COGNITIVE TENDENCIES and INFLUENCES IN DECISION MAKING

Human decision making is complex. It might not always seem to be because people make judgments and decisions all throughout the day, every day. Most of those are automatic or reactive, rather than reflective and that generally works out quite well for us. Consider the ease with which many people drive complicated machines every day. Through training and repetition veteran drivers have internalized and can automatically execute a series of complex analyses, inferences, and quick effective judgments that novices can find mentally all-consuming. Automatic reactions are also seen in bike riders who often pedal along paying more attention to the beauty of their surroundings than on shifting gears or maintaining their balance.

Other decisions cannot be made so easily and demand that we slow down to deliberate. Even then, we can make decisions very quickly and efficiently and at times will shortchange the amount of effort truly required to make the optimal decision. Since so many of our judgments, including many good ones, are quick and reactive, not deliberative or reflective, we can fall into overreliance on our subconscious mental processes without even realizing what we are missing. In some circumstances reactive judgments can lead to unnecessary risks and mistaken biases. Anyone reading this has surely experienced regret over a decision. Is it possible that you made a reactive judgment when you should have been deliberative? Or that you were deliberative, but still managed to mislead yourself in some way?

For any of us to maximize our personal potential for developing and applying critical thinking skills to real life decision making, we first must understand how human problem-solving and decision-making generally function. We know that critical thinking, or reflective purposeful judgment, can and ought to be applied to a very large array of vital issues and important decisions. And we know from our experience that we do not always use critical thinking when we should. The fact that we don't use critical thinking at times when we should, implies we might be well served to purposely try and recognize those times that we *ought* to be using critical thinking.

It helps to focus on the skill of self-regulation, because *monitoring* our own decision-making and *correcting* our own decision-making turn out to be essential. Taking a moment to "Stop and Think" is excellent advice for every one of us. It can also help to know a little bit about the cognitive science research on decision-making so that we can position critical thinking, and in particular the skill of self-regulation, within that context.   Our goal is to use self-reflection/regulation to become more aware of those circumstances so we can correct ourselves reflectively.

DECISION MAKING DRIVERS

Human decision-making emerges from the confluence of multiple factors – environmental, situational, experience, education, personality and much more. Our focus for the purpose of self-regulation is to bring to the fore some insight on cognitive processes, which are almost always unconscious, but very influential. Two cognitive drivers have a particularly close interplay in decision making. One is our human propensity toward self-explanation known as *argument-making*. The other driver is the influence of mental shortcuts known as *cognitive heuristics*.

Argument-making is the attempt to be logical – that is, to rely on the relevant facts and reasons as we see them when making our decisions. In general, humans value making important decisions as rationally as the circumstances, significance, and content of their judgments permit. That doesn't mean we are always successful. Yet we explain our choices and judgments to ourselves, if not to others, in terms of the relevant

reasons and facts – again as we see them. We do this because we want to – and need to - feel confident about our decisions and be able to move forward and act. Argument-making can happen before, during and sometimes not until _after_ a decision has been made.

Cognitive heuristics are quite useful, highly efficient and generally reliable mental shortcuts we rely on when reaching a decision. These mental maneuvers are as much a part of the human reasoning process as argument-making. Heuristics often enable us to make judgments and decisions more expeditiously and efficiently. Their influences, while often positive, can introduce errors and biases into our decision-making.

THE TWO-SYSTEMS APPROACH

Research on our decision-making in every-day contexts describes the interaction of two overlapping thinking systems. One is reactive, instinctive, quick and holistic (System-1). The other is reflective, deliberative, analytical, and procedural (System-2). Both valuable systems function simultaneously, often checking and balancing each other, and either one can override the other.

Reactive System-1 Thinking: System-1 thinking relies heavily on situational cues, salient memories, and heuristics to arrive quickly and confidently at judgments- particularly when situations are familiar and immediate action is required. Many freeway accidents are avoided because drivers are able to see and react to dangerous situations quickly. Good decisions emerging from System-1 often feel intuitive in a crisis because they born of expertise, training and practice. Often we decide first, quickly, reactively and then, if asked about our decision we explain how we analyzed the situation and we provide the reasons and arguments to explain those snap judgments. However, this rationalistic argument-making to explain System-1 decisions is retrospective. We look back at what we did and explain the instantaneous System-1 inferences we made at the heat of the moment.

