Anomalies

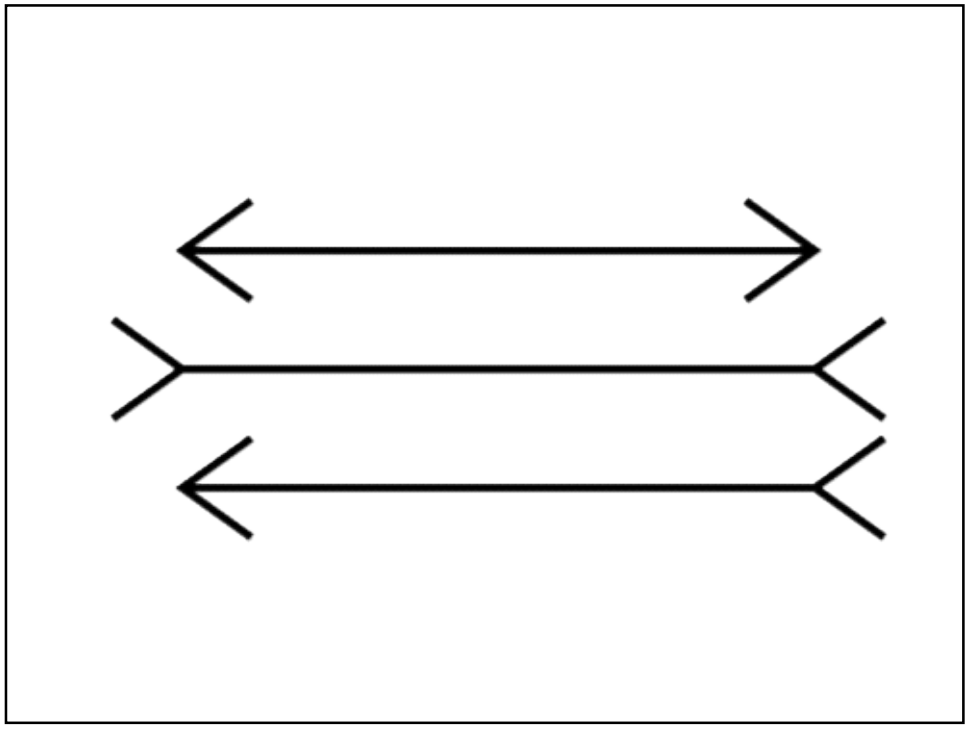
ECO663 Week 2

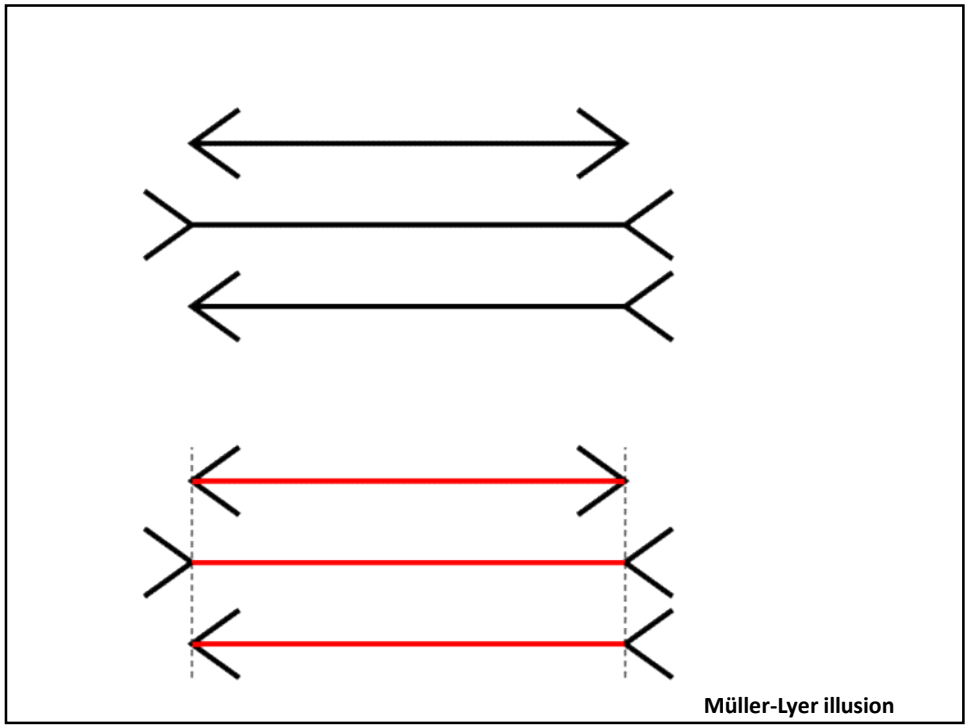
Question

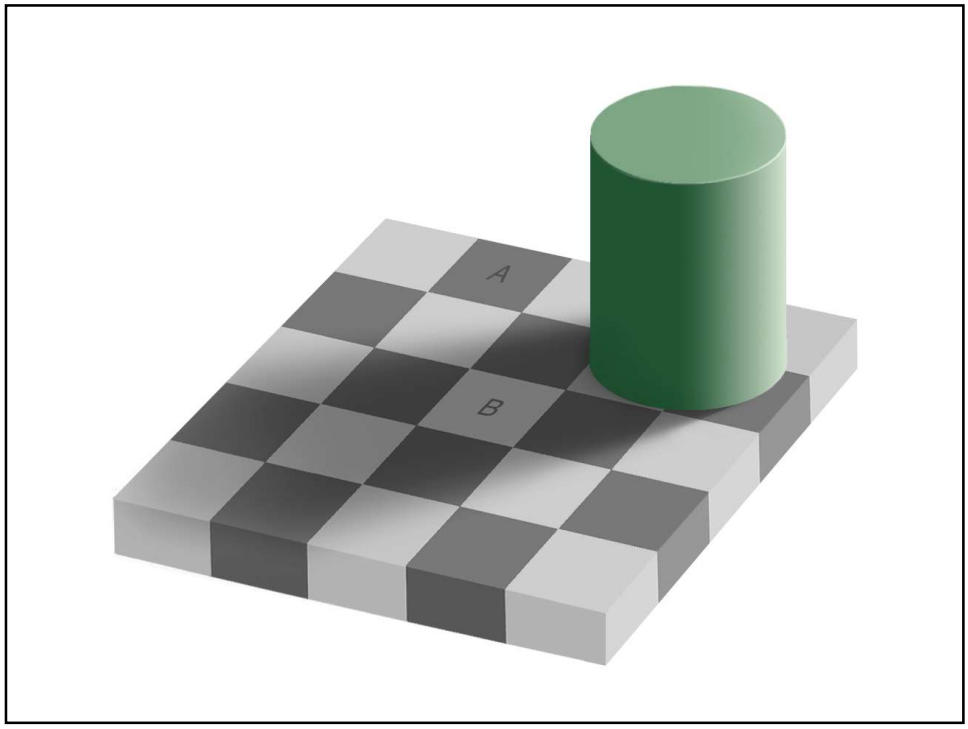
- Do we know accurately what we see?
- Do we know accurately what we want?
- Do we evaluate all the information accurately?
- Do we make decisions accurately / rationally given all the available information? All the time?

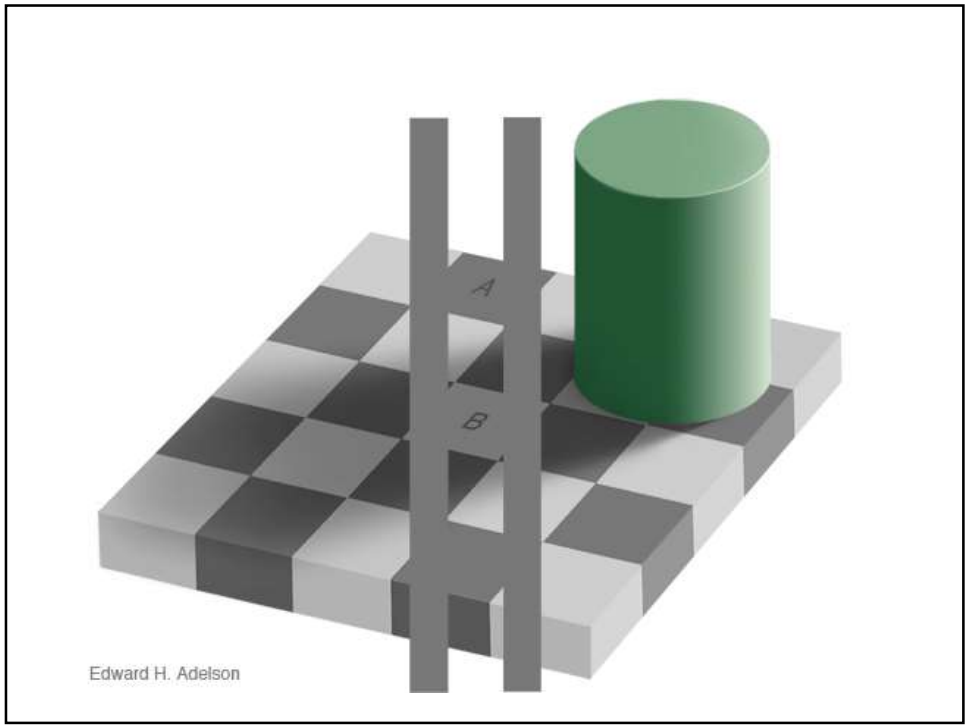
System 1 and System 2

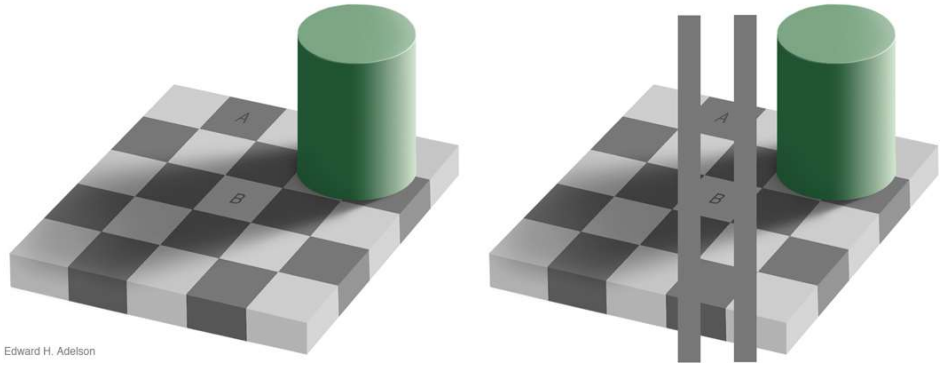
- System 1: operate automatically and quickly, with little or no effort and no sense of voluntary control.
- System 2: allocates attention to the effortful mental activities that demand it.



