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Heuristics & Biases Simplified: Easy to Understand One-Pagers that Use Plain Language & Examples to Simplify Human Judgement and Decision-Making Concepts

Brittany Gullone

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- Present a position that is unique, original and directly applies to the student's experience;
- Use primary sources or apply to a primary organization/agency;
- Conform to the style and format of excellent academic writing;
- Analyze empirical research data that is collected by the student or that has already been collected; and
- Allow the student to demonstrate the competencies gained in the master's program.

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Heuristics & Biases Simplified: Easy to Understand One-Pagers that Use Plain Language & Examples to Simplify Human Judgement and Decision-Making Concepts

Abstract
Behavioral Science is a new and quickly growing field of study that has found ways of capturing readers’ attention across a variety of industries. The popularity of this field has led to a wealth of terms, concepts, and materials that describe human behavior and decision making. Many of these resources are lengthy and complex and thus, may stand in the way of sharing knowledge. The intent of this document is to simplify a few key heuristics and biases. This will help the audience quickly and effectively communicate with others less familiar with these concepts. Each one-pager will highlight one concept with the following components: 1) The definition using plain language 2) Real-world examples observed 3) Effective behavioral interventions 4) Additional resources for further learning.

This document is NOT a comprehensive list of all heuristics, biases, or behavioral science concepts, nor does it capture all of the research, applications, or interventions to date. If effective, this document will serve as a quick reference guide or an introductory resource to a variety of audiences. This “bite-size” and high-level approach is intended to be easy to digest and captivating - consuming the least amount of readers’ time and cognitive effort possible.

Disciplines
Social and Behavioral Sciences

Comments
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Heuristics & Biases Simplified

EASY TO UNDERSTAND ONE-PAGERS THAT USE PLAIN LANGUAGE & EXAMPLES TO SIMPLIFY HUMAN JUDGEMENT AND DECISION-MAKING CONCEPTS

BRITTANY GULLONE ALTONJI, JULY 2019
Behavioral Science is a new and quickly growing field of study that has found ways of capturing readers’ attention across a variety of industries. The popularity of this field has led to a wealth of terms, concepts, and materials that describe human behavior and decision making. Many of these resources are lengthy and complex and thus, may stand in the way of sharing knowledge.

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**ACKNOWLEDGEMENTS**

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<tr>
<th>NAME</th>
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<tr>
<td>Dr. Edward Royzman</td>
<td>Capstone Reader &amp; Professor</td>
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<td>Dr. Christopher Nave</td>
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Page 1
**REPRESENTATIVENESS**

**DEFINITION**

“The subjective probability of an event, or a sample, is determined by the degree to which it: (i) is similar in essential characteristics to its parent population; and (ii) reflects the salient features of the process by which it is generated,” (Kahneman & Tversky, 1972).

Meaning ... our brain tries to find an answer based on similarities to a stereotype rather than considering the true likelihood using simple probabilities.

**REAL WORLD EXAMPLES**

1) In the **lottery**, people prefer “random” number sequences (i.e. 27, 13, 34) to “patterned” sequences (i.e. 10, 20, 30) though they have the same statistical likelihood (Krawczyk & Rachubik, 2019)

2) **Nurses** are often biased by contextual information (i.e. patient lost his/her job) which causes them to overlook/misattribute physiological symptoms (Brannon & Carson, 2003)

3) In **home inspections**, inspectors will often make judgements on the quality of the entire structure based on a small sample to speed up the process (Sprinkle, 2019)

**INTERVENTION(S)**

- Be aware and cautious of irrelevant information (**defensive**)
- Refresh your knowledge of basic statistics (**defensive**)
- To make something attractive, make it similar to something else attractive (**offensive**)

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<td>January 2019</td>
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ANCHORING

DEFINITION

“In many situations, people make estimates by starting from an initial value that is adjusted to yield the final answer. The initial value, or starting point, may be suggested by the formulation of the problem, or it may be the result of a partial computation. In either case, adjustments are typically insufficient. That is, different starting points yield different estimates, which are biased toward the initial values. We call this phenomenon anchoring,” (Tversky & Kahneman, 1974).

Meaning ... we gravitate to the first number (or impression) we hear. Even though we may make small adjustments, we will still end closer to that number (or impression) than we otherwise would have.

REAL WORLD EXAMPLES

1) In negotiations, research strongly supports that final negotiation outcomes end up in favor of (closer to) the party that make the more aggressive first offer
2) In real-estate, a higher asking price is likely to result in a higher final settlement price (Aycock, 2000)
3) People often misestimate time. If you first do a shorter (longer) task, you are more likely to estimate that the second task is shorter (longer) than it really is (Thomas & Handley, 2008)

INTERVENTION(S)

- Re-anchor by countering an extreme number with an equally extreme counter (defensive)
- Make the first offer in negotiations, more extreme than your actual goal (offensive)

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<td>Karen E. Jacowitz &amp; Daniel Kahneman</td>
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The “Big 3” Heuristics

AVAILABILITY

DEFINITION

“The availability of instances or scenarios is often employed when people are asked to assess the frequency of a class or the plausibility of a particular development,” (Tversky & Kahneman, 1974).

Meaning ... if an example comes to mind easily, we think it is more common or more likely to occur than if it comes to mind less easily.

