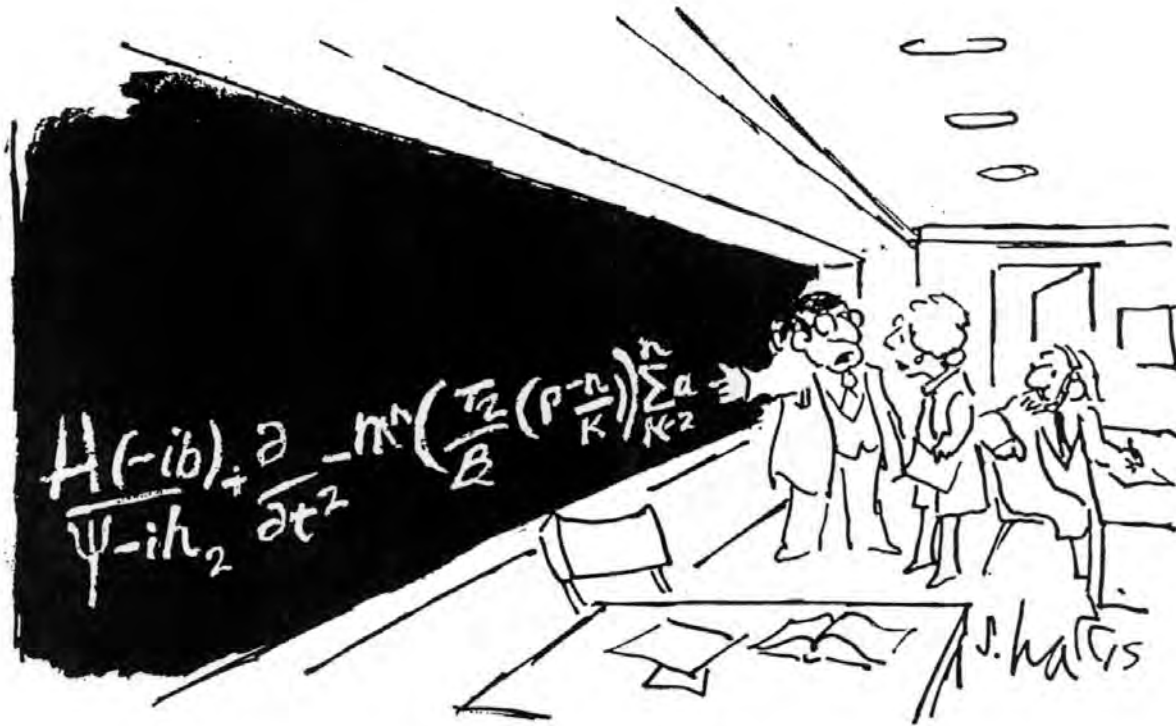
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# Importance of plain language



But this *is* the simplified version for the general public.

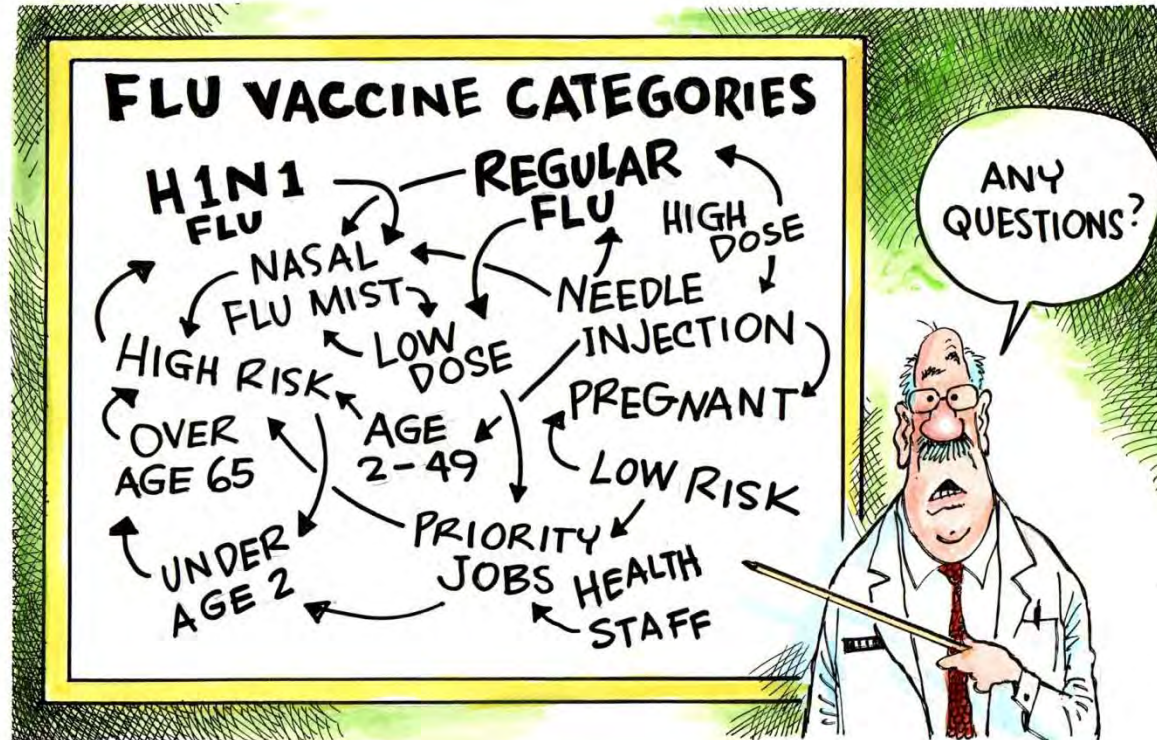
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# Unambiguous information



