

# Game Developers Conference®

February 28 - March 4, 2011  
Moscone Center, San Francisco  
[www.GDConf.com](http://www.GDConf.com)



GDC<sup>25</sup>





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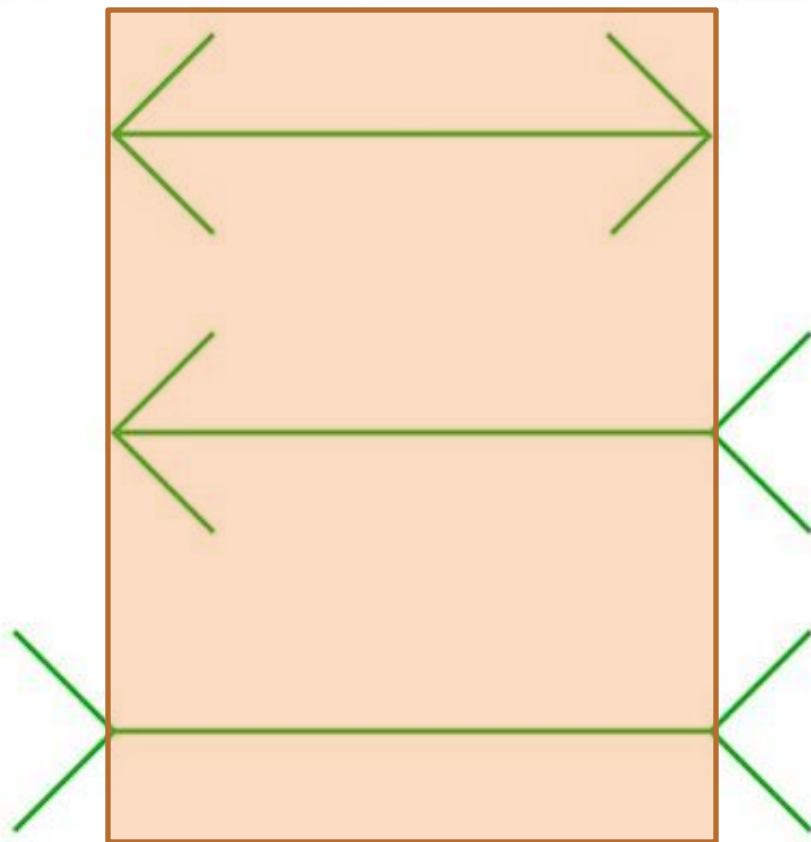


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“the *way* we **see**  
the problem  
*is* the problem”

faulty thinking

becoming a **better producer**  
by **understanding** faults in human **thought**



*"the first principle is that you must **not**  
**fool yourself**  
and **you** are the **easiest person**  
to **fool**.*

*so you have to be very **careful** about that."*

*-richard feynman*



SHELL GAMES





# 1.external expectations

# external expectations



Dr Mark Snyder 1977

external expectations

people will play the role  
that you **cast** them in

external expectations

other people's **expectations** about  
us directly **affect** how we **behave**



1. external expectations

2. Irrational escalation

# Irrational escalation



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00:27:29

1 Gram Platinum Bar



00:29:29

 New Super Mario Brothers  
(Wii)

00:31:29

50 Bids Voucher



00:52:29

# Irrational escalation



Irrational escalation  
justifying increased investment in a decision  
based on **prior** investment  
despite **evidence** suggesting that the  
decision was probably **wrong**

# Irrational escalation



# Irrational escalation

previous investment should

**never** be part of the equation



# Irrational escalation

**clean slate** of the past

VS

clean slate of the **future**



1. external expectations
2. irrational escalation
3. the planning fallacy

# the planning fallacy



Buehler et. al. 2002

# the planning fallacy

tendency to **underestimate** the time,  
costs, and risks of future actions

& at the same time

**overestimate** the benefits of those actions

# the planning fallacy

Why?

by ***thinking of everything*** we fool our self into thinking we've thought of everything