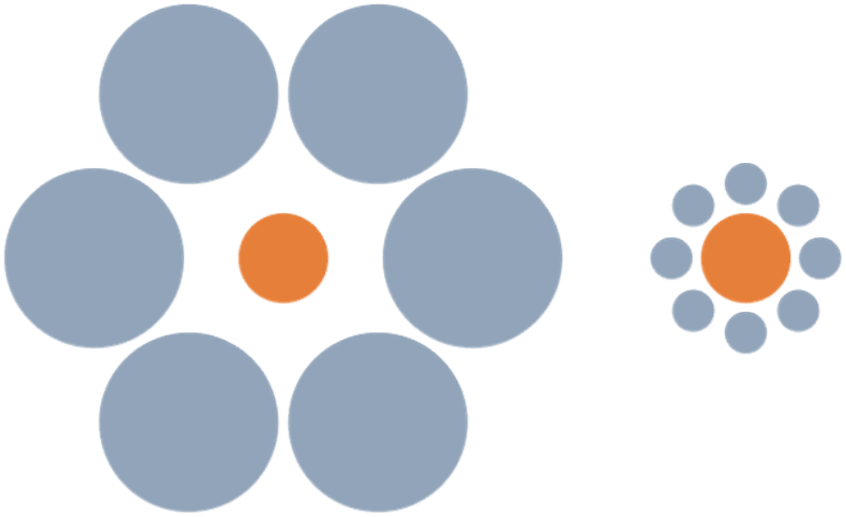

Müller-Lyer illusion

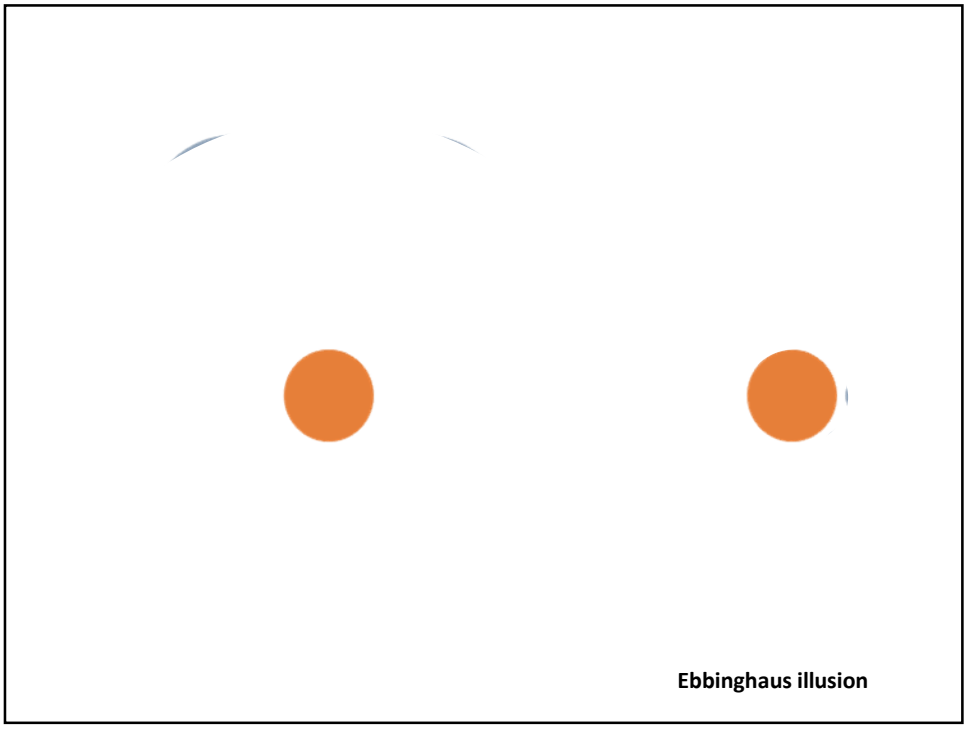

A
B


A
B
Edward H. Adelson



Checker Shadow Illusion





Ebbinghaus illusion

Group A

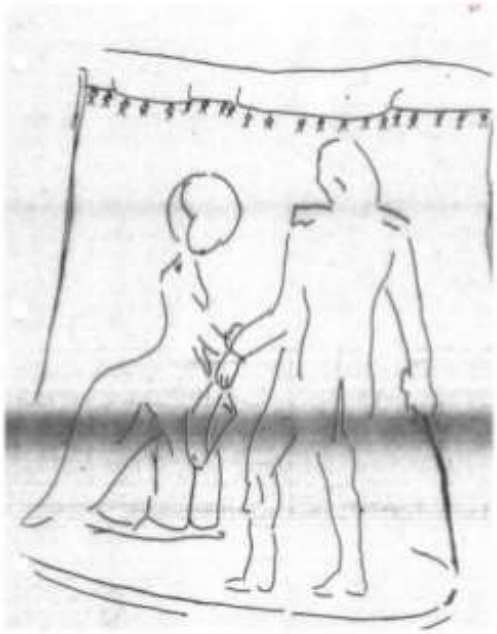
- You are going to look briefly at a picture and then answer some questions about it. The picture is a rough sketch of a poster for a costume ball. Do not dwell on the picture. Look at it only long enough to "take it all in" once. After this, you will answer YES or NO to a series of questions.

42

Group B

- You are going to look briefly at a picture and then answer some questions about it. The picture is a rough sketch of a poster for a trained seal act. Do not dwell on the picture. Look at it only long enough to "take it all in" once. After this, you will answer YES or NO to a series of questions.

43



In this picture was there…

1. A car?
2. A man?
3. A woman?
4. A child?
5. An animal?
6. A whip?
7. A sword?
8. A man's hat?
9. A ball?
10. A fish?

45

Testing System 1 and System 2

A bat and a ball cost $1.10 in total. The bat costs $1.00 more than the ball. How much does the ball cost? ____cents

- **If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets? _____minutes**

- **In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake? _____days**

Rational Choice by a Rational Man

- A rational man makes a rational choice based on

a. Current assets [money, physiological state, psychological capacity, social relationship, feelings]

b. Possible consequences of the choice

c. Likelihood of the consequences [uncertainty]

Assumptions here are…

a. Knowledge of the problem

=> Decision maker (DM) has a clear picture of the problem set of alternatives.

b. Clear preferences

=> DM has a complete ordering over the entire set of alternatives.

c. Ability to optimize, Do not make mistakes

=> DM has all the skill (unlimited capacity) necessary to make whatever complicated calculations are needed to discover his optimal course of action.

Anomalies

- Framing Effect
- Status-Quo Bias
- Sunk Cost Fallacy
- Preference Reversals
- Endowment Effect
- Reference Dependence
- Loss Aversion

Will be discussed under "Prospect Theory"

Framing Effect

The Framing of Decisions and the Psychology of Choice

Amos Tversky; Daniel Kahneman

Science, New Series, Vol. 211, No. 4481. (Jan. 30, 1981), pp. 453-458.

Framing Effect

- Preferences are not independent of problem description.

Any Example???

Example 1

- Problem I

[N=77]

Which of the following options do you prefer?

A. A sure win of $30
[78%]

B. 80% chance to win $45
[22%]

- Problem II [N=77]

Consider the two-stage game.

1st stage: 75% chance to end the game without winning anything, 25% chance to move into the second stage.

2nd stage:

C: a sure win of $30
[74%]

D: 80% chance to win $45
[26%]

- Problem III [N=81]

E. 25% chance to win $30
[42%]

F. 20% chance to win $45
[58%]

Problem II vs. III

Problem II
C: = 0.25*$30 = 25% of winning $30 (= $7.5) [74%]
D: = 0.25*0.8*45=20% of winning $45 (=$9) [26%]

Problem III
E: 25% of winning $30 [42%]
F: 20% of winning $45 [58%]

<= Problem B and C are equivalent problem, stated differently => Resulted in differences in preferences.

Explanations:

- Problem II vs. III

Preferring C to D in Problem II is due to
illusory "certainty effect" = pseudo-certainty effect

<= Problem II is "framed" to gain "certainty effect".

Due to Certainty Effect,
1% reduction of risk
from 1% to 0%
and
from 2% to 1%

are valued quite differently.

Framing "Probabilistic event" or "Risk" as
"certain gain" or "100% elimination of risk" could manipulate people's risk preference.

Example: Health Policy Decision

- Turkish government is preparing for the outbreak of an unusual Asian disease, which is expected to kill 600 people. Two programs to combat the disease have been proposed.

If program A is adopted, 200 people will be saved.

If program B is adopted,
1/3 probability that 600 people will be saved and
2/3 probability that no people will be saved.