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# Know your audience



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# Myth #3: Admitting uncertainty undermines credibility

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# Different demands for certainty



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# Withholding information



*“Yes, I agree. But what really caught my attention is what the boss ISN’T saying!”*

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# Not saying doesn't mean people don't know



“...AND THIS IS WHERE MY DAD KEEPS THE GUN THAT WE DON'T KNOW ABOUT.”

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# Myth #4: Information should be withheld until there is reasonable certainty

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# Timing matters



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# 10 day hypothesis re: timing



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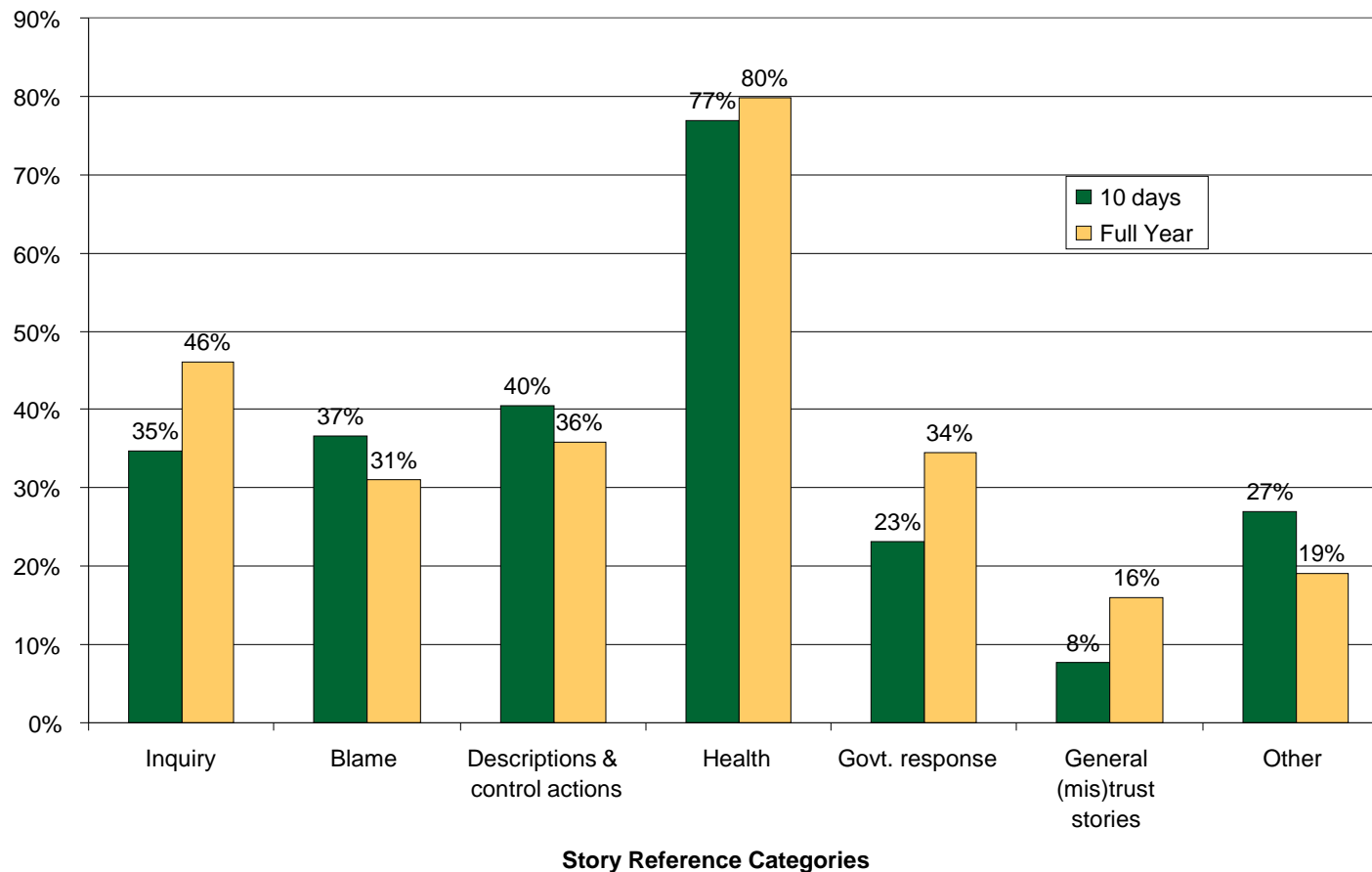