# the planning fallacy



the planning fallacy

# The Outside View

Deliberately avoid thinking about the special unique features of this project

1. external expectations
2. irrational escalation
3. the planning fallacy
4. the halo effect

# the halo effect



warm and friendly



same guy  
Identical content  
cold and distant

Physical appearance  
Mannerisms  
Content of the lecture

the halo effect

students had **no clue**

why they gave one lecturer higher  
ratings

# the halo effect

most got it the **wrong** way  
around

# the halo effect

idea that global evaluations about a person bleed over into judgments about their specific traits



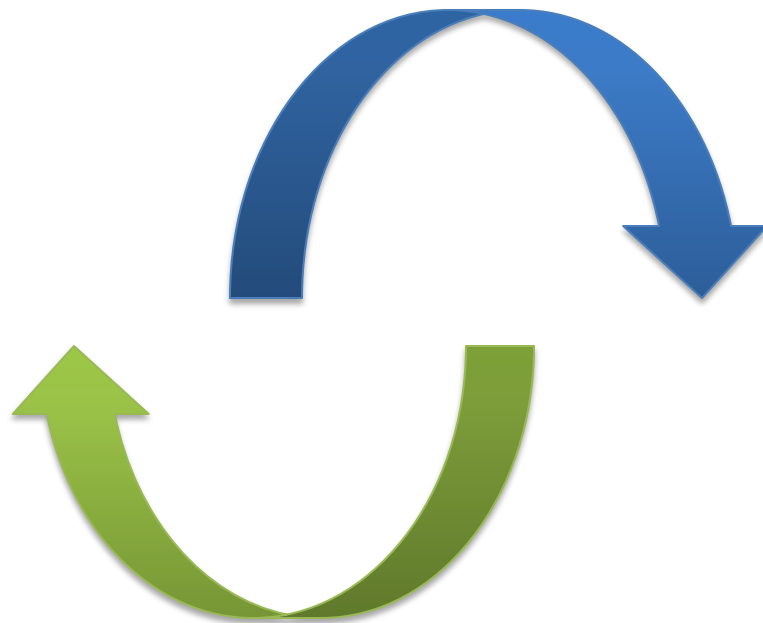
# the halo effect

There are no **devils** or **angels**

“Given enough time **People will** Surprise You”

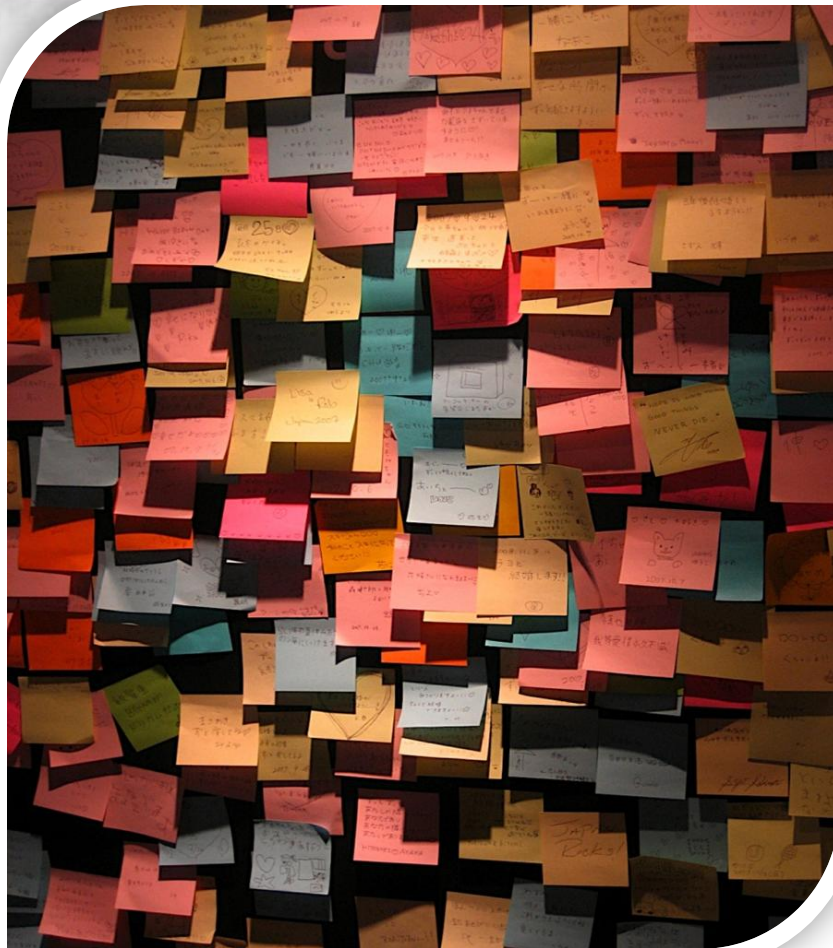
1. external expectations
2. irrational escalation
3. the planning fallacy
4. the halo effect
5. interloper effect

