Rules of Thumb

Rules of Thumb: The importance of heuristic and cognitive biases in pediatric physical and mental health

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Children’s Hospital Grand Rounds
July 30 2013
Disclosure

I, Kristopher Kaliebe, do not have relationship(s) with commercial interests.

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A commercial interest is any entity producing, marketing, re-selling, or distributing health care goods or services consumed by, or used on, patients.
OBJECTIVES:

At the conclusion of this activity, participants should be able to:

1. Review the “rational actor” model and basic decision making heuristics.
2. Discuss common judgment biases and errors and how they affect lifestyle.
3. Discuss three rules of thumb which promote mental and physical health.
Rational Actor Model

• *Aka Rational choice theory*, Also known as *choice theory* or *rational action theory*

• A framework for understanding and modeling social and economic behavior
Obesity Trends* Among U.S. Adults
BRFSS, 1985

(*BMI ≥ 30, or ~ 30 lbs overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1995

(*BMI ≥30, or ~ 30 lbs overweight for 5’4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2000

(*BMI ≥30, or ~ 30 lbs overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2002
(*BMI ≥30, or ~ 30 lbs overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2004
(*BMI ≥30, or ~ 30 lbs overweight for 5’ 4” person)
Obesity Trends Among U.S. Adults
BRFSS, 2008
Figure 1. Trends in obesity among children and adolescents: United States, 1963–2008

NOTE: Obesity is defined as body mass index (BMI) greater than or equal to sex- and age-specific 95th percentile from the 2000 CDC Growth Charts.

Diabetes Trends* Among Adults in the U.S. (Includes Gestational Diabetes)

BRFSS 1994 Source: www.cdc.gov
Diabetes Trends among Adults in the U.S. (Includes Gestational Diabetes)

BRFSS 1996  Source: www.cdc.gov
Diabetes Trends* Among Adults in the U.S. (Includes Gestational Diabetes)

BRFSS 1998  Source: [www.cdc.gov](http://www.cdc.gov)
Diabetes Trends* Among Adults in the U.S.
(Includes Gestational Diabetes)
BRFSS 2000  Source: www.cdc.gov
Diabetes Trends* Among Adults in the U.S.
(Includes Gestational Diabetes)
BRFSS 2002  Source: www.cdc.gov
Diabetes Trends* Among Adults in the U.S. (Includes Gestational Diabetes)

BRFSS 2004  Source: www.cdc.gov
Diabetes Trends* Among Adults in the U.S.
(Includes Gestational Diabetes)

BRFSS 2005  Source: www.cdc.gov
Rational Actor Model

uses a narrow definition of "rationality" to mean that an individual acts as if balancing costs against benefits to maximizes personal advantage.

-perceived as successfully describing much of the behavior in capital markets

-implicitly embraced by many fields – including medicine
Are We Rational?

- *Thinking Fast and Slow* - Kahneman
- *Black Swan* - Taleb
- *Blink* - Gladwell

- Cognitive Therapists: Beck, Ellis
- Psychodynamics: Freud
Rational Actor Model Assumptions:

An individual has
• Perfect information about what will occur due to the choice made.
• The cognitive ability to weigh every choice.
• The time to weigh every choice
Bounded Rationality/ Satisficing  Herbert A. Simon

Satisficing: Seeking a satisfactory solution rather than the optimal one

Bounded rationality: Decision-making, rationality is restricted by information, cognitive limitations, and time.
Bias = Systematic judgment error

(often repeating the same mistake)

• Experimental data and “free range” human behavior frequently deviates from sound judgment

• Emotional disturbance can contribute to it but does not explain this phenomenon
Heuristics

A set of learned or hardwired internal cognitive schema that drive a surprisingly large amount of human choice.

Straightforward and practical, though imperfect, decision-making tools.

Innate heuristics make us irrational, including being susceptible to manipulation
Why does the brain use heuristics?

Complexity

• The inability to compute the expected utility of every alternative action.

• Deliberation costs (time and energy) can be high
Is simple better?

• Gigerenzer proposes and shows that simple heuristics often lead to better decisions than complex theoretically optimal procedures.

• Applying judicious heuristics can facilitate healthy choices, especially in challenging risk opaque environments.
Anchoring and adjustment

• The tendency to rely too heavily on the first piece of information offered (the "anchor") when making decisions.

• When no decision (or diagnosis) is know, the most recent piece of information is over-weighted

• We are anchored by asking price, health claims, advertisement or packaging.
Availability heuristic

• A mental shortcut that occurs when people make judgments about the probability of events by the ease with which examples come to mind.

• People choose things that come to mind quickly and easily.
**Familiarity heuristic**

- Individuals assume that the circumstances underlying the past behavior still hold true for the present situation = we act as if the present is like the past

- When people have started a certain behavior, they're likely to continue it.  (The long tail of childhood – and training!)
**Representativeness heuristic**

- If one item seems like another (called the same name / placed in the same group/ advertised like the other), then it takes on the theoretical properties of the similar item.

