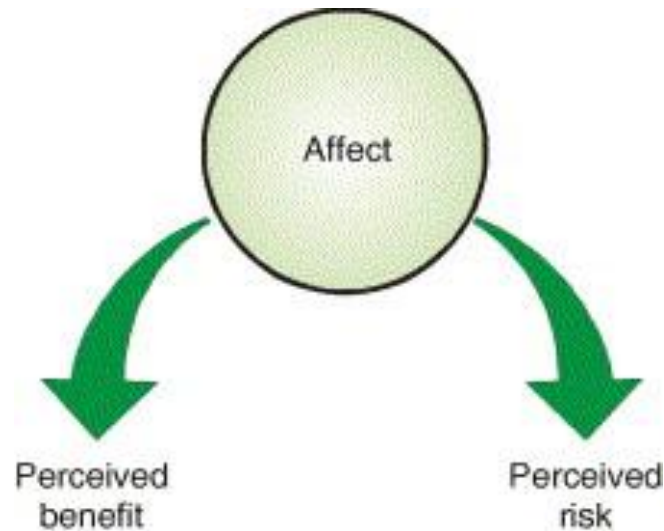


Interpretation of Risk Communication using Affect and Availability Heuristics

SE367 Term Project --Kuldeep Yadav (10358)

Affect Heuristic

- Emotional response
- Equivalent to gut feelings
- Perceived Risk is inversely proportional to perceived benefits



A model from Alhakami and Slovic (1994)

Availability Heuristic

- Availability of examples
- Which is more likely a word starts with letter “R” or “R” be the third letter of the word?
- Actually there are 3 times more words with “R” at third position than words that begin with “R”

Risk Communication

Hypothesis says “evoking negative effect (fear) results in a increased level of perceived risk”

Slovic says risk presented for longer period of time → perceived more risk

Factors affecting perceiving risks:

1. Feelings
2. Availability of instances
3. Past experiences
4. Way of communicating risk

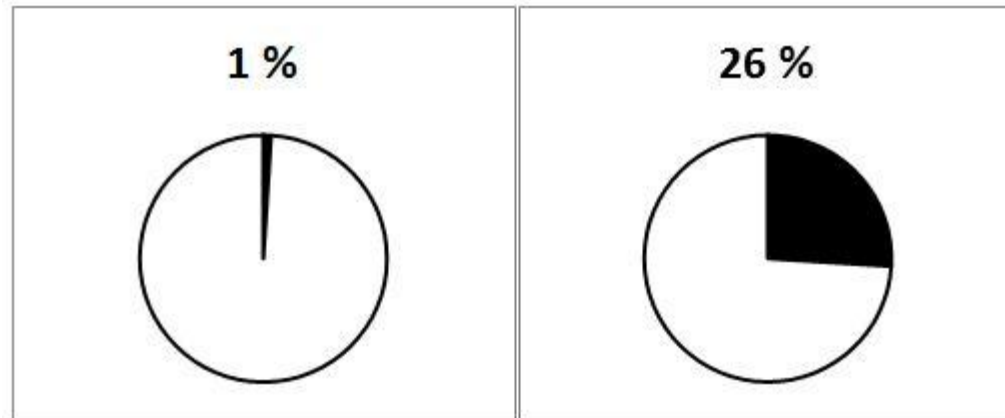
Experiment 1

- Situation: Buying house
- Information:
 1. On an average, there is a earthquake every hundred years.
 2. Each year, there is a 1% probability of earthquake.
 3. Within 40 years, there is a 33% probability of earthquake.
 4. Within 80 years, there is a 55% probability of earthquake.

Probabilities presented for longer period of time → Higher perceived risk

Experiment 2

- Probability of 1% within one year
- Probability of 26% within 30 years



Past experiences → greater perceived risk

Graphical display → higher perceived risk (hypothesized)
fewer perceived risks (results, Karmen Keller, 2006)

Experiment 3

Availability of photos

Group 1: Shown 2 pictures of houses affected by earthquake

Group 2: Shown 2 pictures of houses without reference to earthquakes

Availability of affect-laden images



Evoke negative emotions



Higher perceived risks

References

Carmen Keller, Michael Siegrist and Heinz Gutscher, "The Role of the Affect and Availability Heuristics in Risk Communication", *Risk Analysis*, Vol. 26, No. 3, 2006

Paul Slovic, Melissa L. Finucane, Ellen Peters, Donald G. MacGregor, "The affect heuristic", *European Journal of Operational Research*, Volume 177, Issue 3, 16 March 2007, Pages 1333–1352

Melissa L. Finucane, Ali Alhakami, Paul Slovic and Stephen M. Johnson, "The Affect Heuristic in Judgments of Risks and Benefits", *Journal of Behavioral Decision Making*, 1-17 (2000)

Wikipedia, "Affect Heuristic", "Availability Heuristic"

Thank you, Questions???