# interloper effect



# interloper effect

tendency to value third party  
consultation as **objective,**  
**confirming, & *without* motive.**



# effect

1. external expectations
2. irrational escalation
3. the planning fallacy
4. the halo effect
5. interloper effect
6. self-serving bias

# self-serving bias



Wolosin, Sherman, and Till 1973

# self-serving bias

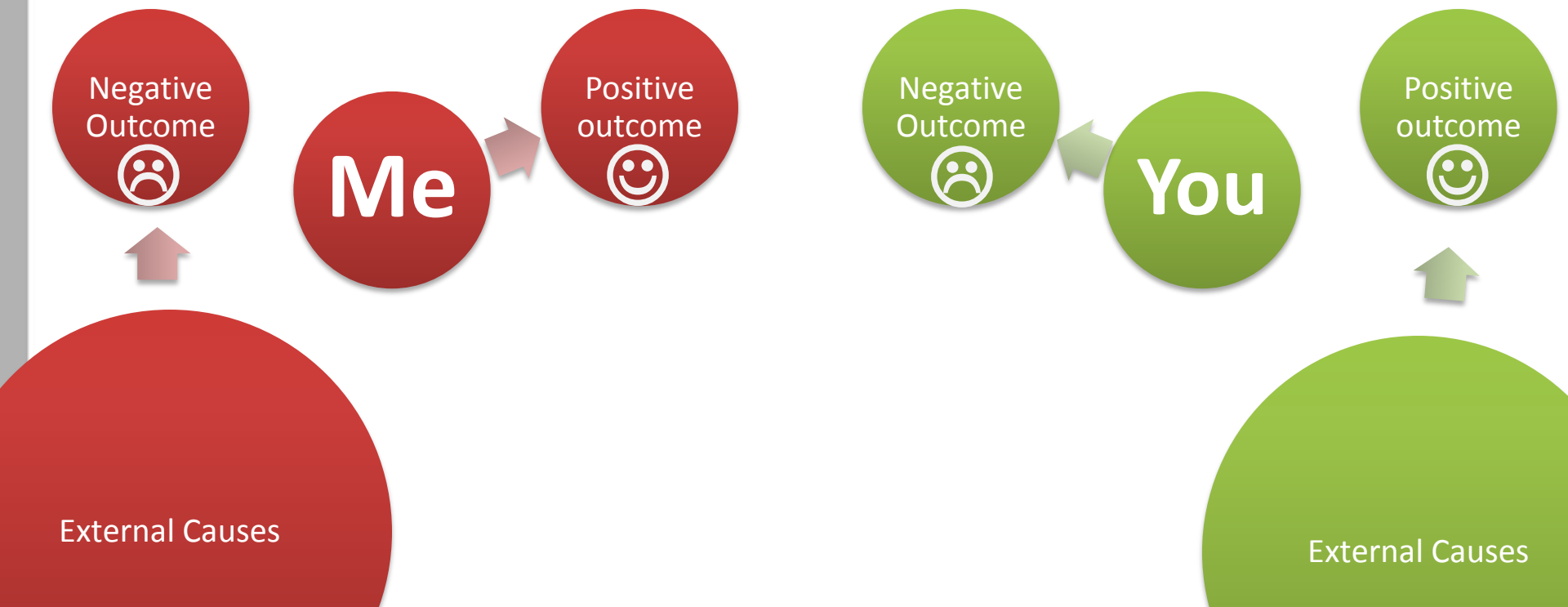
when you attribute **internal** factors to  
**positive** outcomes