If program A is adopted, 200 people will be saved.

If program B is adopted,
1/3 probability that 600 people will be saved and
2/3 probability that no people will be saved.

Which policy would you prefer?

⇒Majority choose program A

⇒Risk Averse

Health Policy Decision

- Turkish government is preparing for the outbreak of an unusual Asian disease, which is expected to kill 600 people. Two programs to combat the disease have been proposed.

If program A is adopted, 400 people will die.

If program B is adopted,
1/3 probability that nobody will die and
2/3 probability that all 600 people will die.

If program A is adopted, 400 people will die.

If program B is adopted,
1/3 probability that nobody will die and
2/3 probability that all 600 people will die.

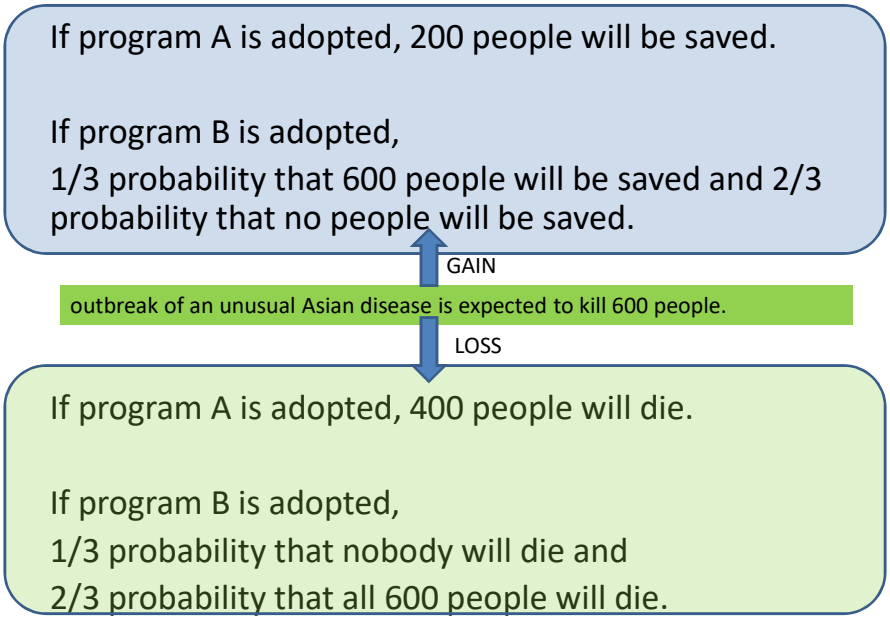
Which program would you choose?

⇒Majority choose program B.

⇒Risk taking

Choice involving Gains => Risk Averse

Choice involving Losses => Risk Taking



- Any similar example???

Other Examples

- Label as a **cash discount**, rather than a **credit card surcharge**.
- Label as a **discount** if you book online, rather than an **extra charge** if you book by phone.
- Partitioned pricing – people **aren't as sensitive to increases in shipping and handling** as they are for the unit's price
- Public goods experiments – subjects contribute more if the payoff function is described as a **gift** to the other players, rather than as **a public good**
- Also contributed more when payoffs were phrased according to the group ("**we**" frame) rather than for individuals ("**I**" frame)

ORGANIZATIONAL BEHAVIOR AND HUMAN DECISION PROCESSES
Vol. 76, No. 2, November, pp. 149–188, 1998
ARTICLE NO. OB982804

All Frames Are Not Created Equal: A Typology and Critical Analysis of Framing Effects

Irwin P. Levin
The University of Iowa

Sandra L. Schneider
The University of South Florida

and

Gary J. Gaeth
The University of Iowa

3 types of framing (Levin et al. 1998)

1. **Attribute framing**

   – A single attribute of a given object is framed positively or negatively

   e.g. 80% lean meat vs. 20% fat
   e.g. 80% accuracy vs. 20% error rate
   e.g. 80% survival vs. 20% death (surgery)

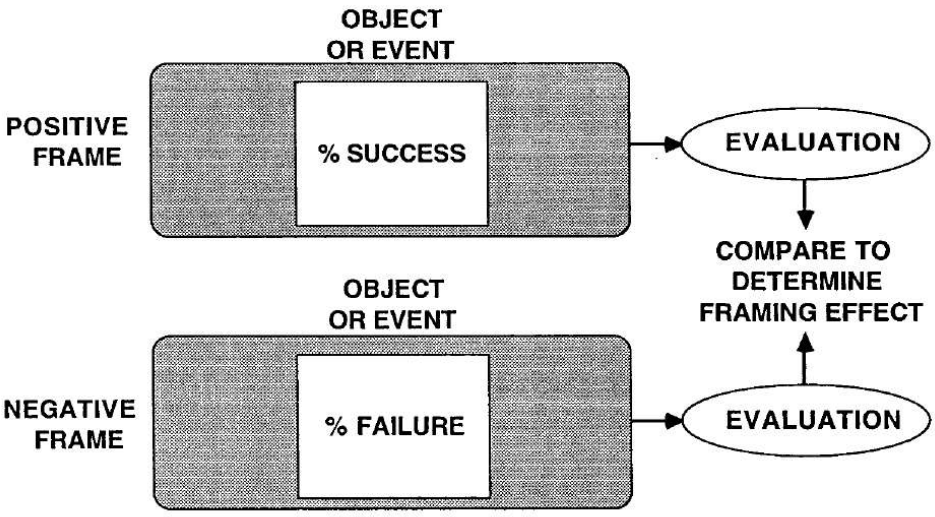
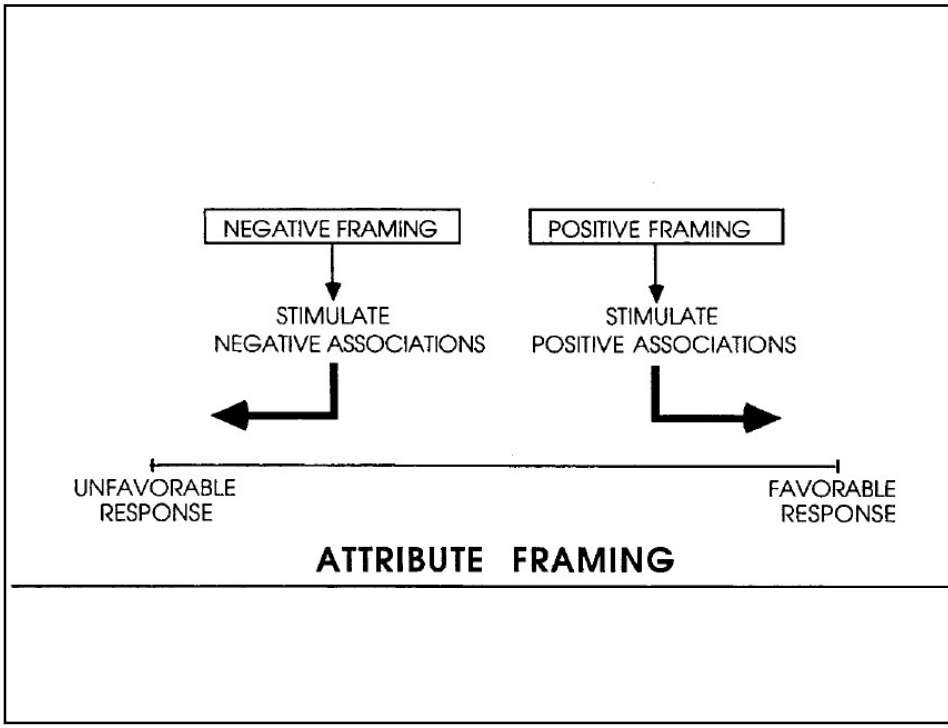


FIG. 2. The attribute framing paradigm.



2. Goal framing

- Potential to provide a benefit/gain (positive frame)
- Potential to prevent/avoid a loss (negative frame)

e.g. skin cancer:

negative consequences of not applying sunscreen

vs.

positive consequences of applying sunscreen.

*Under medical context, loss (negative frame) has greater impact.

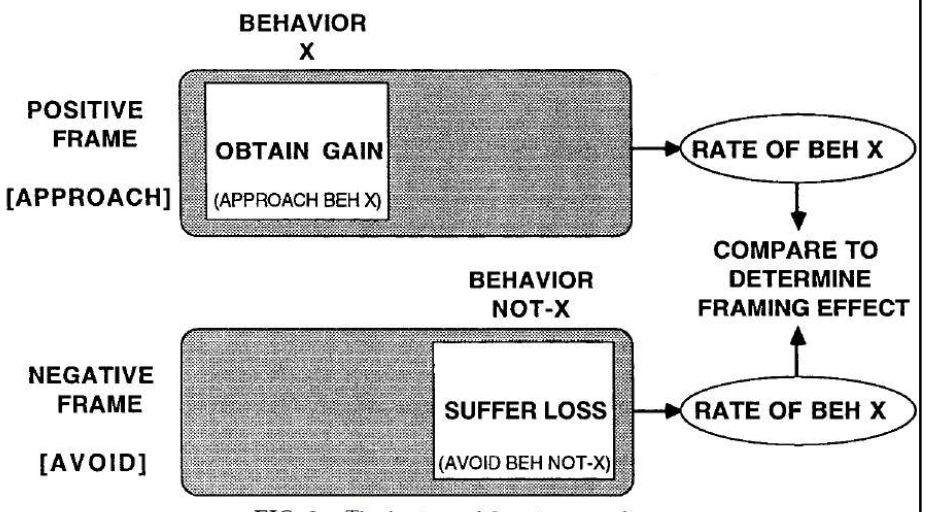


FIG. 3. The basic goal framing paradigm.

