

AACREA
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Proyecto CLIMA

Behavioral Decision Theory: How Judgments and Decisions are Made Under Uncertainty



Lesson 5

Experience-Based Decisions and Role of Affect

Three Theses

- ❑ Worry/Concern (“risk-as-feelings”) drives protective behavior
- ❑ Worry often uncorrelated with “objective” measures of risk
- ❑ Two pathways exist to worry/concern about hazards

Worry Motivates/Drives Behavior

- Gender differences on most perceptions of risk, except for social risk (Slovic, 1997; Weber, Blais, Betz, 2002)
 - Women contribute more frequently and more to 401(k) pension plans (Sethi-Iyengar, Huberman, Jiang, 2004)

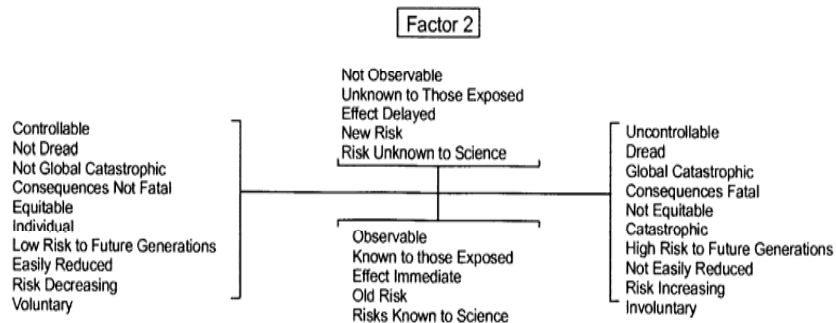
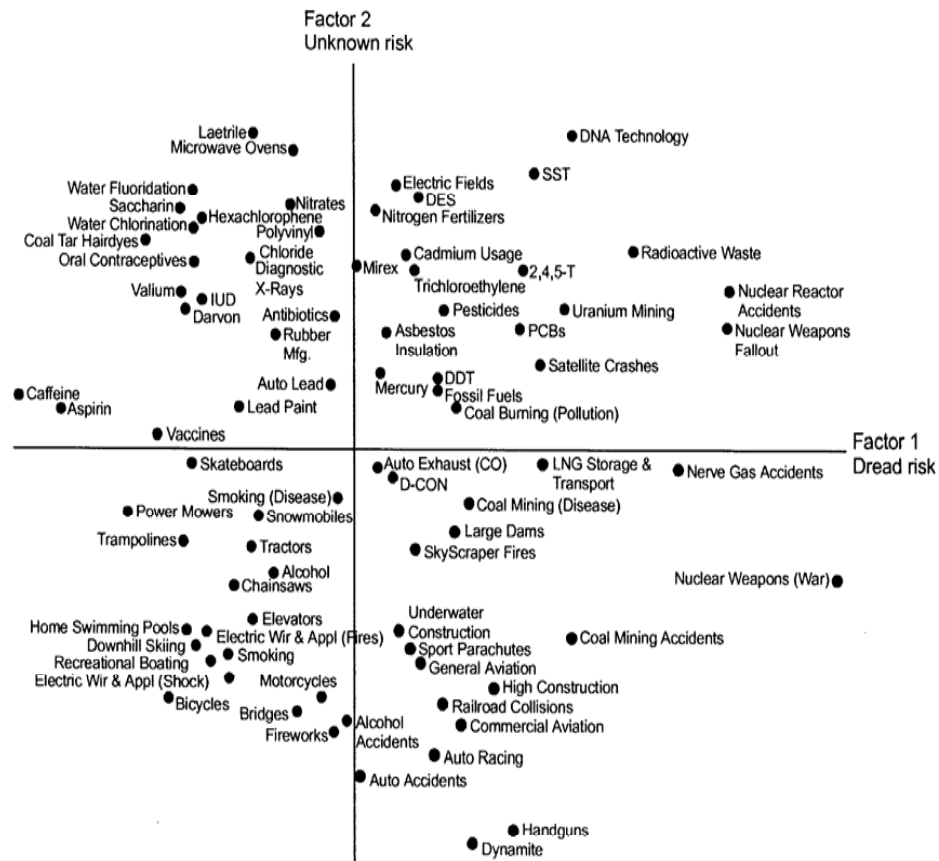
- National differences in worry about global warming
 - Europeans more willing to pay more for gasoline (Hersch & Viscusi, 2006)

Measuring Perceived Risk

- Axiomatic measurement paradigm
 - Subjective transformations of objective risk information (outcomes, probabilities)
 - E.g., variance of outcomes or other risk models (Luce & Weber, 1986)

- Socio-cultural paradigm
 - Effect of group- and culture-level variables
 - World-view (Douglas & Wildavsky, 1982; Palmer, 1996)

- Psychometric paradigm
 - Psychological risk dimensions inferred from factor analysis (Fischhoff et al, 1978)



Two Pathways to Worry/Concern

- Based on personal experience
 - (Repeated) experience of bad outcome
 - Negative association with choice alternative
 - Strong recency implicit in classical associative learning models that fit choices (Weber, Shafir, Blais, 2004; Hertwig et al, 2004a,b)
 - Underweighting of small-probability events, unless event happens to have occurred
- Based on vicarious summary description
 - Statistical, abstract summary of outcome distribution
 - Described by prospect theory
 - Overweighting of small-probability events (regression to the mean because of equal attentional allocation)
 - Unless rare event is discounted/edited out because it fails to worry decision maker

Choice Proportions for Sure-Thing

(Weber, Shafir, Blais, 2004)

Sure Thing	Gamble	Experience p(ST)	Description p(ST)
\$1	(\$0, .9; \$10, .1)	.68	.40
\$3	(\$0, .5; \$6, .5)	.39	.25
\$9	(\$0, .1; \$10, .9)	.24	.72
\$1	(\$0, .5; \$2, .5)	.58	.24
\$6	(\$0, .5; \$12, .5)	.42	.45

Practical Implications

- Should we scare people into worrying more some risks, e.g., climate change?

Jon Stewart—once more



Policy Implications—Caveats

- ❑ Finite Pool of Worry (Linville, 1991)
 - Increases in worry about one hazard may result in decrease in worry about other hazards
 - ❑ Argentine farmers: climate risks and political risks (Hansen, Marx, Weber, 2004)

- ❑ Single Action Bias
 - Tendency to engage in a single corrective action to remove perceived threat of a hazard (single action removes hazard flag)
 - ❑ Radiologist: detect single abnormality, miss others (Berbaum et al, 1991)
 - ❑ US Midwestern farmers: engaged in single adaptation to climate change (*either* production practice, pricing practice, or endorsement of government intervention) (Weber, 1997)
 - ❑ Argentina Pampas farmers: less likely to use irrigation or use crop insurance if they had capacity to store grain on their farms (Hansen, Marx, Weber, 2004)

Conclusions

- Empirical evidence for three theses
- Yet, may be premature to argue that visceral/affective reaction to specific risks ought to be increased
 - Decision makers need to consider/react to a portfolio of hazards
 - Increases in concern for one hazard might reduce concern for other important hazards
 - Best response to a hazard often involves a portfolio of protective responses
 - Single-action bias works against portfolio response
 - Need for checklists of desirable/feasible behavioral responses