&

**external** factors to **negative** outcomes.



# self-serving bias



self-serving bias

interpreting **unclear** information

**systemic** bias

1. external expectations
2. irrational escalation
3. the planning fallacy
4. the halo effect
5. interloper effect
6. self-serving bias
7. illusion of control

# illusion of control

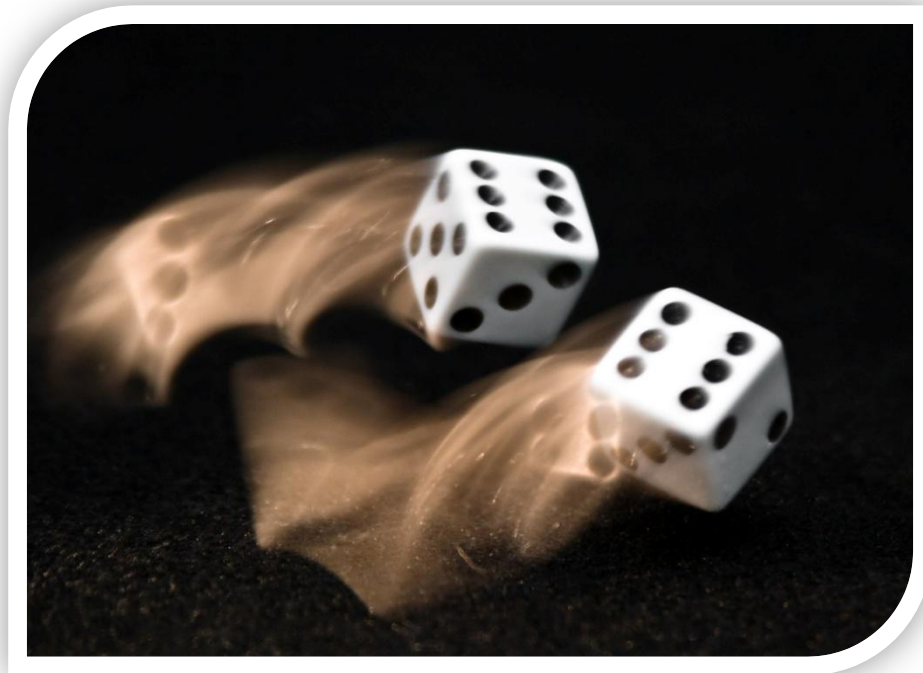


# illusion of control

tendency for people to believe they can **control** outcomes that they clearly have **no** influence on



# illusion of control



Niro Sivanathan 2008

# illusion of control

## Cues from skill based situations

Choice

familiarity

Competition

Involvement

# illusion of control

Truth is more  
important than  
control



1. external expectations
2. irrational escalation
3. the planning fallacy
4. the halo effect
5. interloper effect
6. self-serving bias
7. illusion of control