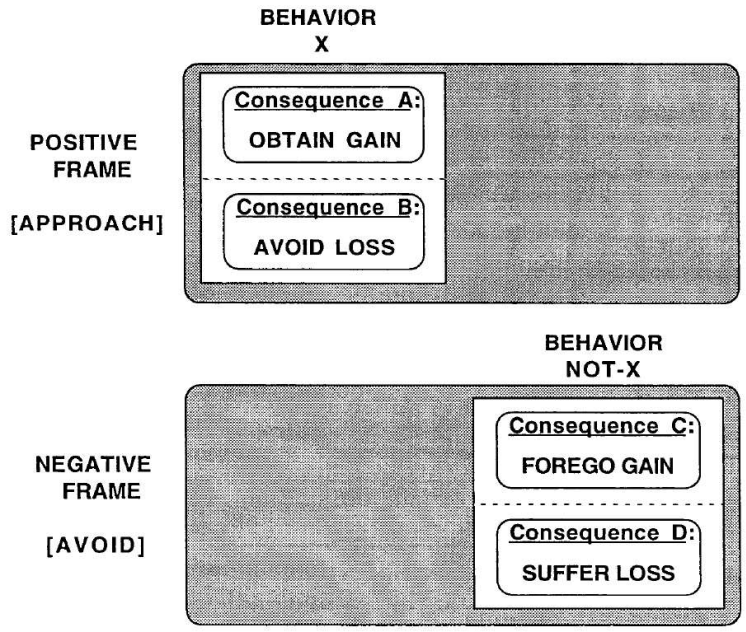


FIG. 4. Variations in the goal framing paradigm.

3. Risky choice framing

– Discrete choices between a risky and a riskless option of equal expected value depended on whether the options were described in positive terms (lives saved) or in negative terms (lives lost).

e.g. Asian Disease Problem [% saved vs. % death]

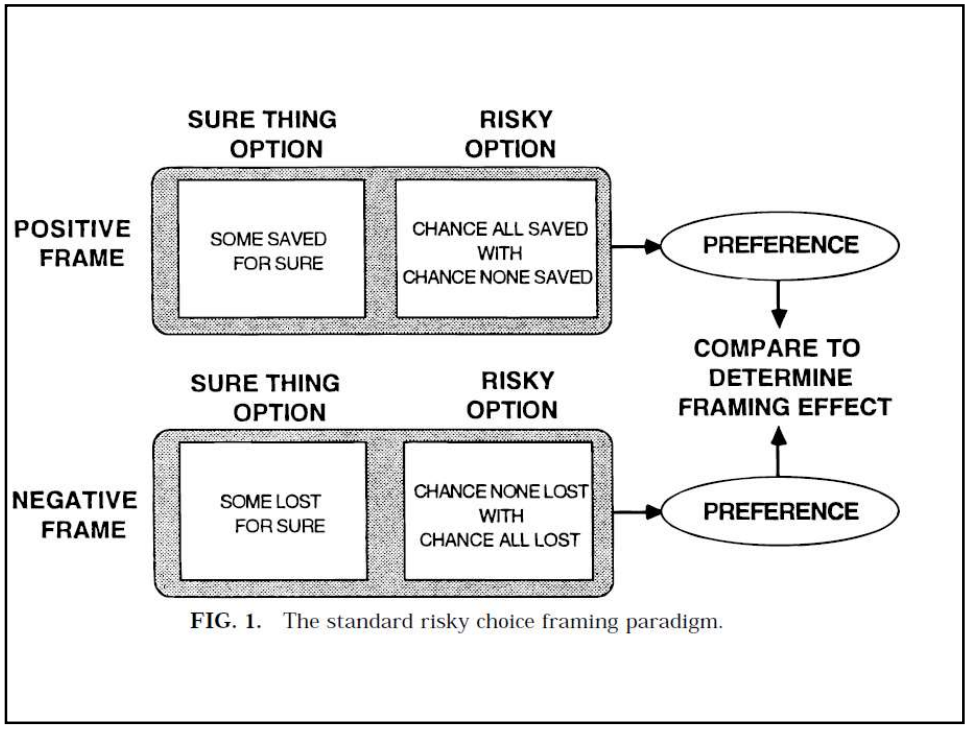
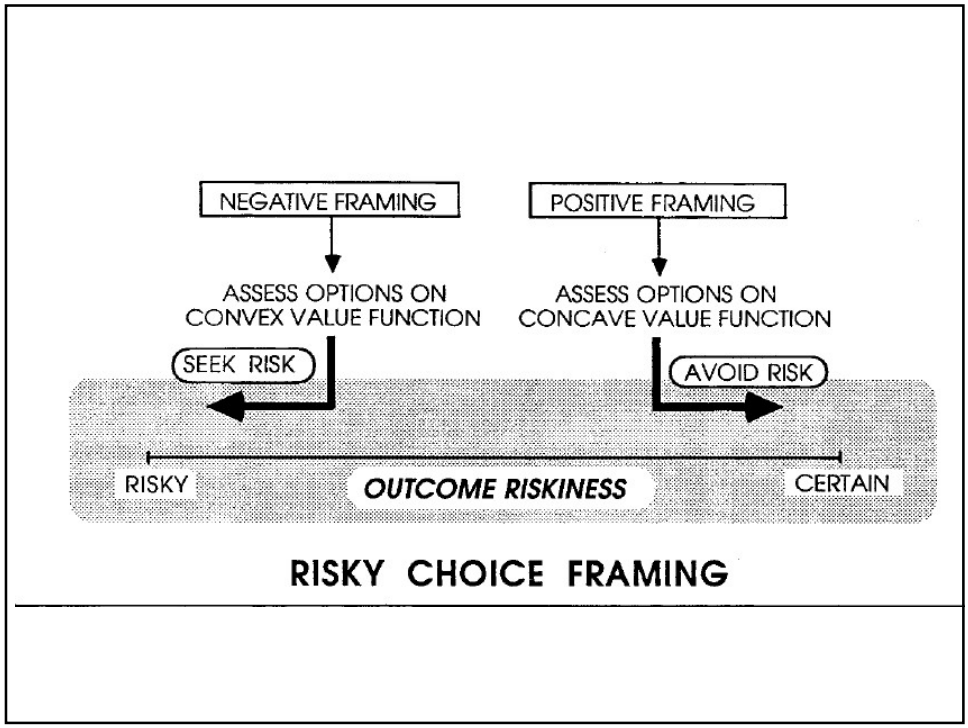


FIG. 1. The standard risky choice framing paradigm.



RISKY CHOICE FRAMING

European Journal of Social Psychology, *Eur. J. Soc. Psychol.* **44**, 474–486 (2014)
Published online in Wiley Online Library (wileyonlinelibrary.com) **DOI**: 10.1002/ejsp.2033

Special issue article: The social psychology of climate change

Effects of message framing in policy communication on climate change

MAURO BERTOLOTTI* AND PATRIZIA CATELLANI
Department of Psychology, Catholic University of Milan, Milan, Italy

Objective of the study:

What kind of combination(s) of framing levels result in the most persuasive communication of climate change policies?

