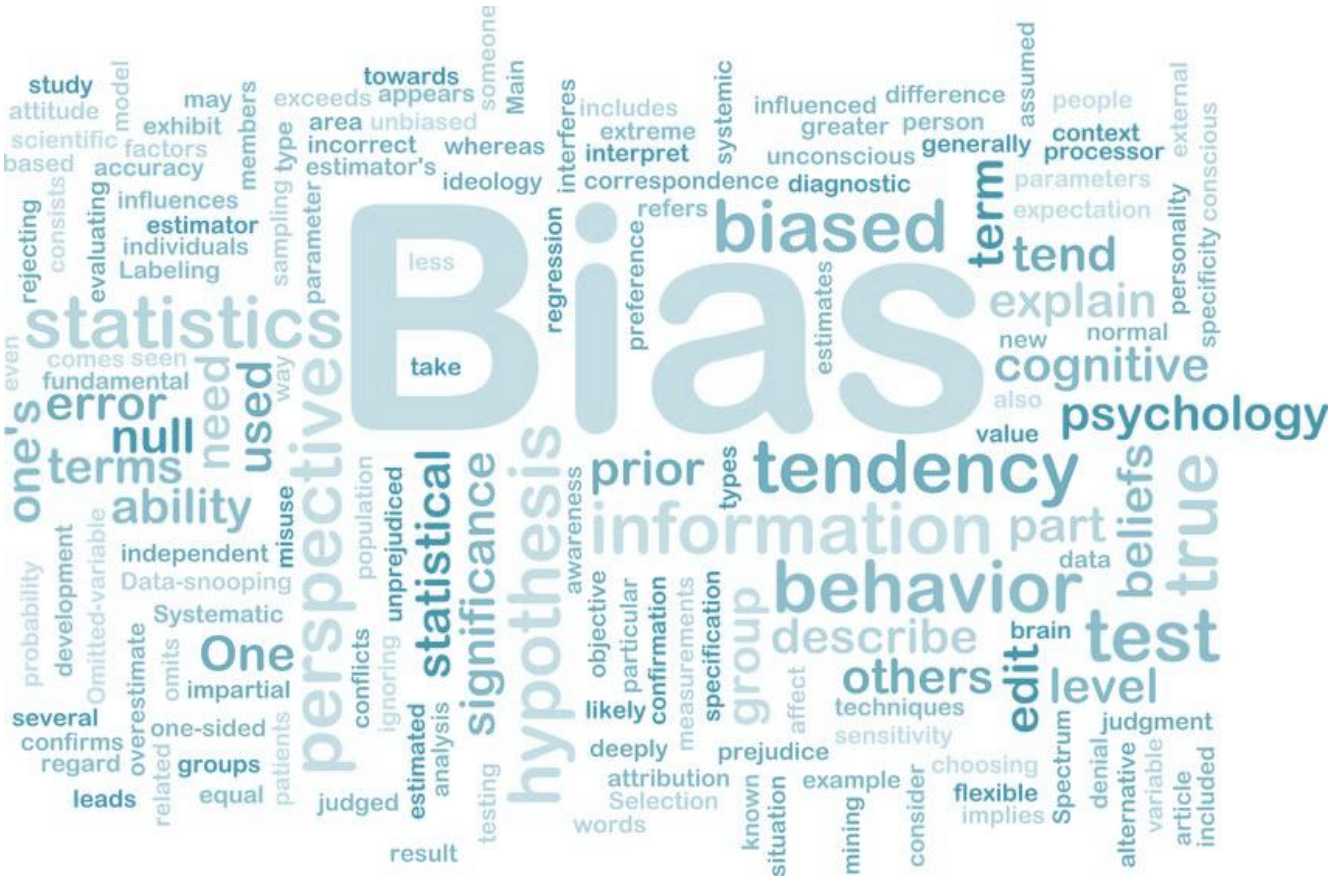
COGNITIVE BIASES



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Psychological biases

Most of us like to think that we are capable of making rational decisions. However, all of us are inclined to interpret situations in biased ways, often based on our cultural norms and beliefs. Even the most well-trained intelligence brain is still a human brain.

Biases are normal processes designed to make decisions quickly. They are unconscious, automatic and non-controllable and there is no magical solution to overcome these reflexes.

However, knowing their effects, when and where they apply as well as some key structured techniques, can help mitigate their negative consequences. Systematically identifying their effects on your analysis is a habit that each analyst should possess.

SELECTION BIASES

Selection biases are caused by choosing non-random data for analysis. Some information are unconsciously chosen or disregarded, misleading the analyst into a wrong conclusion.

Anchoring effect

Relying too heavily on one piece of information, usually the first piece of information found, when making decisions.

Availability cascade

Judging the frequency of an event or category by the ease with which instances of this comes to mind.

Confirmation bias

Only seeking information that confirms our initial decisions, hypothesis, judgements or conclusions ignoring information against them.

Evidence acceptance bias

Accepting data as true and focus more on the coherence of the story than the reliability of the underlying data.

Salience bias

Focusing on the most easily recognisable, interesting or shocking features in a set of data, while other possibilities or alternative hypotheses are ignored.

MITIGATION STRATEGIES

Usability of data

- Are they relevant to your research topic?
- Are they complete (i.e. across groups or sectors?)
- Are they sufficiently recent?
- Are they representative?
- Are they comparable to other data you have available?

Credibility of data

- Triangulate the information and look for strong corroboration and consistency with other independent sources.
- Assess the weight of evidence supporting specific conclusions.
- Consider if the explanation is plausible given the context
- Look for negative cases
- Re-examine previously dismissed information or evidence.
- Consider whether ambiguous information has been interpreted and caveated properly.