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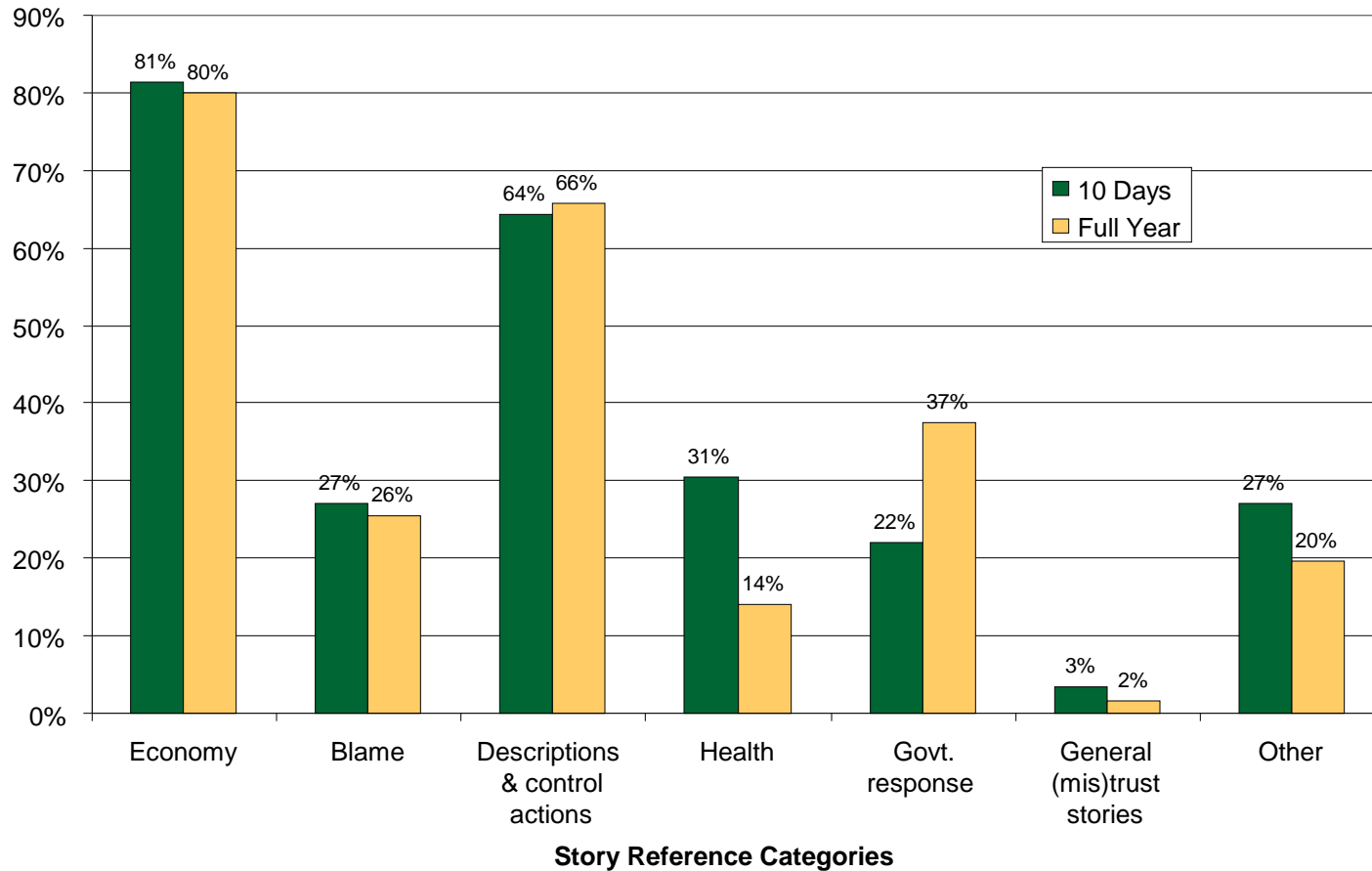