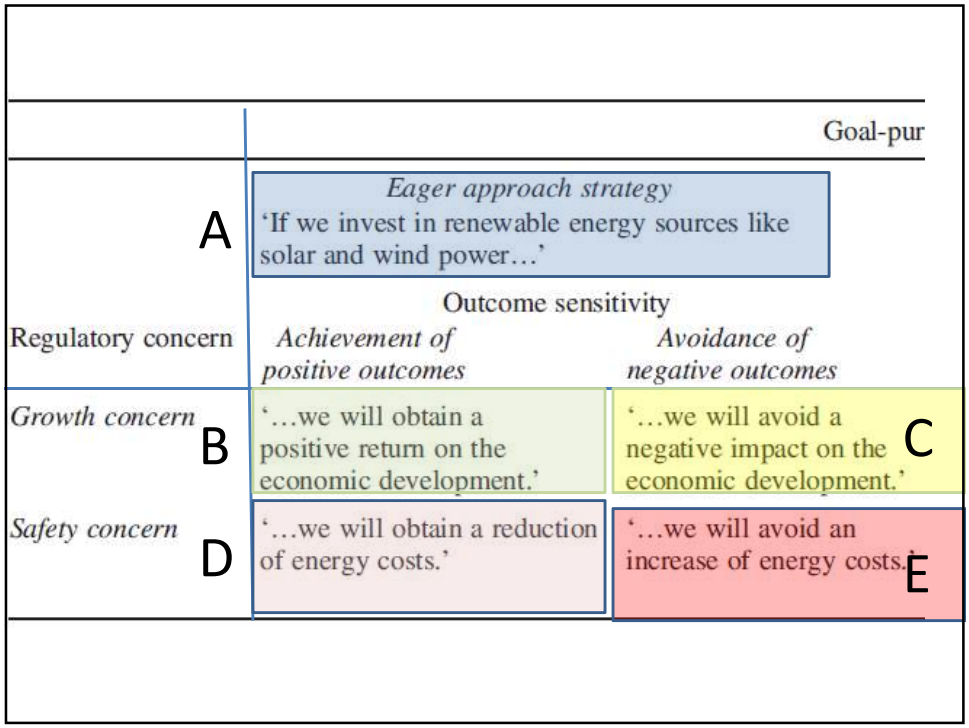
Study 1

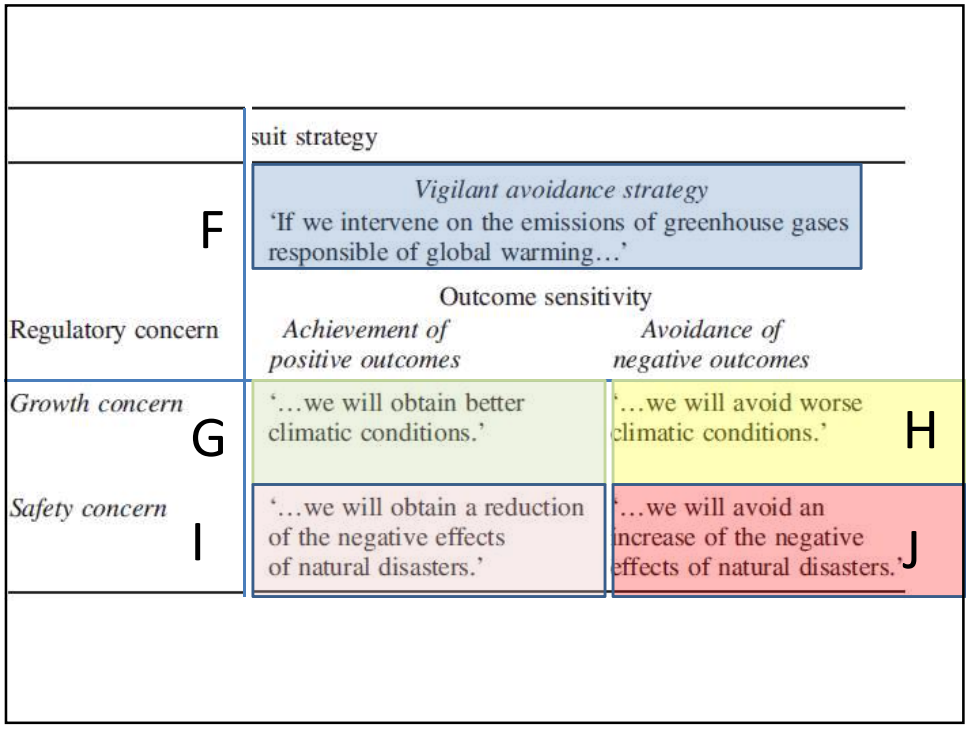
- A candidate in national elections promises…

a) Investments on renewable energy policy (eager approach strategy)

b) Interventions on greenhouse gas emissions (vigilant avoidance strategy)

<= Goal-pursuit strategies





Hypotheses to be tested

H1: eager approach strategy (renewable energy) with positive growth-related outcomes [A+B] is supported (more than with negative growth-related outcomes [A+C])

H2: vigilant avoidance strategy (GHG emission) with the avoidance of negative safety-related outcomes [F+J] is supported (more than with positive safety-related outcomes [F+I])

H3: no difference between A + (D or E)

no difference between F + (G or H)

Experiment

N = 95, university students

2 (outcome sensitivity: presence of positive vs. absence of negatives) × 2 (regulatory concern: growth vs. safety)

⇒A + (B, C, D or E)

⇒F + (G, H, I or J)

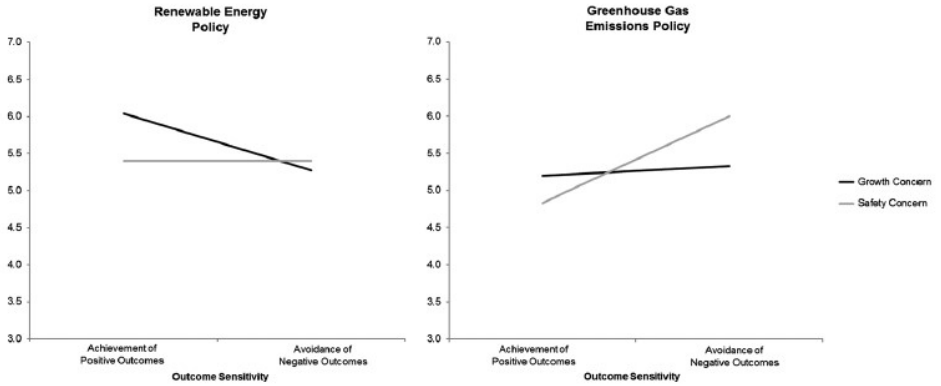
For eager approach or vigilance avoidance strategy

Experiment Procedure

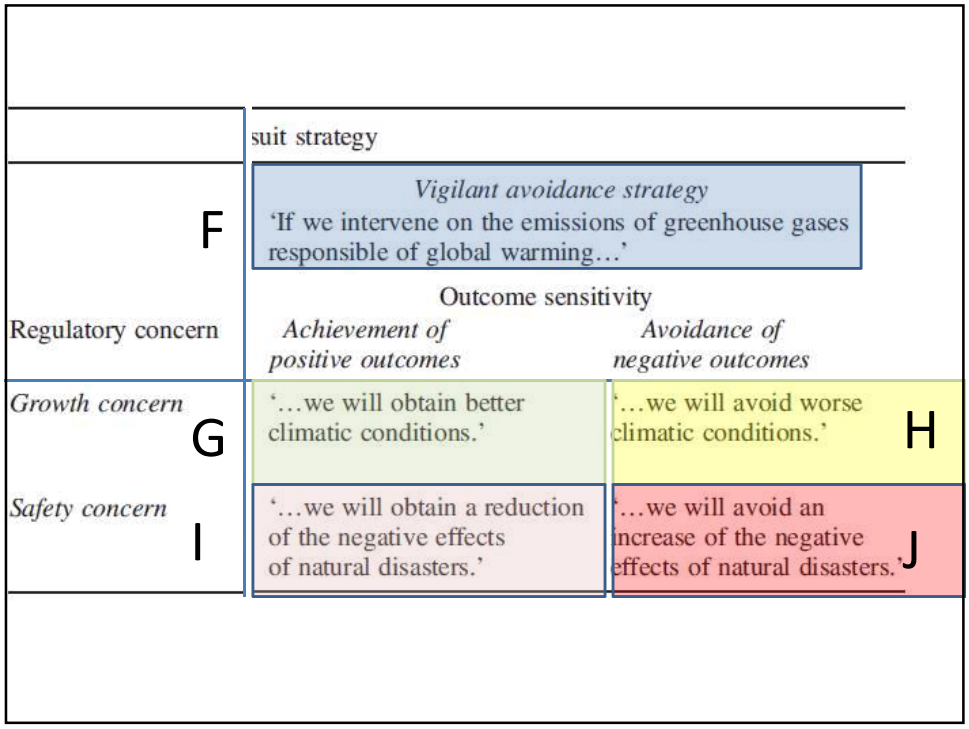
- Baseline attitudes: renewable energy policy and GHG policy rated with 1 (not at all) to 7 (very much) scale.
- Each respondent read two statement (1. eager approach with B, C, D or E description, 2. vigilant avoidance with G, H, I or J description)
- Asked to express the **degree of agreement** (" To what extent do you agree with the statement you have just read?") [1 (not at all) ~ 7 (very much)] and **voting intention** ("Would you vote for a politician making this statement?") **1** (probably not) ~ 7 (probably yes)

Results

- Baseline: M(eager) = 5.25, M(vigilance)=5.37
- (A+B) > (A+C) ; (A+D) ~ (A+E)
- (F+G)~ (F+H) ; (F+I) < (F+J)



		Goal-pur	
	A	*Eager approach strategy* 'If we invest in renewable energy sources like solar and wind power…'	
Regulatory concern		Outcome sensitivity: *Achievement of positive outcomes*	*Avoidance of negative outcomes*
Growth concern	B	'…we will obtain a positive return on the economic development.'	'…we will avoid a negative impact on the economic development.' C
Safety concern	D	'…we will obtain a reduction of energy costs.'	'…we will avoid an increase of energy costs.' E



Implications:

- A policy message focused on **renewable energy sources** is more persuasive when it is framed in terms of the **positive outcomes** that may be achieved by adopting the policy and when the content of the message emphasizes **growth as the primary concern**.

- A message focused on **greenhouse gas emissions** is more persuasive when it is framed in terms of the **negative outcomes** that may be avoided by adopting the policy and when the content of the message emphasizes **safety** as the primary concern.

Psychology, Health & Medicine, 2013
Vol. 18, No. 6, 645–653, http://dx.doi.org/10.1080/13548506.2013.766352

Routledge
Taylor & Francis Group

The framing effect in medical decision-making: a review of the literature

Jingjing Gong[a,1], Yan Zhang[b,1], Zheng Yang[c], Yonghua Huang[a], Jun Feng[a] and Weiwei Zhang[a]*

Medical Decision Making and Framing Example

Case 1: Lung cancer treatment [surgery vs. radiation]

- Frame [survival rate vs. mortality rate]

⇒Surgery if survival rate

⇒Radiation if mortality

Risk seeking if positively framed, risk averse if negatively framed <=reversed pattern is found.

(McNeil et al. (1982) On the elicitation of preferences for alternative therapies. The New England Journal of Medicine, 306, 1259-1262)

Case 2: Preventive behavior [human papillomavirus (HPV) vaccine]

- Frame [70% effective vs. 30% ineffective]

⇒Supported if positive framing

⇒Supported less if negative framing

(Bigman et al. (2010) Effective or ineffective: Attribute framing and the human papillomavirus (HPV) vaccine. Patient Education and Counseling, 81, S70-S76)

Case 3: Preventive Behavior [Skin cancer + skin protection]

- Frame [risks of sun exposure (negative frame) vs. benefits of sunscreen (positive frame)]

⇒Negative frame is more effective for this study.

(Thomas et al (2011) "Appearance matters: the frame and focus of health messages influences beliefs about skin cancer" British Journal of Health Psychology, 16, 418-429)

⇒Findings for Preventive Behavior are mixed.