Reliability of data

- The qualifications and technical expertise of the source
- Its reputation and track record for accuracy
- Its objectivity and motive for bias
- Its proximity to the original source or event

Assessing information gaps

- Check if your analysis is based on enough information.
- Assess what information is missing and also how necessary it is to get this information.
- Compare how much time, effort, resources it will take to get or have access to this information.
- Ask yourself if you can use lessons learned or historical analogy to fill this gap.

SOCIAL BIAS

Social biases are a result of our interactions with other people. The way we are processing and analysing information depends on our relations with the persons who provided us with information or hypotheses.

Groupthink

Choosing the option that the majority of the group agrees with or ignoring conflicts within the group due to a desire for consensus.

Halo effect

Accepting or rejecting everything another group member says because the analyst likes/respects or not the person.

Institutional

Interpreting information in line with the interests of a certain organisation.

Mirror imaging

Assuming that others will act the same as we would, given similar circumstances.

Stereotyping

Expecting a group or person to have certain characteristics without having real information about the person.

MITIGATION STRATEGIES

Analysis of Competing Hypotheses

- After identifying all reasonable alternative hypotheses, develop a matrix of hypotheses and input the evidence for each hypothesis to examine the weight of evidence.
- Determine whether each piece of evidence is consistent, inconsistent or not applicable to each hypothesis.
- Compare hypotheses to each other rather than evaluating the plausibility of each hypothesis in turn.
- Focus on disproving hypotheses rather than proving one.
- Identify and assess the evidence consistent with each hypothesis to see which explanations are strongest. The best hypothesis is not the one with the most evidence in favour, but the one with the least evidence against.

PROCESS BIAS

Process bias is our tendency to process information based on cognitive factors rather than evidence. When we process information, we often display inherent thinking errors. They prevent an analyst from accurately understanding reality even when all the needed data and evidence are in his/her hand.

Clustering illusion

Overestimating the value of perceived patterns in random data.

Framing

Being influenced in our decisions by how a situation has been presented.

Hindsight

Claiming the key items of information, events, drivers, forces, or factors that actually shaped a future outcome could have been easily identified and predictable than they actually were.

Impact

Overestimating the significance of an event based on the potential impact.

MITIGATION STRATEGIES

Six Hats Method

- Edward de Bono's method is a parallel thinking process that helps analysts overcoming their assumption, biases and heuristics.
- Members of a team are assigned with a "role" to play, a hat to wear.
- They can more easily examine a hypothesis from different angles: neutral, emotional, creative, optimist and pessimist angles.
- By making the way the information is processed obvious to everyone, members of a team can acknowledge the limitations and advantages of each of the roles.

INTRODUCTION

"We usually think of ourselves as sitting in the driver's seat, with ultimate control over the decisions we made and the direction our life takes; but this perception has more to do with our desires—with how we want to view ourselves—than with reality" (Dan Ariely)

Most of us like to think that we are capable of making rational decisions. However, all of us are inclined to interpret situations in biased ways, often based on our cultural norms and beliefs. Even the most well-trained intelligence brain is still a human brain. As such it is vulnerable to influences and misperceptions.

Perception is a deliberate process involving attention to a very small part of the whole and exclusion of almost all that is not within the scope of attention. Try the experiment of Simon and Chabri to realise how much we are missing when we are not focusing on the bigger picture. Our perceptions are shaped by our past experiences, education, cultural values, roles and tasks and assumptions and preconceptions. They frame our vision of the world and our actions and can make us unaware of other's vision of the same issue.

If we are asked to solve a complex problem quickly while being under pressure, we will rely on our intuitive system and use mental shortcuts (heuristics). Our brain is wired to rely on previous experiences, intuition and heuristic techniques to solve problems. Biases and heuristics are techniques that our brain employs that are far from perfect, but sufficient for the immediate goals. They are not exceptional responses to problems of excessive complexity or an overload of information, but normal responses about likelihood, frequency, and prediction. In general, biases are helpful; they enable us to make quick and efficient judgements and decisions with minimal cognitive effort.

But they can also blind a person to new information. Not recognising this influence on our choices and decision-making can be damaging to the quality and accuracy of our analysis. So then *what do we do*? We cannot change ourselves and erase any trace of biases in our mind, but being aware of our cognitive limitations can already help us reduce their negative effects. More than 280 biases have been identified by researchers however this paper only presents a selection of 38 biases that particularly apply to the humanitarian world. It aims at warning the analysts of the effects of biases, and present some useful strategies and tools to mitigate the effects of biases.

I. Thinking Fast and slow

Our brains are comprised of two sides: one that thinks fast, what Daniel Kahneman called system 1, and one that thinks slow, system 2.

System 1 operates intuitively, involuntary, and effortlessly but is difficult to modify. While system 2 requires focusing, reasoning and solving problems by not jumping to quick conclusions. These two systems often conflict with one another. System 1 operates on biases, shortcuts that may not be accurate. System 2 requires effort evaluating those mental models to assess how right there are in a given situation.

The assessment of a situation suggested by System 1 always comes first, and is then—time, disposition, and capacity permitting—interrogated more systematically by System 2 and consciously revised if in error.

System 1 uses heuristics: experience-based techniques that can give a solution that is not guaranteed to be optimal. The objective of a heuristic is to produce quickly a solution that is good enough to solve the problem at hand. Most of the time System 1 is a well-adapted system. However, for some activities and decisions, approximations are not allowed and can have dramatic consequences. Analysts can err by over relying on or misapplying heuristics, and need to avoid relying solely on System 1's logic.