Reflective System-2 Thinking: System-2 thinking is useful for judgments in unfamiliar situations, for processing abstract concepts, and for deliberating when there is time or necessity for comprehensive consideration. Humans often use heuristic maneuvers in System-2 thinking as well, typically integrated as components of their logical arguments. Argument-making (explaining and rationalizing our reasons) is part of the deliberation process when making System-2 decisions. When we deliberate and _reflectively interpret, analyze, and evaluate_, we have added the critical thinking element of _self-regulation_ to our System-2 thinking. In other words, Critical thinking is:
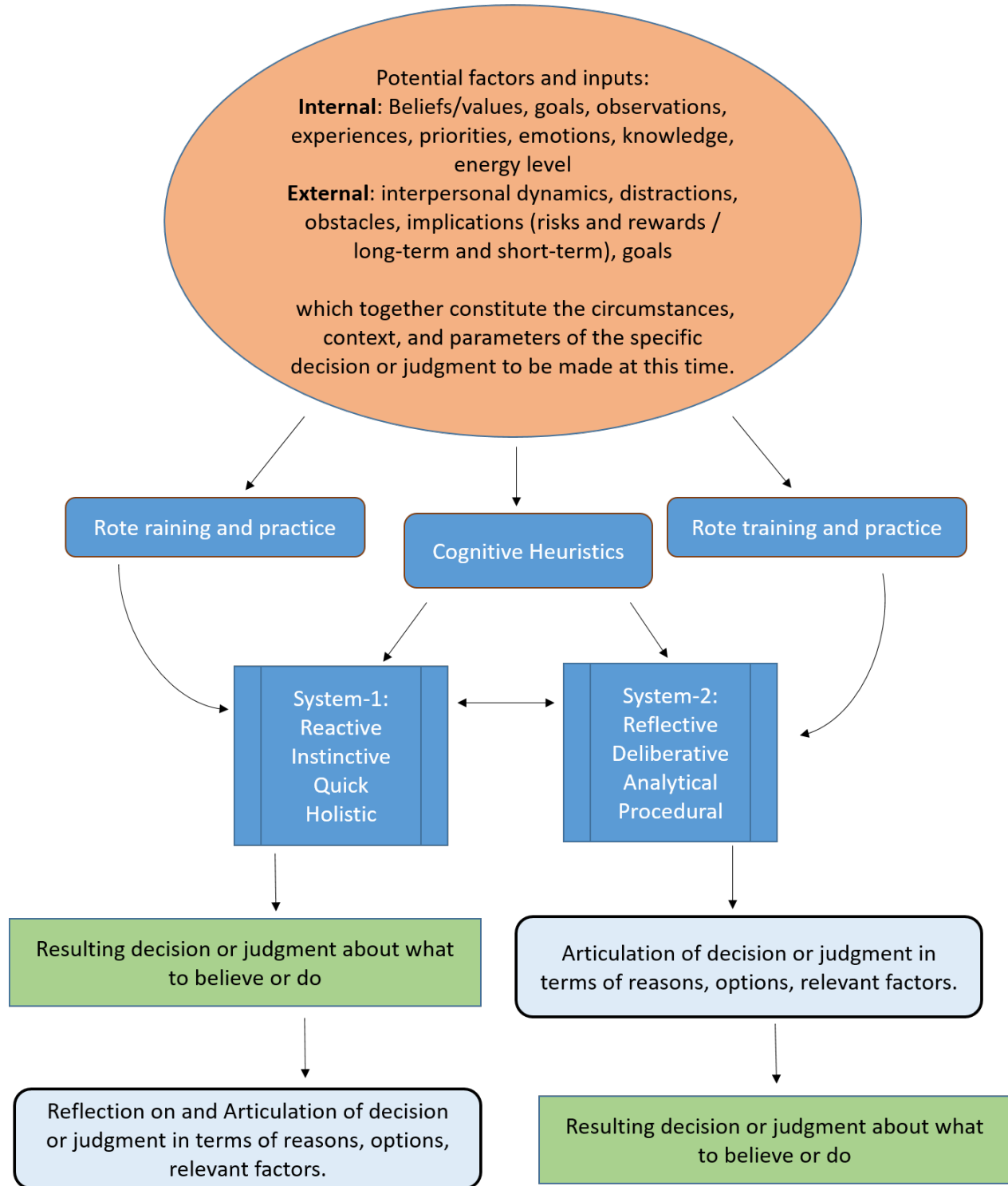
> System-2 thinking focused on resolving a problem at hand and at the same time monitoring and self-correcting one's own process of thinking about that problem.

