The Impact of Cognitive Biases on Teams

By:

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What Is Cognitive Bias

• Cognitive bias reflects a pattern of behavior in which a person acts differently than would seem normal in certain situations based on inaccurate judgment or illogical interpretation.
• Cognitive biases work by causing an individual to perceive the world around them in a manner that is outside of what normally would be considered logical.
• Cognitive biases are neither good nor bad if we are aware of them.

No man is an island, 
Entire of itself, 
Every man is a piece of the continent, 
A part of the main.

John Donne
Why Is Cognitive Bias Important?

• Biases are a part of nearly every human interaction because every human has cognitive biases and because humans are all unique the impact of the bias are unique to each individual. Cognitive biases are an inescapable part of basic human nature.
Why Is Cognitive Bias Important?

- Project team members make decisions on a continuous basis. Most decisions are made based on how the decision maker sees the information he or she has at hand.

- All biases can create blind spots. A good coach or leader will first be aware of his or her biases and then help the team understand their own blind spots.
Where do Biases Come From

• Pattern recognition bias helped early humans stay alive by recognizing situations where you’d likely run into predators. The resulting decisions kept our ancestors alive, even if there were false positives (you could have lots of false positives, but only one false negative).
Where do Biases Come From

- Biases develop as shortcuts that help us perceive information and help us make decisions quickly.
- Project teams (Agile or not) use or fall prey to a wide range of biases that affect perceptions and impact decisions.
Three Categories of Cognitive Biases

**Perception Biases**
- Perception biases are filters and/or shortcuts that help us perceive information quickly in a manner that turns out to be generally beneficial to a decision process. Perception biases affect how project teams see information and the types of decisions that can be made.

**Behavior Biases**
- Behavior biases effect how we behave or how we tend to group together (which then affects how we perceive the world around us. Behavior biases create a feedback loop to help us to successfully interact with the environment (at least our perception of our own world).

**Motivational Biases**
- Motivational biases (also known as social biases and attribution biases) reflect errors made when evaluating the rational for your own behavior as well as others. Misperceptions of what is driving behavior can cause team communication problems and erode team trust.
Perception: Anchor Bias

- **Anchor bias** refers to the tendency to rely heavily on one piece of information when making decisions. This bias is often seen when early estimates for a project or tasks are made. The instant they are placed on the table they become a reference point.

Impact Example(s)
1. Can you test this project in two weeks?
2. If I know if it is -12F I am going to feel cold no matter what it says on the thermostat.
Perception: Clustering Illusion

- Clustering illusion (or clustering bias) is the tendency to see patterns in clusters or streaks in a smaller sample of data inside larger data sets.

Impact Example(s):
1. Does a rash of .net coding errors mean programmers need to be retrained?
2. If one project had 1000 regression test errors and another 100, which one had better performance?
3. Are black carp rare?
Perception: Knowledge Bias

- The **curse of knowledge bias** generates a filter that blocks the ability to think about a topic from a different and generally less informed perspective.

Impact Example(s)
1. Your laptop got an update this morning and now it is slow. Updates have been known to cause trouble before . . .
2. The cable cars typically takes 15 minutes to reach the top of Sugarloaf, you have not seen a car in 30 minutes is the cable car broken?
Perception: Status Quo Bias

- The status quo bias is the tendency to want things to stay relatively the same.

Impact Example(s)
1. “There is no place like home.”
2. How many times have you heard “we have always done it that way” or “that’s just the way it is done.”
Perception: Availability Cascade

- An **availability cascade** is when a concept becomes more and more plausible the more it is repeated publicly. It is a self-reinforcing feedback loop.

Impact Example(s)
1. Does the constant publicity on the topic of Agile entice more organizations to try Agile?
2. Remember December 21st and the Mayan Calendar.
Perception: Optimism Bias

• **Optimism bias** is the tendency to be overly optimistic about favorable outcomes.

Impact Example(s)
1. Promises to meet dates that are not possible.
2. Status reports that are “green” when “red” might be more appropriate.
Behavior: Zero-Risk Bias

- A zero-risk bias reflects a preference for mitigating (mitigating means finding a way to make the risk go away) a small risk down to zero, rather than mitigating a larger risk that you can’t drive to zero.

Impact Example(s)

1. I can’t stop my customers from wanting to release before we are fully tested but I can make sure I am fully staffed.

2. I might be able to know what is happening but if I can’t do anything about it, am I mitigating the right problem?
Behavior: Bandwagon Effect

- The **bandwagon effect** occurs when there is a tendency to adopt an idea because the crowd does. For example, when an idea is shown on the cover of all the industry journals, teams tend to take it up with gusto.