8. availability heuristic

# availability heuristic



Tversky and Kahnemans 1991

# availability heuristic

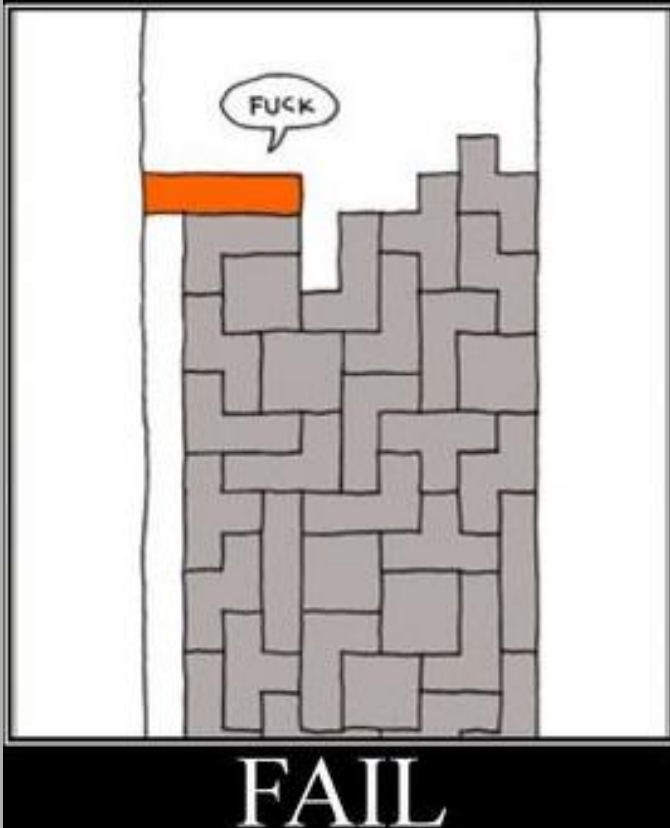
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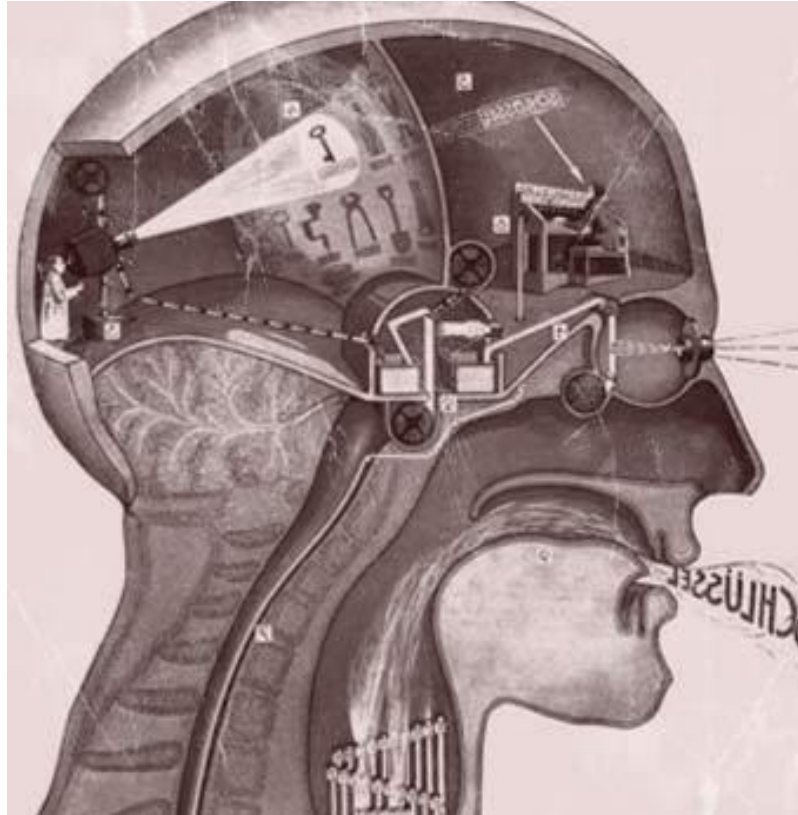
# availability heuristic

tendency to judge the **frequency**  
**or likelihood** of an event by the  
ease with which relevant instances  
come to mind