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# 10 days to full year - Walkerton



# 10 Days to full year - BSE



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# Myth #5: The media never get it right

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# The media 'bad dog'



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# Need to cultivate media relationships



"This just in. All the things previously thought to be good for us are in fact harmful to our health."

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# Filling the information void



# Time spent dispelling rumours...



...means less time effectively communicating



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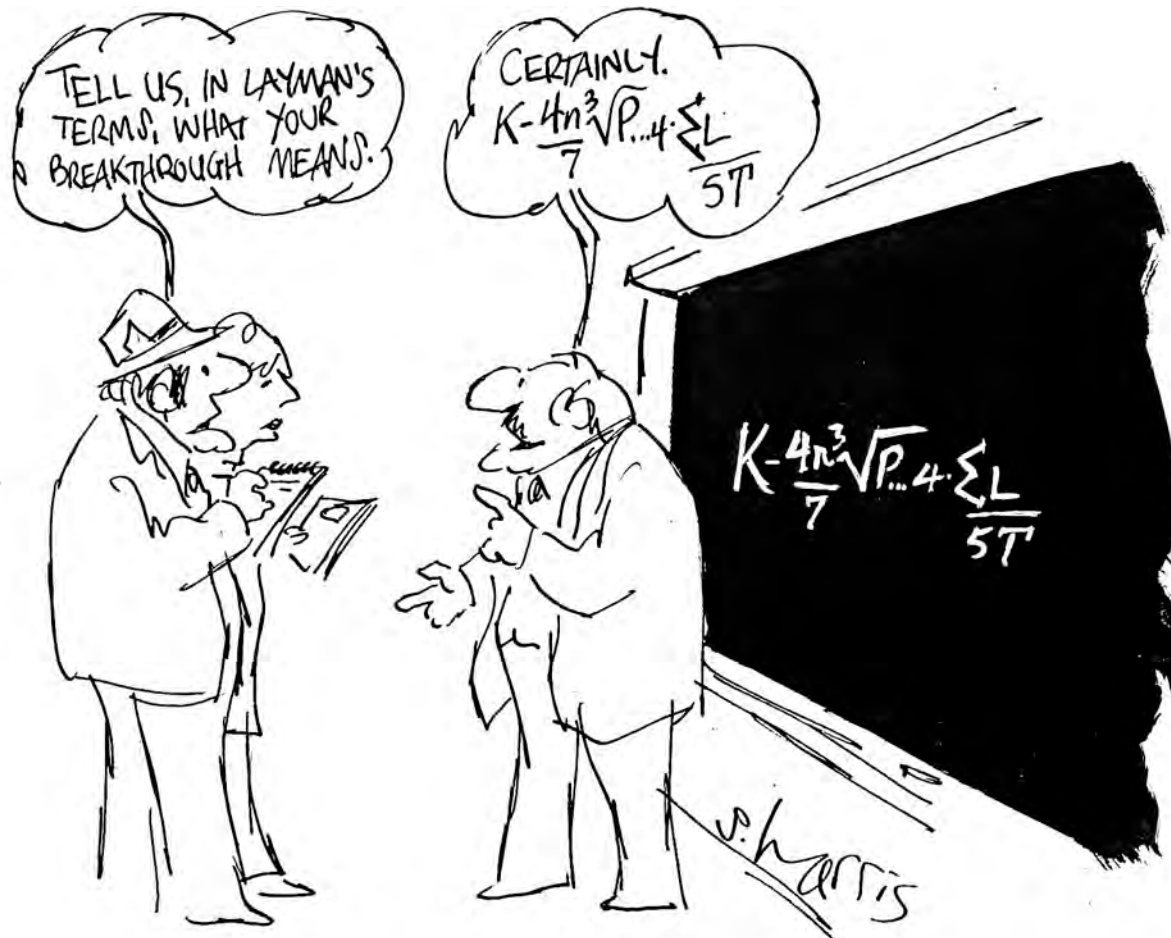


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# The spokesperson matters



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# The spokesperson matters



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# Take home messages



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# Questions?

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