REAL WORLD EXAMPLES

1) Doctors are more likely to diagnose a patient with a certain condition if they had a recent encounter with that condition (Poses & Anthony, 1991)
2) People are more likely to purchase natural disaster insurance after they experience a natural disaster rather than before (Karlsson, Loewenstein, & Ariely, 2008)
3) Students who completed course evaluations requiring 10 critical comments rated the course more favorably than those who had been asked for 2 critical comments (Fox, 2006)

INTERVENTION(S)

- Seek neutral sources of news and media outlets (defensive)
- Research real statistical likelihoods before making a decision (defensive)
- Increase the frequency, strength, and recognizability of your brand (offensive)

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AFFECT HEURISTIC

DEFINITION

“Reliance feelings that are rapid and automatic based on the specific quality of “goodness” or “badness” (i) experienced as a feeling state (with or without consciousness) and (ii) demarcating a positive or negative quality of a stimulus,” (Slovic et al., 2007).

Meaning ... when we have to make a quick decision, we use our feelings as our guide.

REAL WORLD EXAMPLES

1) Holding pricing, service, and amenities equal, consumers differentiated their preference amongst Las Vegas hotels based on emotions (Ro et al, 2013)
2) People who are shown pictures of flooded homes are more likely to consider flooding a true risk – affect is important in effective risk communication (Keller et al., 2006)
3) Consumer evaluations of innovative products are biased based on their positive or negative feelings as they interact with the product (King & Slovic, 2014)

INTERVENTION(S)

- Be aware of your emotional reaction and take mitigating steps to ensure it does not cloud your decision making (defensive)
- Create positive feelings when people interact with your brand to boost its image (offensive)

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<td>March 2004</td>
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</table>
PEAK & END EFFECT

DEFINITION

“Rather than objectively reviewing the total amount of pleasure or pain during an experience, people's evaluation is shaped by the most intense moment (the peak) and the final moment (end),” (Cockburn et al., 2015).

Meaning ... All is well that ends well.

REAL WORLD EXAMPLES

1) In childbirth, the level of pain toward the end of delivery greatly influences the way the entire experience is remembered (Chajut et al., 2014)
2) The best predictor of an employee's quitting a job is the instances of negative peaks and end during their employment (Clark & Georgellis, 2006)
3) In service industries, highest customer satisfaction is reported in interactions that have positive peak experiences and positive endings (Verhoef et al., 2004)
4) Gamblers who received peaks of winnings and ended with a win evaluated their experiences more favorably than those with consistent small winnings (Yu et al., 2008)

INTERVENTION(S)

- When recalling events, give equal weight to all instances; keep a journal and reference all entries before making an overall evaluation (defensive)
- Ensure your customers or patients experience positive ending interactions (offensive)

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SOCIAL PROOF / REFERENCE

DEFINITION

“Using the actions of others to infer the value of a course of action,” (Rao et al., 2001).

Meaning ... When we don’t know what to do, we do what we see others doing

REAL WORLD EXAMPLES

1) In online shopping, ratings and reviews shape reputation and thus, drive demand (Amblee & Bui, 2014)
2) Securities analysts are quick to initiate coverage of a firm when peers have recently begun coverage, and subsequently overestimate the firm’s future profitability (Rao et al., 2001)
3) When asking for charitable donations, volunteer solicitors find that more people donate when they see others donating (Shearman & Yoo, 2007)
4) In supermarkets, healthy consumer choices are influenced by signage stating that it is the most sold item in the store (Salmon et al., 2015)

INTERVENTION(S)

- Seek out multiple sources of independent evaluations before making a decision (defensive)
- Leverage the power and momentum of positive reviews on social media (offensive)
- In marketing, influence consumer behavior by informing them of the majority behavior of other consumers (offensive)

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</table>
OMISSION BIAS

DEFINITION

“People often evaluate a decision to commit an action more negatively than a decision to omit an action, given that both decisions have the same negative consequence,” (Kordes-de Vaal, 1996).

Meaning ... we feel better if we do nothing and something bad happens, rather than if we actively do something bad.

REAL WORLD EXAMPLES

1) **Reluctance to vaccinate children** when the (unlikely) negative effects are ambiguous or unknown (Ritov & Baron, 1990)
2) Because people are susceptible to omission bias, **counter-terrorism** efforts have increased marketing and training that encourages action (Van den Heuvel & Crego, 2012)
3) In **stock market returns**, investors punish firms that have violations by commission (i.e. repeat violations) more severely than those with violations by omission (Wiles et al., 2010)
4) **Pilots** with lower internal sense of accountability related to performance, will rely on automatic systems and take less action thus committing more errors than pilots with a higher sense of personal accountability (Mosier et al., 1998)

INTERVENTION(S)

- Reinforce the importance of accountability, honesty, and speaking up (defensive)
- In negotiations, detect others’ deception by asking direct questions multiple times while looking for inconsistencies in responses (defensive)

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NEGATIVITY BIAS

DEFINITION

“Negative information tends to influence evaluations more strongly than comparably extreme positive information.”

Meaning ... losses (or negative information) make us feel much worse than similar sized gains (or positive information) make us happy.

REAL WORLD EXAMPLES

1) The more negative information is, the more people believe it is true (Hilbig, 2009)
2) When collecting qualitative survey responses, dissatisfied employees are much more likely to leave negative comments than their satisfied peers (Poncheri, 2007)
3) People are more incentivized by the fear of a loss (negative framing) rather than the chance to accrue a gain (positive framing) (Goldsmith & Dhar, 2013)

INTERVENTION(S)

- Increase optimism and more equality evaluate positive and negative stimuli through the practice of mindfulness (defensive) (Kiken & Shook, 2011)
- In older adults, limited attentional resources tend to be drawn to negative stimuli – increasing focus will mitigate this distraction (defensive) (Knight et al., 2007)

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