II. Biases and strategies to mitigate their effects

"It is difficult for us to fix errors we can't see" (Daniel Kahneman)

It is primordial to acknowledge biases in order to overcome them. The following sections will describe the main biases, as well as some mitigation strategies.

The application of a range of structured, creative and critical thinking techniques can assist the analyst to make a better informed decision or produce a more robust product.

Some techniques and strategies to mitigate the effect of our biases are described below. They can be used by one individual but usually work better when applied in a group-setting.

SELECTION BIASES

"Any man who reads too much and uses his own brain too little falls into lazy habits of thinking" (Albert Einstein)

Selection biases are caused by choosing non-random data for analysis. The bias exists due to a flaw in the sample selection process. Some information are unconsciously chosen or disregarded, misleading the analyst into a wrong conclusion.

Absence of evidence: A failure to consider the degree of completeness of available evidence and not addressing the impact of the absence of information on analytic conclusions.

Example: During the Ebola crisis, no nutrition problem was reported. It is then tempting to conclude that no nutrition need and support existed. However, the absence of nutritional status information was a result of the "no-touch" policy which prevented screenings and therefore the reporting of information. The absence of information in this case did not indicate the absence of a problem, but the impossibility of getting the information about a potential issue.

Anchoring effect: Relying too heavily on one piece of information, usually the first piece of information found, when making decisions.

Example: In assessing the need of food assistance of affected populations in a given area, the first evidence found is a testimony of few villagers saying they lack proper food to feed their children. Despite the contradictory information, you will find afterwards, this first testimony will be the one you remember and base your conclusions on.

Availability cascade: Judging the frequency of an event or category by the ease with which instances of this comes to mind.

Example: When an outbreak of meningitis is declared in a region, humanitarians are more likely to think about meningitis first when patients present similar symptoms, while they could only have the flu.

Confirmation bias: Only seeking information that confirms our initial decisions, hypothesis, judgements or conclusions ignoring information against them. We tend to listen only to information that confirms our preconceptions.

Example: The Ebola epidemic in West Africa was initially approached from a sole medical and epidemiological perspective. Only Ebola cases were seen as the priority. The initial assessment of the situation did not provide a good comprehensive picture of humanitarian impacts and requirements. It provided only a fragmented picture of the needs and risks and left organisations to neglect beneficiary groups at the beginning. This slow and inadequate perception of the crisis produced "a new crisis within the Ebola crisis", with major non-Ebola related health, food, livelihood and education needs unmet.

Conservatism bias: Favouring prior evidence over new information that has emerged.

Example: Today I received some information by a local source about potential water shortage in an area. A week later, other sources indicate that water is running fine in the villages. Few days later, the same information is confirmed by other sources. Despite the overall number of sources confirming the absence of problem, the prior information is still the one I believe is true. Therefore, I will base my analysis on this finding only and look for other evidences that confirm the presence of a problem.

Evidence acceptance bias: Accepting data as true and focus more on the coherence of the story than the reliability of the underlying data.

Example: I have multiple local and biased sources indicating protection needs: few mention recent increase in displacement, others mention reports of gender-based violence and some indicates tensions between local armed groups. The story seems to hold up: because of renewed tensions between local armed groups, the population started fleeing the area and was being targeted by the armed group. I will accept the story as it seems to make sense. However, if I start to have a closer look at the data, I would realise that the recent increase dates prior the renewed tensions between armed groups. If I dig a bit more, I might realise that no baseline data was available before on displacement so the "increase" mentioned is based on the intuition of the author of the report and not on credible data.

Pro-innovation bias: Overvaluing the usefulness of innovation and undervaluing its limitations.

Example: Social media monitoring during humanitarian emergency is being seen as a new innovative source of information. However, like all other forms of assessment, social media monitoring alone cannot provide a comprehensive overview of needs or opinions. It is just one piece of the analysis puzzle, and knowing the limitations and bias within social media data is essential. In Nepal, ACAPS team found that the social acceptability of topics plays an important role in the scope of possible analysis: while queries related to issues such as shelter or food returned results of consistently high quality, some WASH, protection and health issues could not be easily monitored as they were not discussed publicly (ACAPS, 09/2015).

Publication bias: Reporting news when there are none. After spending a considerable amount of time, energy or resources on a topic, it might be difficult to publicly announce that nothing relevant has been found.

Example: In 1995, only 1% of all articles published in alternative medicine journals gave a negative result (BMJ, 2001). No such data exists for the humanitarian field, but it can be expected that a very small number of assessment reports for example detail how there is no humanitarian need. Even when none was found, most reports will try to detail what could be there.

Recency: Weighting recent events disproportionately higher than past events.

Example: After the earthquake in Nepal, humanitarians would be more likely to include earthquakes or natural disasters as a scenario the humanitarian community needed to prepare for even in countries were the likelihood of such large-scale natural disasters is low.

Salience or vividness bias: Focusing on the most easily recognisable, interesting or shocking features in a set of data, while other possibilities or potential alternative hypotheses are ignored.

Example: Thinking of an Ebola outbreak whenever blood and fever are the symptoms presented by people in an area while statistically it is more likely than it is not such deadly disease.

Satisficing bias or Premature closure: Selecting the first finding or conclusion that appears "good enough." Prematurely stopping the search for a cause when a seemingly satisfactory answer is found before sufficient information can be collected and proper analysis can be performed.

Example: In a given area, we notice a drop of students attending schools. After some verification, the area happens to be a territory contested by different armed groups. Now that I found a logical explanation, because of a conflict and insecurity, students are not safely able to reach schools. The insecurity explains the drop. But if I look a bit closer and asks some of the students why are they not going to school, I might found out that in fact it is not the insecurity that prevent them from going to school but the rise in the price ticket of the bus going to school from their villages. If I prematurely stop my research after the first possible and rational explanation, I might miss the actual explanation.