# availability heuristic



# availability heuristic



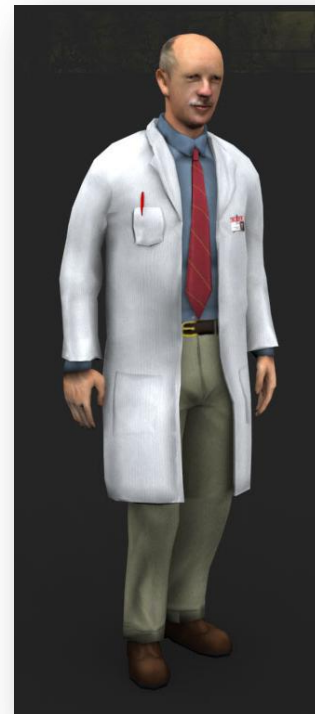
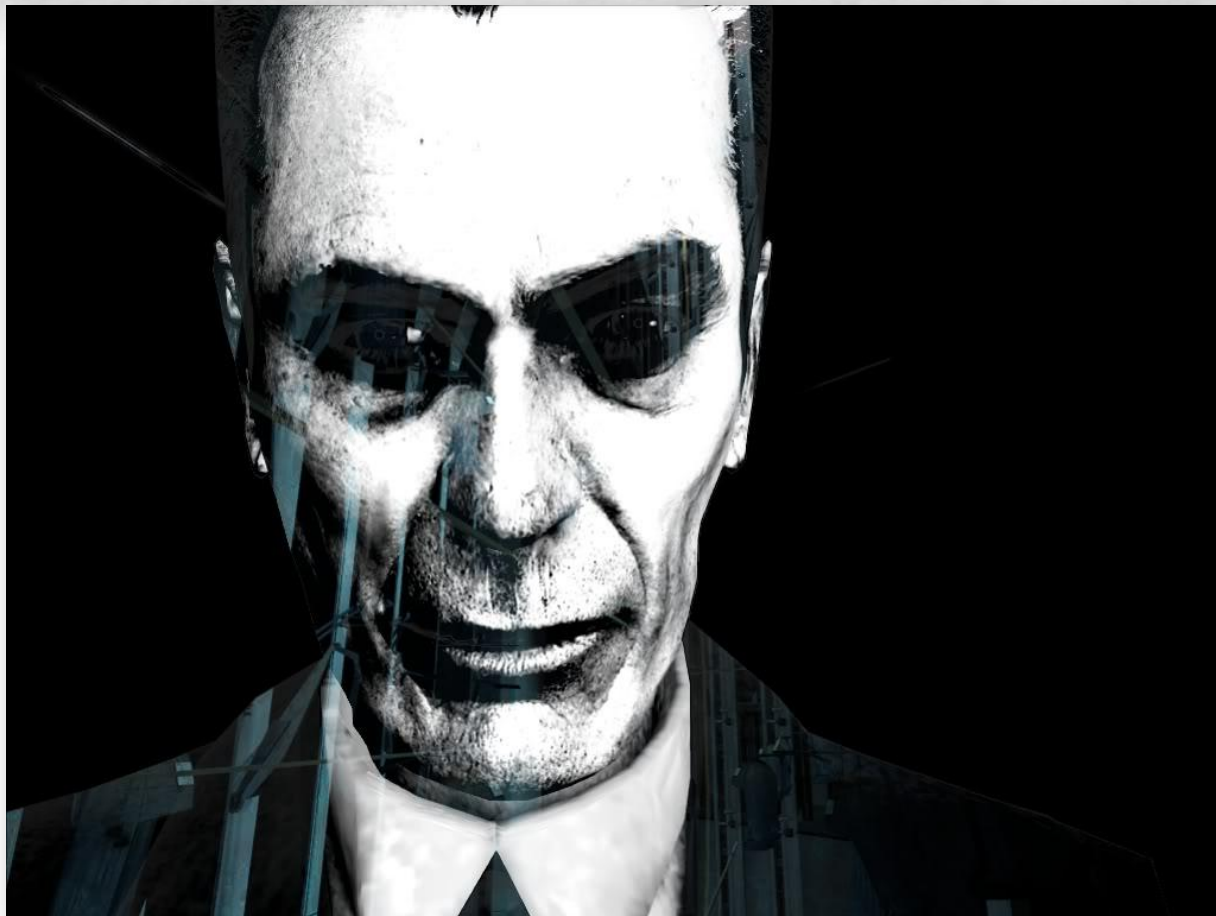
The  
problem

## 8 faults in human thought

Where  
to next

1. external expectations
2. irrational escalation
3. the planning fallacy
4. the halo effect
5. interloper effect
6. self-serving bias
7. illusion of control
8. availability heuristic













thank you

questions?