⇒According to the meta analysis by Gallagher and Updegraff (2012), **gain-framed messages** were more likely to encourage **prevention behaviors** (skin cancer, smoking cessation, physical activity)

Case 4: Detection Behavior [mammograms, screening for prostate cancer]

=> **Results are mixed**. Some studies find effective negative frame to engage in early detection behavior (Rothman et al. 1990), some found positive frames to be more effective (Apanovitch et al. 2003), and some did not find any difference in framing (Arora, 2000; Williams et al,2001; Gallagher and Updegraff, 2012).

Results are affected by certain variables, such as

a) Perceived susceptibility to the disease
(higher perceived risk <= effective negative frame)

b) Culture (US, South Korea, Japan)

Appeal	Frame	Examples
Individualistic	Gain	If little concern can protect your health and happiness
Collectivistic	Gain	If little concern can protect your family's happiness
Individualistic	Loss	If little neglect can rob your health and happiness
Collectivistic	Loss	If little neglect can rob your family's health and happiness

Effective Frame: Collective + Gain, Individualistic + Loss (S. Korea, USA) Not found in Japan.

Case 5: Addictive behaviors [smoking]

Smoking: combination of framing, intention to quit smoking and nicotine dependence .

Conditions	Frames	Examples
Consequence	Negative	Smoking damages your health and is expensive
	Positive	Quitting smoking improves your health and saves you money
Benefits of quitting smoking	Negative	Smoking gives you bad breath
	Positive	Quitting smoking refreshes your breath
Drawbacks of quitting smoking	Negative	Smoking may keep your weight down, but smoking is a much stronger cause of cardiovascular diseases than a few extra pounds
	Positive	By quitting smoking, you may gain some weight, but to prevent cardiovascular diseases, it is better to have a few extra pounds than to smoke
Self-efficacy issues	Negative	Doubt about whether you can quit smoking can make it harder for you to quit
	Positive	Self-confidence that you will succeed in quitting smoking will make it easier for you to quit

- Given high nicotine dependence and intentions to quit smoking, **negative frame** works better.
- Given low nicotine dependence and intentions to quit smoking, **positive** frame works better.

(Marjolein Moorman and Putte (2008) The influence of message framing, intention to quit smoking and nicotine dependence on the persuasiveness of smoking cessation messages. Addictive Behaviors, 33, 1267-1275)

Status Quo Bias

- Major literature

1. "Anomalies: The endowment effect, loss aversion, and status quo bias"

D Kahneman, JL Knetsch, RH Thaler - The journal of economic perspectives, 1991

2. "Status quo bias in decision making"

W Samuelson, R Zeckhauser - Journal of risk and uncertainty, 1988

Status Quo Bias

- Strong tendency to remain at the status quo.

Examples?

- Current job
- Current investment option
- TL vs. USD vs. Euro
- School
- Transportation Choice
- Road choice
- Medical doctors choice
- Insurance option

Status Quo Bias

- Strong tendency to remain at the status quo.

WHY?

One of the reasons…

<= connected to loss aversion

New choice → Better than status-quo (1)

→ Worse than status-quo (2)

Larger impact from (2) situation.

- WHY are we loss averse?

Maybe that's how our "survival brain" work.

- Losing 1 week of foods was more critical than finding 1 extra week of foods in the past…

Furthermore…

Even when the status-quo is the worst situation and taking an action improve the situation for sure, status-quo bias can still exist.

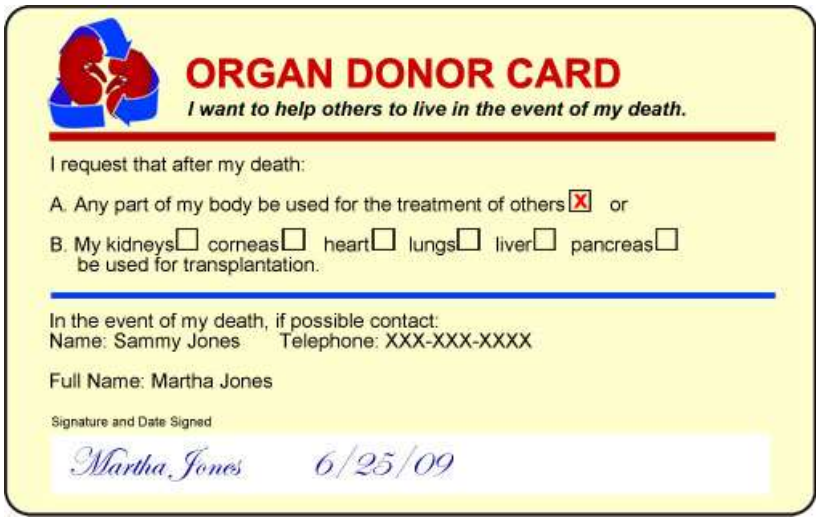
- people generally prefer inaction over action

and thus choose options that are weighted toward inaction, which is often the default choice.

Default Option

- The power of default

One striking example…



ORGAN DONOR CARD

I want to help others to live in the event of my death.

I request that after my death:

A. Any part of my body be used for the treatment of others [X] or

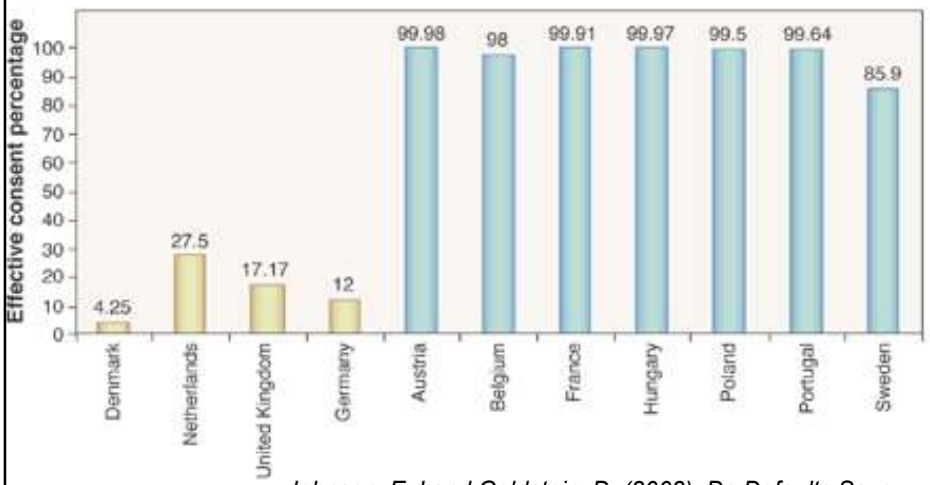
B. My kidneys [ ] corneas [ ] heart [ ] lungs [ ] liver [ ] pancreas [ ]
be used for transplantation.

In the event of my death, if possible contact:
Name: Sammy Jones Telephone: XXX-XXX-XXXX

Full Name: Martha Jones

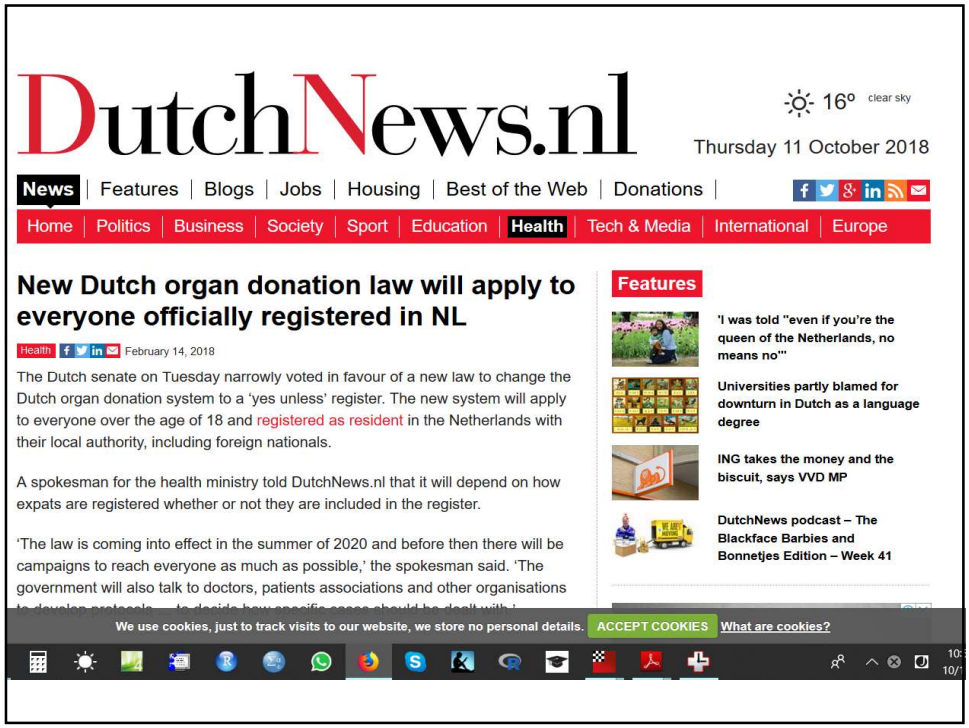
Signature and Date Signed

Martha Jones *6/25/09*



Johnson, E.J and Goldstein, D. (2003). Do Defaults Save Lifes? Science 21 November 2003: Vol. 302 no. 5649 pp. 1338-1339

- presumed-consent: people are organ donors unless they register not to be
- explicit-consent: nobody is an organ donor without registering to be one.



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New Dutch organ donation law will apply to everyone officially registered in NL

Health February 14, 2018

The Dutch senate on Tuesday narrowly voted in favour of a new law to change the Dutch organ donation system to a 'yes unless' register. The new system will apply to everyone over the age of 18 and registered as resident in the Netherlands with their local authority, including foreign nationals.