Survivorship bias: Focusing only on positive examples, causing us to misjudge a situation.

Example: We might think that setting up a hygiene awareness project is easy because we have not heard of all those who failed.

MITIGATION STRATEGIES FOR SELECTION BIASES

The key to overcome selection biases is to examine carefully the credibility and reliability of sources and data used to base the analysis. Techniques which allow to do that are:

Usability of Data: Check if you can use your data.

- Are they relevant to your research topic?
- Are they complete (i.e. across groups, geographical areas or sectors?)
- Are they sufficiently recent?
- Are they sensitive?
- Are they representative?
- Are they comparable to other data you have available?
- Are they trustworthy?

Reliability of the Sources: Review systematically all sources, then identify information sources or references that appear most critical or compelling. Assess:

- the qualifications and technical expertise of the source
- its reputation and track record for accuracy
- its objectivity and motive for bias
- its proximity to the original source or event

Credibility of the Data: Triangulate the information with other sources: – are there details being left out by one source? Assess the credibility of the evidence:

- Evaluate how accurate and precise the information is.
- Check for strong corroboration and consistency with other sources.
- Look for negative cases
- Identify the key themes indicated in the evidence and assess the weight of evidence supporting specific conclusions.
- Consider if the explanation is plausible given the context
- Re-examine previously dismissed information or evidence.
- Consider whether ambiguous information has been interpreted and caveated properly.
- Indicate a level of confidence in references.

Assess Information Gaps: Check if your analysis is based on enough information.

- Assess what information is missing and also how necessary it is to get this information.
- Compare how much time, effort, resources it will take to get or have access to this information.
- Ask yourself if you can use lessons learned or historical analogy to fill this gap.

SOCIAL BIASES

Social biases are a result of our interactions with other people. The way we are processing and analysing information depends on our relations with the persons who provided us with information or hypotheses.

Attribution error: Overemphasising personality-based explanations for behaviours observed in others, while under-emphasising the role and power of situational influences on the same behaviour.

Example: Thinking that a farmer managed to sell more wheat because he/she is very hard-working, and not because he/she had the opportunities (maybe he/she lives closer to the market), means (maybe he/she used new fertilizers) and support (several members of his/her family help him/her) to achieve such results.

False consensus: Overestimating the degree to which others agree with each other and usually assume that silence means agreement. Groupthink: Choosing the option that the majority of the group agrees with or ignoring conflicts within the group due to a desire for consensus. Belonging to the group becomes of greater importance than expressing individual disagreements. Members therefore avoid going against the flow of the discussion and do not examine thoroughly alternative hypothesis.

Example: We saw earlier than the absence of information does not always mean absence of a problem. Similarly, the absence of negative reactions on the findings of an assessment for example does not always mean that every member of the team agrees with the findings. Some might be afraid of the consequences of speaking up, some might feel they are not legitimate enough to express their disagreement. It is easier to comfort our opinion by not seeking explicitly feedbacks.

Halo effect: Accepting or rejecting everything another group member says because the analyst likes/respects or not a person.

Example: Affinity plays a bigger role in our analysis than we think. I will have a tendency to trust what my dear friend and colleague said rather than what my competitive and cold colleague have to say about the same situation.

Institutional bias: Interpreting information in line with the interests of a certain organisation.

Example: A WFP analyst will have a tendency to analyse information through the lens of food security and livelihood.

Mirror Imaging (also known as projection): Assuming that others will act the same as we would, given similar circumstances or that the same dynamic is in play when something seems to accord with an analyst's past experiences. It is also the tendency to assume that others share the same or similar thoughts, beliefs, value or positions.

Example: At the beginning of the Ebola crisis, humanitarian actors assumed that affected communities will be open to sensitisation campaigns and were surprised by the aggressive attitude of the affected populations.

Stereotyping: Expecting a group or person to have certain characteristics without having real information about the person. It allows us to quickly identify strangers as friends or enemies but we tend to overuse it even when no danger is perceivable.

Implicit association: Unconsciously associating concepts with evaluative judgements (good, bad…). An implicit association occurs outside of conscious awareness and control.

Example: We usually assume that girls are more likely to drop schools in humanitarian crises. Accordingly, most humanitarian programmes focus on getting girls back to school. However, in Somalia, for example, fewer than 40% of children were attending schools — girls slightly less than boys. But the agencies dealing with education initially only focused on why girls were not attending, and did not look into why boys were dropping out. This caused a backlash in the community, as female education was seen as a western concern.

MITIGATION STRATEGIES FOR SOCIAL BIASES

The key to overcome social biases is to examine carefully the number of assumptions used to fill information gaps and to actively seek alternative hypothesis. Techniques which allow to do that are:

Alternative hypotheses: Systemically explore multiple ways in which a situation can develop based on same data. Identify alternative options or outcomes and/or explore the consequences of a specific course of action.

Competing Hypotheses: After identifying all reasonable alternative hypotheses, develop a matrix of hypotheses and input the evidence for each hypothesis to examine the weight of evidence. Compare hypotheses to each other rather than evaluating the plausibility of each hypothesis in turn. The best hypothesis is not the one with the most evidence in favour, but the one with the least evidence against.

- Brainstorm to identify all possible hypotheses.
- List all significant evidence/arguments relevant to the hypotheses.
- Prepare a matrix with hypotheses on top and each piece of evidence on the side. Determine whether each piece of evidence is consistent, inconsistent or not applicable to each hypothesis.
- Refine the matrix and reconsider the hypotheses.