- Honey Nut Cheerios = Cheerios.
Escalation of commitment

• People justify increased investment in a decision, based on the cumulative prior investment.

• This is despite new evidence suggesting that the cost, starting today, of continuing the decision outweighs the expected benefit.
Affect heuristic

• Judging the risks and benefits of something, depending on the positive or negative feelings that people associate with a stimulus.

• It is the equivalent of "going with your gut".
Framing Effect

- People react differently to a particular choice depending on whether it is presented as a loss or as a gain.

- People tend to avoid risk when a positive frame is presented but seek risks when a negative frame is presented.
The Narrative Fallacy

We like stories, we tend to believe stories and if a story is lacking, we often make up a story.

“The one telling the story has the advantage” Nassem Taleb
Distracted Living? A Bandwidth Problem

• The cookie dilemma

• Silence while making a difficult left turn

Do we (and patients) not address things that are critically important but not urgent?
In the 1950s, many (or most) doctors smoked tobacco

- Medical community’s generally passive stance for over 40 years
- Cigarette sales boomed
- Disastrous health consequences of smoking were clear
Overconsumption Dilemmas

- Hyper-palatable food
- Video Games
- Social Media
- Television
- Gambling
- Substance abuse
The Stoics and the Dark Side of Pleasure

**Marcus Aurelius:** If we cannot resist pleasures, we will end up playing the role of slave
Lifestyle and Mental Health
Walsh American Psychologist 2011

• Nutrition
• Exercise
• Nature
• Reduction of Media Hyper-reality
• Relaxation and Leisure
• Purpose / Spirituality
• Contribution and Service
Self Care and Lifestyle Interventions:

• Broad Effects
• Sustainable
• Empowering
• Safe
• Non-pathologizing
• Address causes rather than symptoms

• “Self Care is the Heart of Health Care” - Gordon
The right mindset: 3 rules of thumb for health

1. Eat Food
2. Get Up and Move
3. Honor silence

• Approximately right, rather than precisely wrong!
Eat food

• Eat minimally processed whole foods whenever possible.
Eat food

• Monitoring various nutrients seems attractive and is popular.

• Yet: is modern whole wheat bread "healthy?"
Eat food

• Not too much

• Mostly Plants
FOOD RULES (sub-rule of thumb)

- French tradition dictates children eat only at breakfast, lunch, “goute” (afternoon snack) and dinner. No additional treats!
- Salad (the healthiest part) or a simple soup begins the meal.
- Commit to an absolute "no" (except celebrations) to problematic fare such as sodas, chips or fast food.
- Bread, Sugar and oils are processed, so use them carefully!
- When eating processed food use small plates and glasses (research shows this really matters).
Eat food

• When children say they “don't like" or “won’t eat” natural foods, assume this is an attempt to train parents to provide processed junk food and they just are not hungry enough.

• When adults says this, they have trained themselves.
• Apply same skepticism about resistance to exercise
Get up and move

- What do fish do?
- What do birds do?
Get up and move

• Sitting is harmful, so avoid it
How much movement is normal?

• Our ancestors used to walk 5-10 miles per day in order to survive

• Now common goals include “30 minutes” per day or “10,000 steps”.

• How much twisting, bending and turning do we do?
Honor silence

• Strong audiovisual stimuli draws our attention

• Negative effects

• Displacement effects

• Meditative and quiet time has powerful effects
Honor silence

- Television viewing
- Video game play
- Phones
- Social networking

- When electronics are made habits: they disrupts sleep, displaces healthier activities and stimulates unhealthy desires.
Don’t be hustled!

• We are more influenced by advertising then we consciously perceive.
• Limiting media also means limiting exposure to marketing.

• Consider heavy advertising is the likely sign of an inferior product.

• Whole industries sell us entertainment, electronics, junk foods, and now, HEALTH CARE!
Engrained unhealthy regimens

• Empathetic, accepting, and positive
• Regardless of whether caregivers are interested in, or ready for, change

• Understand the strong reinforcers that keep patterns going
Summary

• Learn to shun noise, electronics, processed food, sitting, and advertising.

• Aim to honor nature, real food, physical activity and quiet.
Eat food, Honor Silence, Get up and move

• Three simple rules

• More complex = less effective

• Less facts = More Wisdom
Recommendations

• “Born to Run”, Christopher McDougall
  http://www.chrismcdougall.com/

• “The Nature Principle” by Richard Louv
  Http://richardlouv.com/

• “Go Wild”, “Spark” by John Ratey
  http://www.johnratey.com/

“Antifragile” and “Black Swan” by Nassim Taleb
  http://www.fooledbyrandomness.com/
THE END

• QUESTIONS?

• COMMENTS?

• Hate mail: kkalie@lsuhsc.edu
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