A spokesman for the health ministry told DutchNews.nl that it will depend on how expats are registered whether or not they are included in the register.

'The law is coming into effect in the summer of 2020 and before then there will be campaigns to reach everyone as much as possible,' the spokesman said. 'The government will also talk to doctors, patients associations and other organisations

Features

'I was told "even if you're the queen of the Netherlands, no means no"'

Universities partly blamed for downturn in Dutch as a language degree

ING takes the money and the biscuit, says VVD MP

DutchNews podcast – The Blackface Barbies and Bonnetjes Edition – Week 41

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Journal of Risk and Uncertainty, 1: 7–59 (1988)

Status Quo Bias in Decision Making

WILLIAM SAMUELSON
Boston University

RICHARD ZECKHAUSER
Harvard University

Reasons for Status-Quo Bias

1. Rational decision making in the presence of transition costs and/or uncertainty

2. Cognitive misperceptions

3. Psychological commitment stemming from misperceived sunk costs, regret avoidance or a drive for consistency

1. Rational Decision Making

- Result of multiple independent and identical decisions. (related to high cost of search as well).
  [e.g. lunch menu, route to home…]
- High **transition costs*** could cause status-quo bias.

*e.g. non-metric system => metric system
e.g. school year in Japan (starts in April, not Sep.)

- **Uncertainty** can lead to status quo inertia.

* Brand choice, same vacation spot every year, same model of cars repeatedly

2. Cognitive Misperceptions

- Loss aversion (if reference point = status-quo)
- Endowment effect
- Anchoring (and Adjustment)

3. Psychological Commitment

- Sunk Cost Fallacy
  - Continuance of status-quo choices may be motivated to justify previous commitments to a course of action.

  e.g. Teton Dam disaster, Vietnam war
  - The greater the investment in the status quo alternative, the more strongly it will be retained.
- Regret Avoidance
  - Individuals feel stronger regret for bad outcomes that are the consequence of new actions taken than for similar bad consequences resulting from inaction.

3. Drive for Consistency (Avoiding Cognitive Dissonance)
   - An Individual finds it difficult to maintain two conflicting stances or ideas simultaneously and consequently seeks cognitive consistency.
   - An individual tend to discard or mentally suppress information that indicates a past decision was in error.

* ***cognitive dissonance*** *is the mental stress or discomfort experienced by an individual who holds two or more contradictory beliefs, ideas, or values at the same time, or is confronted by new information that conflicts with existing beliefs, ideas, or values.*

Have you ever experienced "Cognitive Dissonance"?

Some Examples: (making use of) Status-Quo Bias

- "Soft selling"
  - Trial purchase without any obligation (if you don't like it, can return for full refund.)
  - Free baby picture offer (free one picture, no obligation to buy others)
  - Frequent flyer program

- Brand loyalty
  - An initial purchase and use of a brand significantly increase the likelihood of repurchase in a subsequent consumption decision.

  e.g. cell phone companies [phones, services]
  computer, car, insurance company, airplane…

Example (Status-Quo Bias): Portfolio

- "You are a serious reader of the financial pages but until recently have had few funds to invest. *That is when you inherited a large sum of money from your great-uncle. You are considering different portfolios.* Your choices are to invest in: a moderate-risk company, a high-risk company, treasury bills, municipal bonds."
- *"…That is when you inherited a portfolio of cash and securities from your great-uncle. A significant portion of this portfolio is invested in a moderate risk company…"*

=> What will be your choice of investment?

- An alternative became significantly more popular when it was designated as the status-quo.
- The advantage of the status quo increases with the number of alternatives.

- Insurance
  - Health
  - Car
  - Life

  <= Various plans, difficult to choose, stick with status-quo.

Related issue.

- Choice Overloads

The more choice the better?

Jam Experiment

Apple sales strategy vs. Samsung

Example: Electric bill (Hartman, Doane and Woo (1991))

Preference over Reliability of Electric Supply (lower outrage) vs. Electric Bill

6 alternatives (various combination of reliability and bill) are presented.

Group 1: Status Quo = High Reliability + 30% higher price

Group 2: Status Quo = Low Reliability + 30% lower price

Consumer Rationality and the Status Quo
Author(s): Raymond S. Hartman, Michael J. Doane and Chi-Keung Woo
Source: *The Quarterly Journal of Economics*, Vol. 106, No. 1 (Feb., 1991), pp. 141-162

Result

Group 1:

- 60.2 % selected their status-quo (=high reliability, high price)
- 5.7% preferred low reliability option (currently actually experienced option)

Group 2:

- 58.3% selected their status-quo (=low reliability, low price)
- 5.8% preferred high reliability option

Preference is strongly influenced by existing status-quo characteristics. When status-quo changes, people switch to prefer the new "status-quo" more.

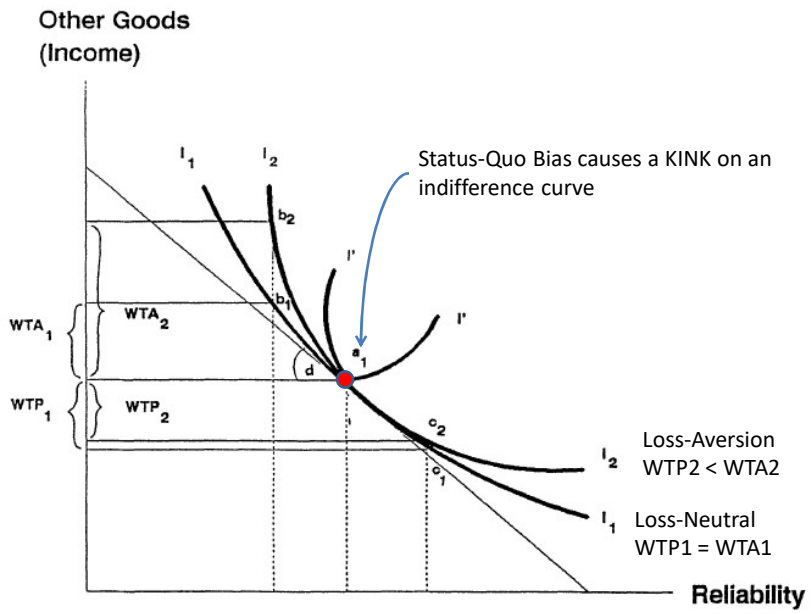


FIGURE I
Trade-offs Between Service Reliability and All Other Goods

Example: Patient Inertia

Patient Inertia and the Status Quo Bias: When an Inferior Option Is Preferred
Gaurav Suri, Gal Sheppes, Carey Schwartz and James J. Gross
Psychological Science 2013 24: 1763 originally published online 19 July 2013

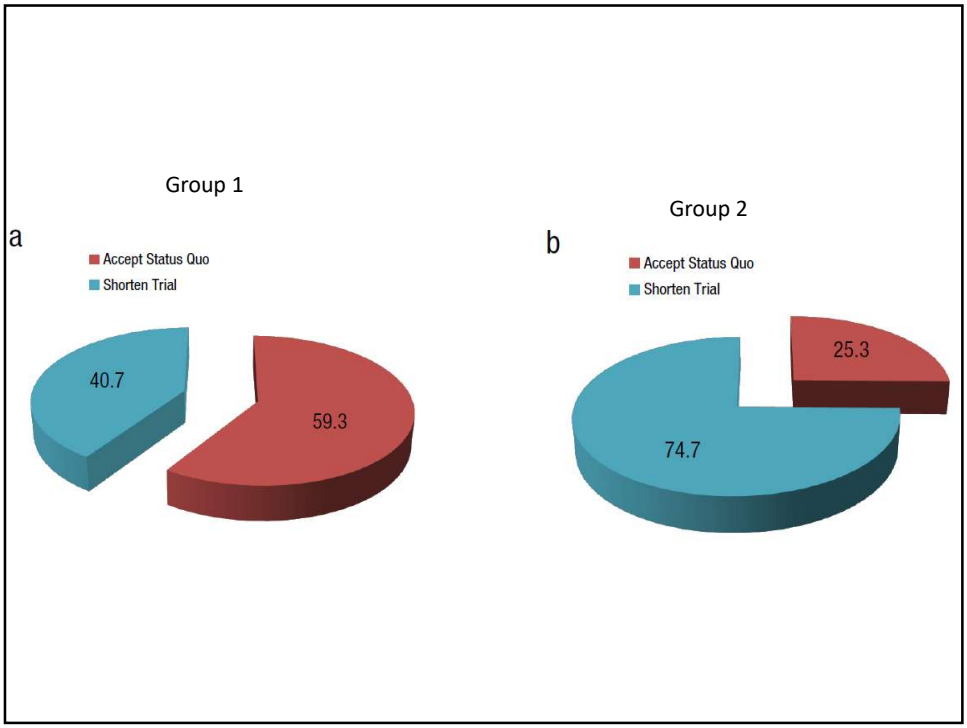
- Study 1: Press a button to shorten the waiting time till an electric shock experiment

Status Quo: not press a button

Alternative choice: press a button

Group 1: choice is made voluntarily by the participants

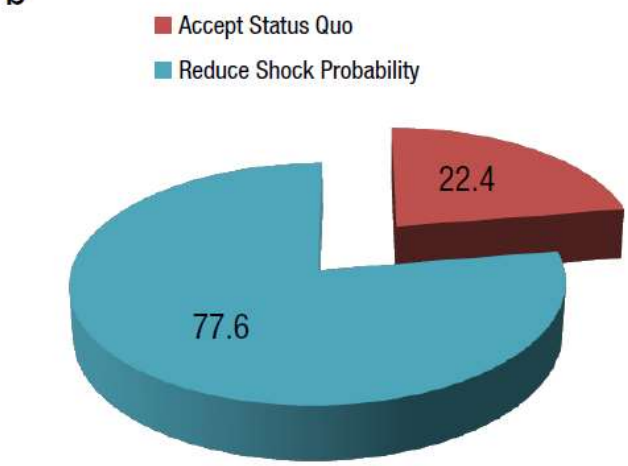
Group 2: participants are forced to make a choice



Study 3: Help participants to “experience” the new choice beforehand.