- Focus on disproving hypotheses rather than proving one. Identify and assess the evidence consistent with each hypothesis to see which explanations are strongest.
- Ask what evidence is missing but would be expected for a given hypothesis to be true.
- Establish the relative likelihood for hypotheses and report all conclusions.

Devil's Advocacy: Challenging a view or consensus by building the best possible case for an alternative explanation and explicitly contesting key assumptions to see if they will hold.

- Identify the key assumptions of the main line of thinking and assess the supportive evidence.
- Select one or more assumptions that seem to be the most susceptible to challenge.
- Review the evidence to determine if some are of questionable validity or whether major gaps exist.
- Highlight any evidence that could support an alternative hypothesis or contradicts the current thinking.

Differential Diagnosis: List all the different possibilities and eliminate the possibilities one by one:

- Identify a list of problems.
- Consider and evaluate the most common origin.
- List all possible diagnosis/root causes for the given problems.
- Prioritize the list of candidate causes by their severity.
- Evaluate and eliminate the candidate causes, starting with the most severe.

Key Assumptions Checklist: Challenge assertions and assumptions to identify faulty logic or flawed analysis.

- Review the current line of thinking on an issue. Write it down.
- Articulate all the premises and assumptions, both stated and unstated, which must be true for this line of thought to be valid.
- Challenge each assumption. Why must it be true? Does it remain valid under all conditions?
- Ask the standard journalist questions. *Who*: Are we assuming that we know who all the key players are? *What*: Are we assuming that we know the goals of the key players? *When*: Are we assuming that conditions have not changed since our last report or that they will not change in the foreseeable future? *Where*: Are we assuming that we know where the real action is going to be? *Why*: Are we assuming that we understand the motives of the key players? *How*: Are we assuming that we know how they are going to do it?
- Refine the list of key assumptions to include only those that must be true for the plan or argument to be valid. Consider under what conditions these assumptions may not hold.
- Place each assumption in one of three categories: basically solid, correct with some caveats, and unsupported or questionable –the "key uncertainties."
- Consider whether key uncertainties should be converted into new information collection requirements or research topics.

Logic Mapping: Mapping the logic underpinning an argument or decision to identify faulty logic.

- Read through the arguments and evidence supporting them.
- Use post-its to identify key elements of the logic. Each post-it should contain one assumption, assertion, key argument, deduction and conclusion.
- Arrange the post-its on a wall/board, clustering similar themes and identify the connecting or linking arguments and key relationships.
- Group each cluster under a theme. Note any isolated post-its or clusters that do not fit into.
- Create a diagram showing the key elements of the arguments.

PROCESS BIASES

"Constantly questioning our own thinking would be impossibly tedious…much too slow and inefficient….The best we can do is a compromise: learn to recognize situations in which mistakes are likely and try harder to avoid significant mistakes when the stakes are high" (Kahneman)

Process bias is our tendency to process information based on cognitive factors rather than evidence. When we process information, we often display inherent thinking errors. They prevent an analyst from accurately understanding reality even when all the needed data and evidence are in his/her hand.
Blind-spot: Noticing cognitive and motivational biases much more in other than in themselves. Overconfidence: Being too confident about our abilities, leading us to take greater risks.

Example: By reading this brief, you probably already associated some of the biases with some of your colleagues, boss, friends. However, how many biases did you identify for yourself? It is more difficult to realise what are *our* biases compared to see them in others. When we are unaware of our own biases, it can lead us to take decisions without getting all the information we needed first.

Choice-supportive: Feeling positive over choices we have made, even if that choice has flaws.

Example: During a previous assignment, I might have chosen to distribute mosquito nets in one place. Since I already chose and used a strategy, I will be more tempted to apply the same response option in a new context. I will trust my previous choices and not reassessed if it will be the most appropriate one in this new context.

Clustering illusion: Overestimating the value of perceived patterns in random data. The human brain excels at finding patterns and relationships, but tends to overgeneralise. We usually confuse correlation for causation. While the two might be correlated, meaning they appear to follow the same path, they do not cause each other.

Example: During World War II, the German military regularly bombed London. Some areas of neighbourhoods in London were hit more often than others, triggering some people to move out from the worst affected areas. Consequently, the relatively untouched areas were suspected to be home to those sympathetic to the enemy. However, shortly after war, British statistician R. D. Clarke analysed 537 impacts and found that there was no consistent pattern that would confirm an intention to target more specifically an area than another one; the bombs which hit London were randomly dropped (Clarke, 1946).

Framing: Being influenced in our decisions by how a situation has been presented.

Example: During the Ebola crisis, one of the sub-cluster was named Dead Bodies Management framing our vision of the issue in very simple terms: people were dying we needed to dispose of the bodies to avoid further infection. By doing so we neglected to see the social and religious component of death in the culture of the population affected fuelling discontent, anger and frustration towards the international community. This same sub-cluster was later renamed Safe and Dignified Burials to acknowledge and take into consideration the symbolic of death and not only the management of corpses.

Hindsight bias: Claiming the key items of information, events, drivers, forces, or factors that actually shaped a future outcome could have been easily identified and predictable than they actually were. Once we know something we cannot remember the time when we did not know it, challenging our ability to learn from past failures. A known outcome of an event usually appears obvious after the fact.

Example: Most people agree today that the removal of Gadhafi was a mistake that the international community should have foreseen before it allowed a country to spill into civil war. Today, it is obvious; however back in 2011, Gadhafi was being seen as a threat.

Hyperbolic discounting: Having a stronger preference for more immediate payoffs relative to later payoffs.