chuck hoover



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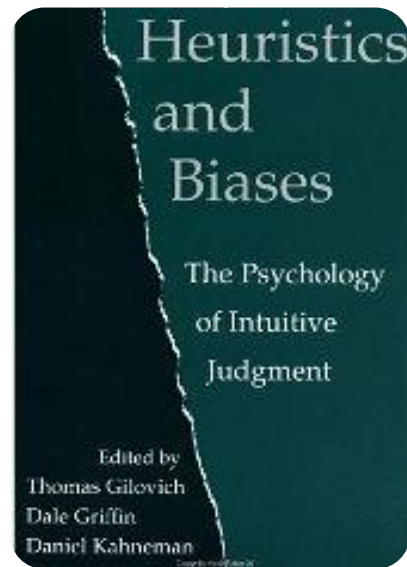
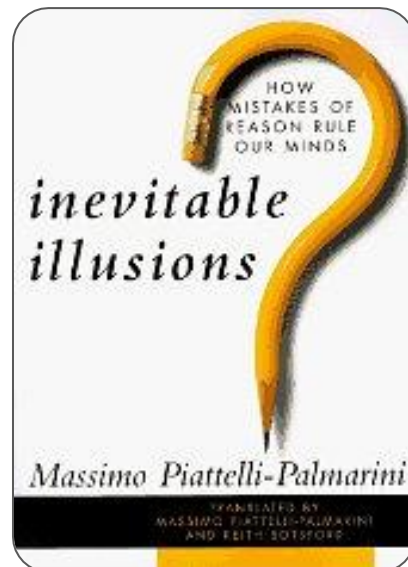
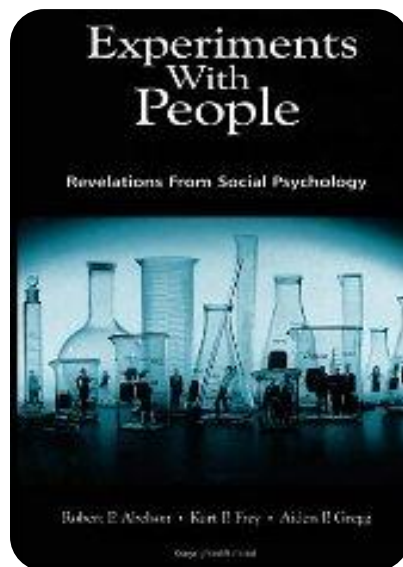
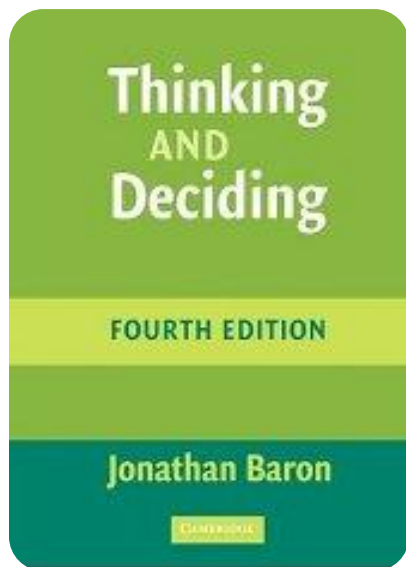


[Icaruschuck](#)



[productionsig.com](http://productionsig.com)

# recommended reading



Massimo Piattelli-Palmarini **Inevitable Illusions: How Mistakes of Reason Rule Our Minds**

[ChangeMinds.ORG](http://ChangeMinds.ORG), *How we change what others think*

recommended  
reading

Baron, Jonathan, ***Thinking and deciding***

[Lesswrong.com](http://Lesswrong.com), *A community dedicated to refining the art of human rationality*

Dale Griffin, Daniel Kahneman , ***Heuristics and biases: The psychology of intuitive judgment***

Schacter, Daniel L., **The Seven Sins of Memory: Insights From Psychology & Cognitive Neuroscience**

Tversky, A., and Kahneman, D. **Availability: a heuristic for judging frequency & probability**