Results from Carmen Keller, Michael Siegrist and Heinz Gutscher, 2006

Study 1

Means and Standard Deviations of Responses to
“How Risky Would You Consider Living in a Place Like This Is?”

Format of Communicating	Flood Probability M(SD)
1. On an average, a flood every 100 years	3.59 (1.17) (n=51)
2. Each year, there is a 1% probability of flood	2.72 (1.21) (n=39)
3. Within 40 years, there is a 33% probability of flood	3.91 (1.21) (n=46)
4. Within 80 years, there is a 55% probability of flood	3.71 (1.25) (n=41)

Study 2

Graphical Display	Time Period	
	1 Year	30 Years
No	3.36 (1.48)n=393	3.77 (1.44)n=376
Yes	3.17 (1.51)n=384	3.64 (1.44)n=405

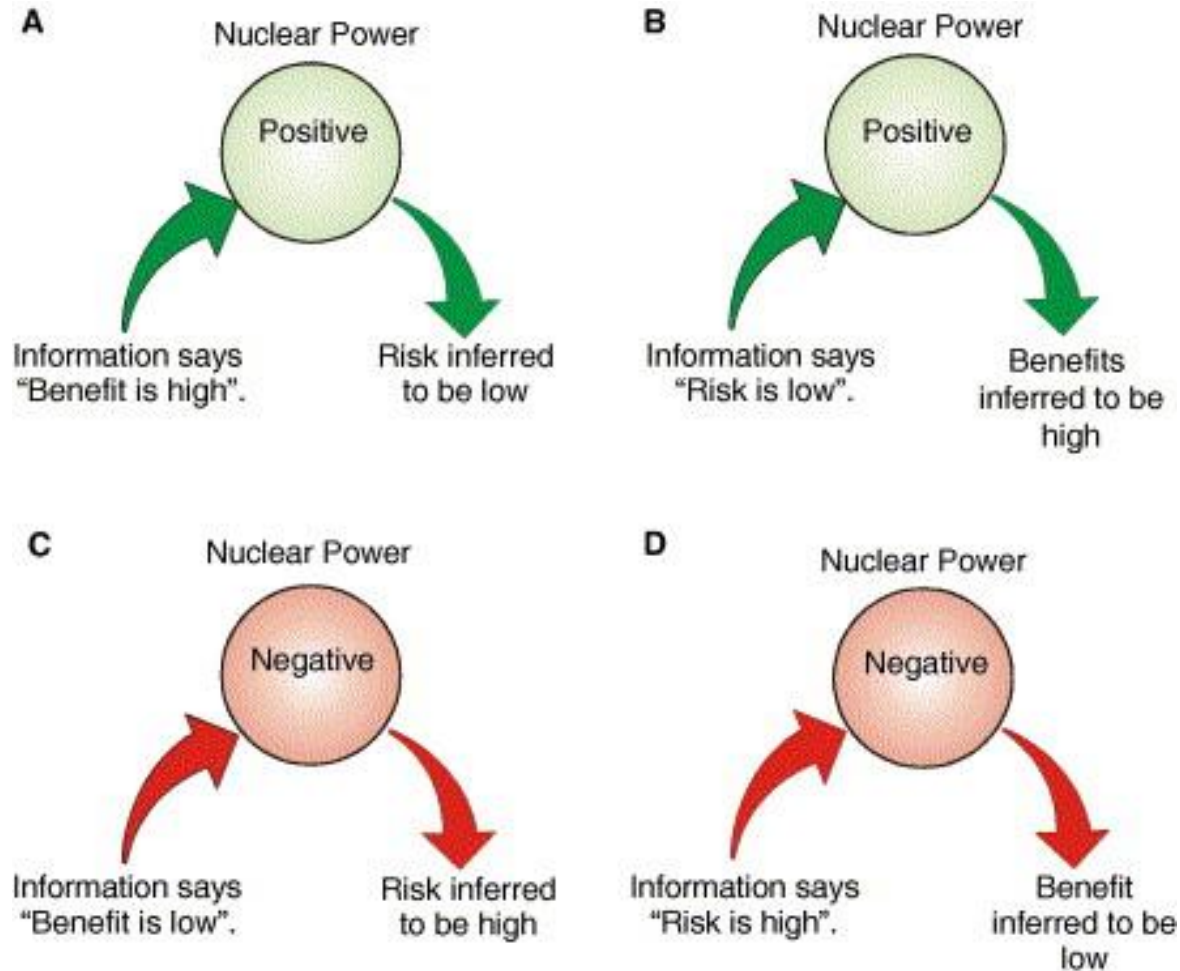
Results from Carmen Keller, Michael Siegrist and Heinz Gutscher, 2006

Condition	Study 3	
	1 Year	30 Years
Experimental group	2.95 (1.21)n=22	3.83 (1.07)n=23
Control group	2.22 (1.09)n=23	3.38 (1.44)n=24

Experimental group: Affect laden images

Control Group: Neutral images

Affect heuristic



from Alhakami and Slovic (1994)