Example: During an epidemic, I will prioritise sending out doctors to cure the patients, as it will have on the short-term a positive impact and not prioritise a more time consuming solution which might be training local doctors to this specific disease.

Impact: Overestimating the significance of an event based on the potential impact. Predicting rare events based on weak evidence or evidence that easily comes to mind.

Example: Just because a nuclear war between North Korea and another country might happen one day and lead to terrible human consequences, does not mean that we need to focus all our efforts on preparing to this possibility.

Information volume bias: Seeking information when it does not affect action. More information does not always mean better decision.

Example: Once enough and credible information which have been triangulated had shown some humanitarian needs, there is no need to conduct more surveys, assessments or researches to confirm the existence of humanitarian needs at 100%. Separating what we *need* to know to what we would *like* to know is key to avoid being overwhelmed with irrelevant data. Narrow down the scope of your inquiries by establishing priorities.

Irrational (commitment) escalation: Justifying increased time investment based on previous and existing time investment. Making decisions and committing resources does not necessarily guarantee a reward and may produce a loss.

Example: Usually this logic prevails when someone has spent a significant amount of time looking at an issue, with no visible outcome, generating frustration. To counterbalance the frustration, this person will likely spend even more time trying to find something valuable to justify the overall amount of time already spent for nothing. If I have been researching for days about evidence of displacement in an area without finding any tangible proof, I am more likely to spend even more time until I found some proof, even very weak, that could justify my time investment, such as the possibility of someone knowing someone who could have left the area because of a perceived threat.

Negativity: Paying more attention to and give more weight to negative rather than positive experience or other kinds of information.

Example: The 2015 presidential elections in Nigeria preparations triggered a lot of fear among the humanitarian community, as many expected electoral violence to spark. Nigeria detains the record of military coups in the continent, 19 in total. Based on this data, the international community focused its attention on negative signs that could indicate violence: reports

of displacement, corruption, frauds… However, good signs, such as peaceful conflict mechanisms put in place, commitment of the two main leaders were interpreted as non-events or less significant than the negative ones.

Ostrich effect: Ignoring dangerous or negative information.

Example: Tsunami sirens supposed to warn population and reach higher grounds are repeatedly ignored to past malfunctions and false alarms.

Planning bias: Overlooking the significance of uncertainty; often resulting for example in the underestimation of how long a project will take.

Example: The German strategist, Motke, once said: "No battle plan ever survives contact with the enemy". It is true for any plan, there is always something that goes differently than expected when in contact with the reality: a village previously selected for an assessment is inaccessible because of recent weather conditions, a team taking longer to recruit, a delivery of humanitarian goods being delayed by a strike in air transport. Always assume that a project will take longer or be more expensive than you thought.

Risk-adverse: Fearing of losing more than willing to win. We are often risk-averse to gains and risk-seeking to avoid further loss.

Example: Collaboratively undertaking field assessments in Nepal after the 2015 Earthquake was discarded by humanitarian actors more due to the fear of failing after examples such as Typhoon Pablo and Haiyan in Philippines than from a lack of information perspective.

Selective attention/perception: Allowing our expectations to influence how we perceive the world.

Example: If your supervisor asks you to investigate the possibility of sanitation needs in a given context, you might come cross other needs that your organisation could as well address. However, since your attention will be focused on the research of one specific needs, you will have a tendency to disregard other information perceived as irrelevant.

Status quo: Not being able to envisage a situation different from the current setting.

Example: Lack of scenario building or anticipatory analysis generally leads to the predominance of single humanitarian narratives and long term planning exercises based on static sets of assumptions, while situations and settings changes quickly and way of working are rarely challenged.

Wishful thinking: Overestimating the probability of good things happening.

Example: Somalia conflict has been going on for decades, it will probably end soon.

Zero-risk: Preferring eliminating a small risk by reducing it to zero over a greater reduction of a bigger risk. We love certainty, even when it is counterproductive. Resources are increasingly devoted on reducing low-risk issues, despite major risks still lack the appropriate funding.

Example: In a given region, drought is very likely, which would worsen the food security situation of the affected communities. However, you chose to focus on the potential WASH problems resulting from an unlikely increase of displaced population instead.

MITIGATION STRATEGIES FOR PROCESS BIASES

The key to overcome process biases is to examine carefully the problem using different angles and perspectives. Techniques which allow to do that are:

What If? Analysis Challenging a mind-set or a stated assumption that an event will not happen by assuming that it has occurred and exploring how it came about.

- Assume the event has happened.
- Select triggering events that permitted the scenario to unfold to help make the 'what if' more plausible.
- Develop a line of argument based on logic and evidence to explain how this outcome could have come about.
- Work backwards from the event in concrete ways –specify what must actually occur at each stage of the scenario.
- Identify one or more plausible scenarios to the unlikely event.
- Consider the scope of the positive and negative consequences of each scenario and their relative impacts.
- Generate a list of indicators or events for each scenario that would help detect the beginnings of the event.
- Monitor the indicators developed.

Six hats method: Edward de Bono's method is a parallel thinking process that helps analysts overcoming their assumption, biases and heuristics. Members of a team are assigned with a "role" to play, a hat to wear. They can more easily examine a hypothesis from different angles: neutral, emotional, creative, optimist and pessimist angles. By making the way the information is processed obvious to everyone, members of a team can acknowledge the limitations and advantages of each of the roles.