One such manipulation could be to require participants to press the button that reduced the shock probability early in the experiment. This would remove participants' resting-state inertia and thereby reduce their SQB. Support

b



However, this is frequently not possible. For example, it is difficult to mandate that people get flu vaccinations or get medical checkups on a regular basis. In such cases, it is important to provide individuals with sufficient support to overcome their inaction inertia (or other default state). Our findings from Study 3 suggest an effective way to do this would be to focus resources to induce individuals to try the recommended option once. After they have completed the activity for the first time, their psychological inertia (Gal, 2006) would make it easier for them to repeat the action. This suggests, for example, that it may be better to invest scarce resources to induce people to get the flu vaccine once, for the first time, rather than spend money on a broader campaign aimed both at potential first-time and repeat vaccine recipients. More broadly, efforts focusing on getting individuals to commence taking their medications as prescribed, go for their first medical checkup, or go for a first run may lead to the overcoming of patient inertia and the initiation of lasting compliance behavior.

Intertemporal Choice

- Which would you prefer?
- A: $2000 right now
- B: $2400 in a year from now

- Which would you prefer?
- C: $2000 in 10 years
- D: $2400 in 11 years

=>Time Inconsistency

- When the optimal decision at one point in time is no longer the optimal choice at another point in time

Discounting

- **Exponential** discounting(time consistent)

$$f(t) = \delta^t$$

- **Hyperbolic** discounting (time inconsistent)

$$g(t) = \frac{1}{(1+Kt)}$$

K: adversiveness of delay (captures exactly how inconsistent time preferences are)

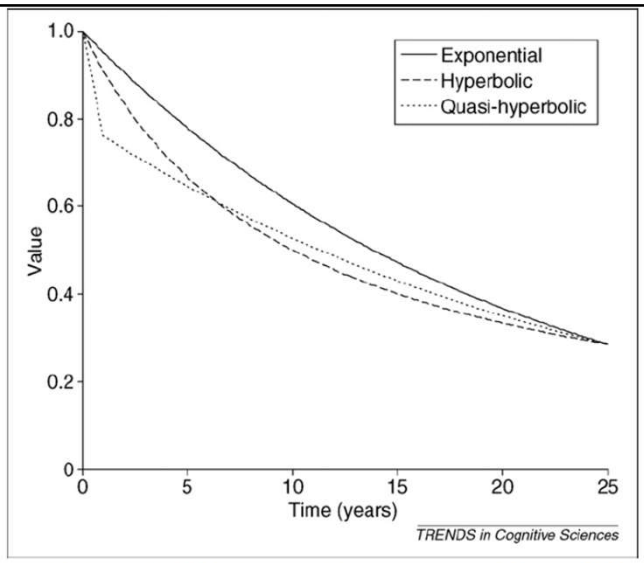
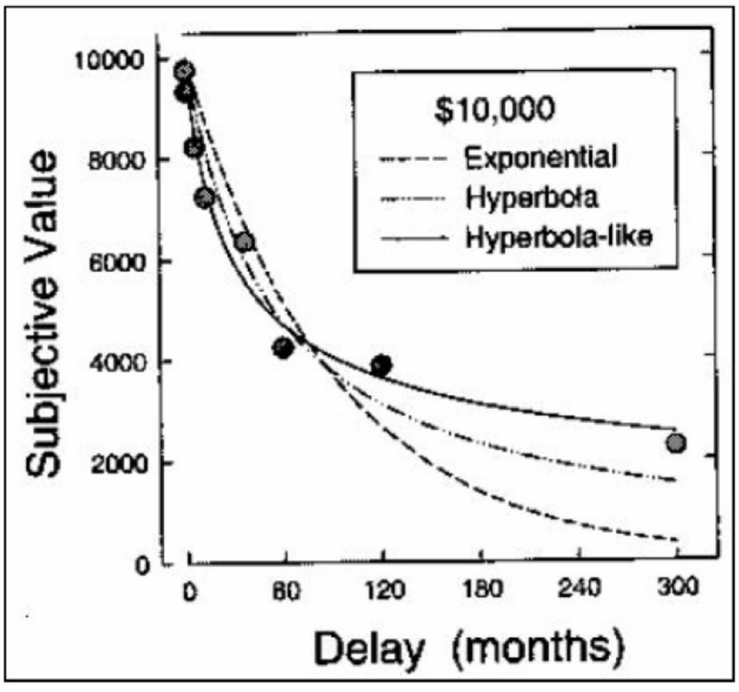


Figure 1. Discount functions. Exponential discounting assumes a constant rate of discounting, e.g. δ^t where δ is the discount rate (here, $\delta = 0.95$). Hyperbolic discounting is generally greater for short time periods than long periods, and can be described by a function of the form $1/(K * t + 1)$. Here, $K = 0.1$. Quasi-hyperbolic discounting is a piecewise function that follows a form similar to exponential discounting after the first discount period (i.e. the first year): 1, $\beta \cdot \delta$, $\beta \cdot \delta^2$, …, $\beta \cdot \delta^t$. (Here, $\beta = 0.792$ and $\delta = 0.96$.)



Why? Time Inconsistency

- We do not discount all time periods uniformly.

=> we do not apply a constant discount factor δ to all time periods.

- Rather, we have different factors for different time periods.
- We overweight time periods that are closer to the present relative to time periods that are further in the future.
- For example, we exhibit a higher discount rate between now and 1 year from now than over 7 years from now and 8 years from now.

=> Hyperbolic Discounting

Preference Reversal (under slightly different context) & Hyperbolic Discounting

Q: How much dollars are you willing to accept after one week in order to forgo $1.50 now?

Today	$1.50	
After 1 week		
After 2 weeks		
After 10 weeks		
After 50 weeks		

- Any evidence of hyperbolic discounting?

- excel

Sunk Cost Fallacy

"To choose a course of action that builds on past investments that you *would not choose* if you were in exactly the same position but with a different history of investments."

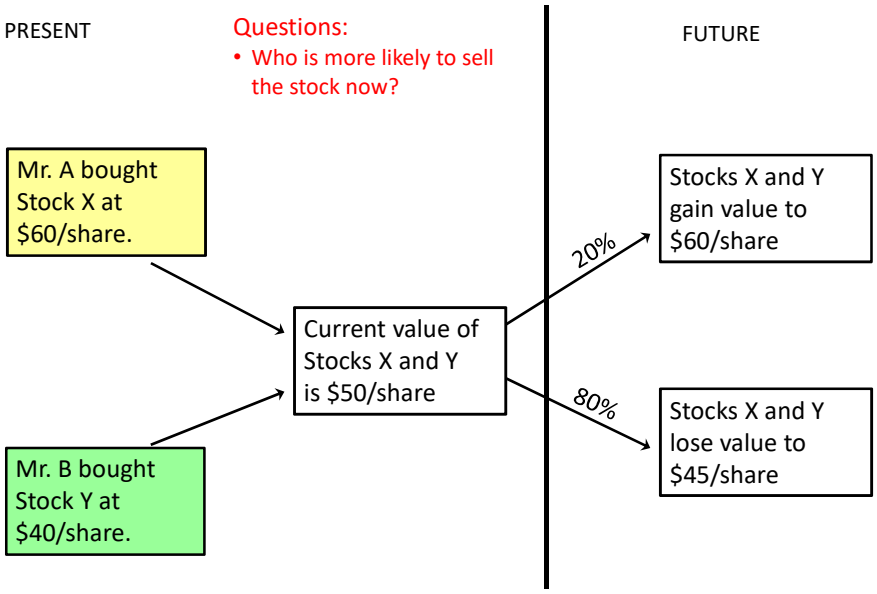
Your choice:

- Maintain course: Keep investing your time, money and effort on a project in which you have already invested some time, money or effort.
- Change course: Pursue a new project.

Advice – Ignore the time, money and effort in the past when deciding what to do next.

- Ask yourself, "What would I do given my present situation if I had not already sunk money or time into a particular project or course of action."

Classic Situation for Sunk Cost Fallacy



Example

You has paid $90 for 1-day only nonrefundable ski lift and rental ticket beforehand.

When you arrived at the resort, it happened that the weather condition was terribly bad, cold, icy, windy…

What will you do?

(a) Stay and ski

(b) Give up and go home

- If you haven't paid for skiing, what would you do?

- Decide whether or not to invest **one million dollars** in a plane that eludes conventional radar.

Senario A

- A competitor had recently begun marketing a better version of the same plane.
- 90% the project has already completed (about 10 million dollars has already spent)

Q: Will you be willing to invest an additional one million dollars to complete the project?

- Decide whether or not to invest **one million dollars** in a plane that eludes conventional radar.

Scenario B

- A competitor had recently begun marketing a better version of the same plane.

Q: Will you be willing to invest one million dollars to complete the project?

The collapse of the dam resulted in the deaths of 11 people and 13,000 head of cattle. The dam cost about $100 million to build, and the federal government paid over $300 million in claims related to its failure. Total damage estimates have ranged up to $2 billion. The dam has not been rebuilt. Safety flaws had been uncovered during construction, but no action was taken.

Summary: Sunk Costs

- It is a decision-making mistake to honor sunk costs.
- Why is it a fallacy to honor sunk costs?

  The decision should be based on what might happen in the future, not on the “loss” of past investments.