Impact Example(s)

1. The media amplify ideas making them seem like everyone is doing them (e.g. Agile, Lean, CMMI).
2. My mother always used to ask if my friends jumped off the roof would I follow them?
Behavior: Illusion of Control

• This bias is called the **illusion of control**, which is defined as the tendency to overestimate one’s (or a team’s) degree of influence over external events.

Impact Example(s)
1. Many test managers believe they can make up for getting code from the developers late.
2. Do you ever turn off a football game so your team will win?
Behavior: Social Desirability Bias

- The social desirability bias is the tendency to over report desirable behaviors while under reporting undesirable behaviors.

Impact Example(s)
1. Why are projects green status today and then red tomorrow?
2. Why do people happy to live in large cities despite horrible pollution?
Behavior: Comparison Bias

• When a team is assembled by a leader with a **social comparison bias**, membership decisions are made so that those who are on the team don’t compete with the leader’s strengths.

Impact Example(s)
1. Team diversity leads to innovative solutions, homogenous teams tend to be weaker.
2. Bull elephants drive other males away that can compete.
Behavior: Restraint Bias

- **Restraint Bias** is the tendency to overestimate one's ability to show restraint in the face of temptation.

Impact Example(s)
1. Think ice cream after dinner or email every time the Outlook chimes.
Behavior: Experimenter’s Bias

- **Experimenter’s Bias** is the tendency for experimenters to believe, certify, and publish data that agree with their expectations for the outcome of an experiment, and to disbelieve, discard, or downgrade the corresponding weightings for data that appear to conflict with those expectations.

Impact Example(s)

1. Why do some organizations benchmark performance only to disagree with the results?
Motivation: Halo Effect

- **The halo effect** is when our impression of a person influences how we interpret their specific traits.

Impact Example(s)

1. A person that jumps in to work late to get the job done (hero) is perceived to be a better overall performer than another person with better skills.
2. Mark C. Bojeun, author of Program Management Leadership, suggests that leaders create a bubble around teams that can empower high performance teams.
Motivation: Illusion of Transparency

- **Illusion of transparency** is a bias in which an individual overestimates another individual’s ability to know them, and/or overestimate their own ability to understand what is driving someone else.

Impact Example(s)
1. Johari Window indicates that there is always part of a team that we do not understand.
2. Teams, like dance partners, only think they know how their partner will react.
Motivation: Intergroup Bias

• Hardening of team boundaries can lead to intergroup bias. Intergroup bias motivates members of a group to give preferential treatment to others members of the group.

Impact Example(s)
1. The Stockholm effect is a type of intergroup bias.
2. Teams resist ideas that are outside the teams norms, consider the difficulty integrating testers into Agile development teams from independent testing teams.
Motivation: Fundamental Attribution Error

- **Fundamental attribution error** refers to a scenario in which an individual overemphasizes personality-based explanations for behaviors (e.g. they are lazy, they aren’t very smart) in others while underemphasizing the influence the situation had on driving the behavior.

Impact Example(s)

1. How many times have you heard, “developers never give us enough time to test because they don’t understand testing?”
Motivation: System Justification

• **System Justification** Bias refers the tendency to defend and bolster the status quo. Existing methods and techniques tend to be preferred, and alternatives disparaged sometimes even at the expense of individual and collective self-interest.

Impact Example(s)
1. How many times have you heard, “that is just the way we do it around here”?
Motivation: Barnum Effect

• The **Barnum Effect** (Forer Effect) the tendency to give high accuracy ratings to descriptions of their personality that supposedly are tailored specifically for them, but are in fact vague and general widely.

Impact Example(s)
1. Horoscopes
2. High level project estimates
Class Discussion Example 1

Rumadak’s manager tells he believes the new SAP release can be system and regression tested in 3 weeks before she estimates the project.

1. What bias is play in this circumstance?

2. What should Rumadak do to guard against this form of bias?

3. When can we use this type of bias to our advantage
Class Discussion Example 2

Joe is a both a top tech lead and leader of the organizations standards committee. Joe is leading a move to disband the independent test group and incorporate the personnel into development.

1. What types of bias might Joe bring to the discussion?

2. What significant bias will Joe’s suggestion trigger in the independent test group?

3. What biases could be used to resist the pressure to incorporate?
Class Discussion Example 3

Billy needs to recruit a team member. Team members that get more attention than he does makes Billy nervous. Therefore, in interviewing he is careful to search for people that, while they can do the job, will not outshine him.

1. What type of bias(es) Billy showing?
2. How can this type of behavior impact Billy’s team and the people on his team?
3. If you were Billy’s manager how would you help Billy improve the recruitment process and reduce the effects of his bias?
Summary

• Biases are everywhere.
• Everyone is effected by cognitive biases.
• Not all biases are bad.
• Just like our actions, we are responsible for our biases.
Thank you

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