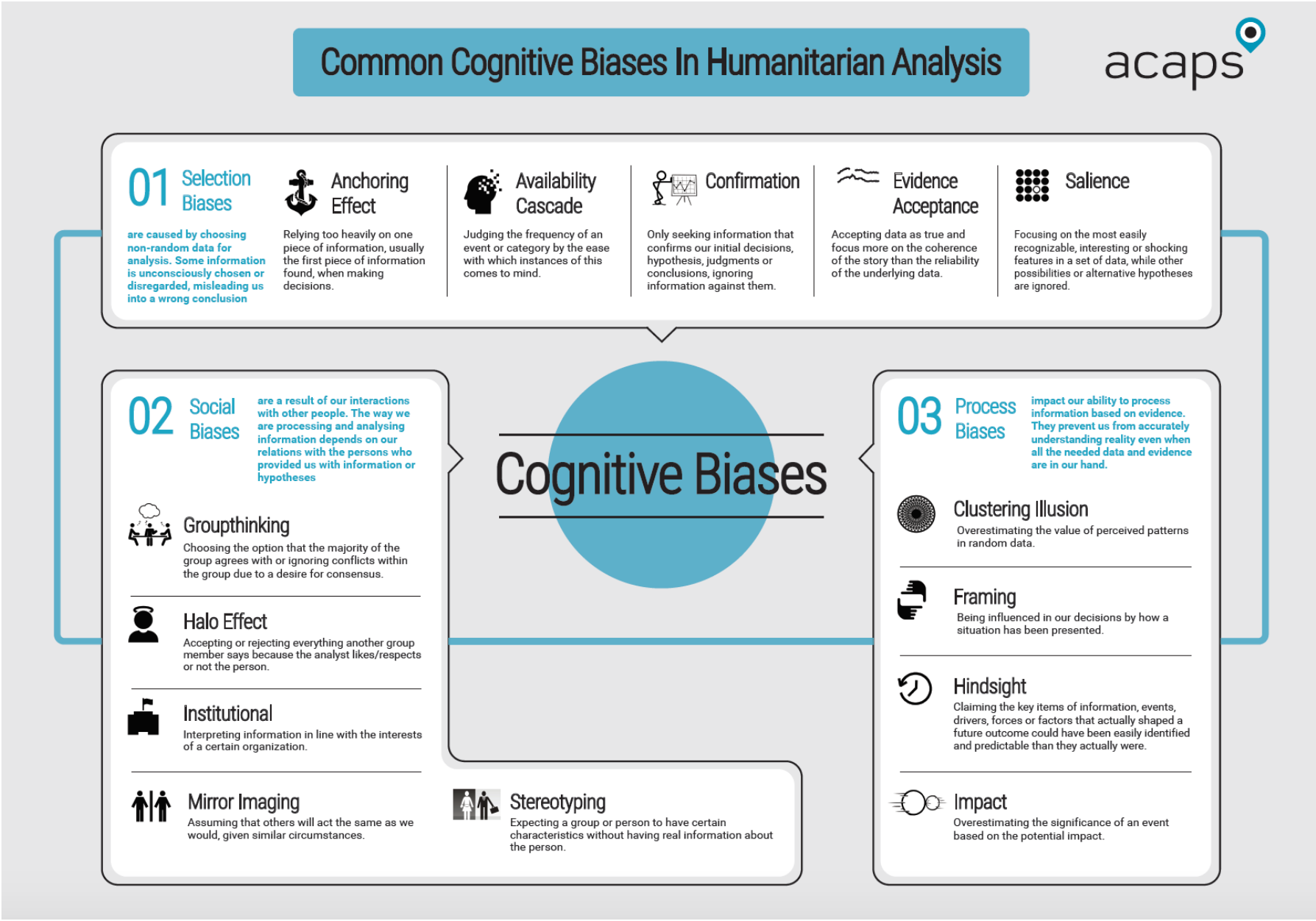
Role of the different hats:

- The person wearing the blue hat is the lead of the roleplay, he or she is the facilitator of the exercise.
- The person wearing the white hat is neutral. He or she expresses facts, only facts. His or her points are simple, short and informative.
- The person wearing the red hat is using his/her emotions, intuitions and gut feelings to approach the situation.
- The person wearing the green hat is looking for ideas outside the box, alternative options.
- The person wearing the yellow hat is looking at the different options with a positive attitude, underlying the advantages and benefits of an idea.
- The person wearing the black hat is criticising the different options, emphasising the risks and dangers. He or she is playing the devil's advocate.

Six Thinking hats, Edward de Bono

KEY BACKGROUND READINGS

- Eric Fernandez and Martin Poulter, A Visual Study Guide to Cognitive Biases, 2012
- Daniel Kahneman, Thinking Fast and Slow, 2001
- Richards J. Heuer Jr, Psychology of Intelligence Analysis, 1999
- Edward de Bono, Six Thinking Hats, 1985
- Ministry of Defence, Red Teaming Guide, 2013
- Lloyd Jones, Patterns of Error, 2005
- Harvard implicit association test, https://implicit.harvard.edu/implicit/takeatest.html


Common Cognitive Biases In Humanitarian Analysis
acaps
01 Selection Biases
are caused by choosing non-random data for analysis. Some information is unconsciously chosen or disregarded, misleading us into a wrong conclusion
Anchoring Effect
Relying too heavily on one piece of information, usually the first piece of information found, when making decisions.
Availability Cascade
Judging the frequency of an event or category by the ease with which instances of this comes to mind.
Confirmation
Only seeking information that confirms our initial decisions, hypothesis, judgments or conclusions, ignoring information against them.
Evidence Acceptance
Accepting data as true and focus more on the coherence of the story than the reliability of the underlying data.
Salience
Focusing on the most easily recognizable, interesting or shocking features in a set of data, while other possibilities or alternative hypotheses are ignored.
Cognitive Biases
02 Social Biases
are a result of our interactions with other people. The way we are processing and analysing information depends on our relations with the persons who provided us with information or hypotheses
Groupthinking
Choosing the option that the majority of the group agrees with or ignoring conflicts within the group due to a desire for consensus.
Halo Effect
Accepting or rejecting everything another group member says because the analyst likes/respects or not the person.
Institutional
Interpreting information in line with the interests of a certain organization.
Mirror Imaging
Assuming that others will act the same as we would, given similar circumstances.
Stereotyping
Expecting a group or person to have certain characteristics without having real information about the person.
03 Process Biases
impact our ability to process information based on evidence. They prevent us from accurately understanding reality even when all the needed data and evidence are in our hand.
Clustering Illusion
Overestimating the value of perceived patterns in random data.
Framing
Being influenced in our decisions by how a situation has been presented.
Hindsight
Claiming the key items of information, events, drivers, forces or factors that actually shaped a future outcome could have been easily identified and predictable than they actually were.
Impact
Overestimating the significance of an event based on the potential impact.

ANNEX – Humanitarian analysis – Biases and mitigation strategies

Bias	Definition	Classification	Mitigation strategy
Absence of evidence	Failure to consider the degree of completeness of information	Selection	• Strength of evidence • Usability of data • Reliability of sources • Measuring information gap
Anchoring	Focus on one piece of information	Selection	• Strength of evidence • Usability of data • Reliability of sources
Attribution error	Personality based explanation instead of situational	Social	• Alternative hypotheses • Devil's advocacy • Logic mapping • Key assumption check
Availability	Confusing the frequency of event with how many times people have talked about it	Selection	• Strength of evidence • Usability of data • Reliability of sources
Blind spot	Not seeing our own biases	Process	• What if analysis • 6 Red hats
Choice supporting	Seeing previous choices as good	Process	• What if analysis • 6 Red hats
Clustering illusion	Seeing patterns where there are not	Process	• What if analysis • 6 Red hats
Confirmation	Seek information to confirm our initial judgement	Selection	• Strength of evidence • Usability of data • Reliability of sources
Conservatism	Preferring prior evidence over new information	Selection	• Strength of evidence • Usability of data • Reliability of sources
Evidence acceptance	Preferring the coherence of data over the reliability of data	Selection	• Strength of evidence • Usability of data • Reliability of sources
False consensus	Overestimation of consensus within a group	Social	• Alternative hypotheses • Devil's advocacy

			• Logic mapping • Key assumption check
Framing	Being influenced by how the situation is presented	Social	• What if analysis • 6 Red hats
Groupthink	Choosing the option the majority of the group prefers	Social	• Alternative hypotheses • Devil's advocacy • Logic mapping • Key assumption check
Halo effect	Agreeing/disagreeing with someone because of her/his personality	Social	• Alternative hypotheses • Devil's advocacy • Logic mapping • Key assumption check
Hindsight	Knowing after the event that it was predictable	Process	• What if analysis • 6 Red hats
Hyperbolic discounting	Preferring immediate payoffs over later payoffs	Process	• What if analysis • 6 Red hats
Impact	Overestimating the importance of an event because of its potential impact	Process	• What if analysis • 6 Red hats
Implicit association	Unconscious evaluative judgements	Social	• Alternative hypotheses • Devil's advocacy • Logic mapping • Key assumption check
Information volume	Seeking more information when it is not necessary	Process	• Think beforehand what information do you need • What if analysis • 6 Red hats
Institutional	Organisational interest	Social	• Alternative hypotheses • Devil's advocacy • Logic mapping • Key assumption check
Irrational escalation	Justifying increased time investment based on previous time investment	Process	• What if analysis • 6 Red hats

Mirror imaging	Assuming that others will act the same as we would	Social	• Alternative hypotheses • Devil's advocacy • Logic mapping • Key assumption check
Negativity	Focusing attention on negative experience	Process	• What if analysis • 6 Red hats
Ostrich	Ignoring dangerous information	Process	• What if analysis • 6 Red hats
Overconfidence	Being too confident about our abilities	Process	• What if analysis • 6 Red hats
Planning	Overlooking the significance of uncertainty	Process	• Always assume a project will take longer than expected • What if analysis • 6 Red hats
Pro innovation	Ignoring the limitations of innovation	Selection	• Strength of evidence • Usability of data • Reliability of sources
Publication	Reporting information where there is none	Selection	• Strength of evidence • Usability of data • Reliability of sources • Measuring information gap
Recency	Weighting recent event higher than past events	Selection	• Strength of evidence • Usability of data • Reliability of sources
Risk adverse	Fearing of losing more than willing to win	Process	• What if analysis • 6 Red hats
Salience or vividness	Focus on the most easily recognisable data	Selection	• Strength of evidence • Usability of data • Reliability of sources
Satisficing	Select the finding that looks "good enough"	Selection	• Strength of evidence • Usability of data • Reliability of sources
Selective attention	Focusing attention on only one part of the problem	Process	• What if analysis • 6 Red hats
Status quo	Not being able to see past the current situation	Process	• What if analysis

Stereotyping	Expect a group to have certain qualities	Social	• 6 Red hats • Alternative hypotheses • Devil's advocacy • Logic mapping • Key assumption check
Survivorship	Focus only on positive examples	Selection	• Strength of evidence • Usability of data • Reliability of sources
Wishful thinking	Overestimating the probability of positive events	Process	• What if analysis • 6 Red hats
Zero risk	Preferring eliminate a smaller risk instead of reducing a bigger risk	Process	• What if analysis • 6 Red hats