As you think about the two-systems approach, please don't conflate that with oversimplified pop culture dichotomies such as emotion vs reason, feeling vs logic, creative vs critical, right-brained vs left brained, or from Venus vs from Mars. Human thinking is neither this superficial nor this simplistic. It is not correct to say that some people are only System-1 thinkers while others are System-2 thinkers.

Normal human beings use both systems in problem-solving and decision-making every day. The two-systems approach to understanding human decision-making accounts for the pushes and pulls that many of us often describe as part of our decision-making process. However, as System-2 is the mode of reasoned, informed,

and thoughtful consideration, it is more useful for addressing novel and complex problems in a methodical way. All levels of education which aim at improving one's critical thinking is focused directly on strengthening System-2 decision-making and problem-solving abilities.

MODEL OF TWO-SYSTEM HUMAN DECISION-MAKING

Potential factors and inputs:
Internal: Beliefs/values, goals, observations, experiences, priorities, emotions, knowledge, energy level
External: interpersonal dynamics, distractions, obstacles, implications (risks and rewards / long-term and short-term), goals

which together constitute the circumstances, context, and parameters of the specific decision or judgment to be made at this time.

Rote raining and practice

Cognitive Heuristics

Rote training and practice

System-1:
Reactive
Instinctive
Quick
Holistic

System-2:
Reflective
Deliberative
Analytical
Procedural

Resulting decision or judgment about what to believe or do

Articulation of decision or judgment in terms of reasons, options, relevant factors.

Reflection on and Articulation of decision or judgment in terms of reasons, options, relevant factors.

Resulting decision or judgment about what to believe or do

THE VALUE OF EACH SYSTEM

System-1 and System-2 are vital decision-making tools particularly when stakes are high and uncertainty is an issue. We can often rely on System-1 to get us through our day-to-day activities while engaging System-2 on some other topic of concern or concentration. How many of us can drive from home to work without remembering any of the hundreds of routine operating decisions necessary to make the trip? Have you ever been able to drink a cup of coffee and finish a bowl of breakfast cereal almost without noticing because you are so engrossed in the morning news? We have all had these experiences where we did something without really thinking about it while our mind was preoccupied with a completely different problem or issue. That is the beauty of System-1 - - so efficient! However…

We don't store those memories of our System-1 guided actions if we are simultaneously engaged in focused deliberation using System-2. When we are thinking about something like a financial problem while driving, we are distracted from the simpler System-1 thinking we may be doing, like driving home on a familiar route. Our mental focus is on System-2 work, and System -1 is operating in the background. *This is why we forget routine System-1 judgments, like why we walked into a room, whether we've already passed our freeway exit, or if we already put sugar in our coffee.* Hallelujah! You are not losing your mind when these things happen!

Although System-1 functions in the background or 'behind the scenes' more than System-2, each system is capable of overriding the other. Conflicted decision-making contexts have, through the ages, been described in different ways – "temptation" or "being pulled in two directions" as examples. We can spot oblique references to the behind-the-scenes pushes and pulls of the two systems in the way people ordinarily talk about their decision-making. We have all heard people say things like "My gut says to do X but my brain says to do Y; "We looked at all the evidence and all the options and yet we don't feel comfortable with where this is heading;" or, "Emotionally I want to do this but logically I should do that." Some theorists suggest that these common ways of talking are evidence that, in certain kinds of ambiguous or complex situations, the two systems might conflict, drawing the decision maker in different directions. In general, this is thought to be an advantage that reduces the chance of making poor, suboptimal, or even dangerous errors in judgment – a natural system of checks and balances, as it were.

Even a good thinker makes both System-1 and System-2 errors from time to time. We misinterpret things, overestimate or underestimate our chances of succeeding, rely on mistaken analogies, reject options out of hand, trust feelings and hunches, judge things credible when they are not, etc. Often mistakes like these are directly related to the influences and misapplications of **cognitive heuristics**. We all share the propensity to use these heuristics because they seem be hardwired into our species. Since the critical thinking skill of self-regulation can help us avoid some of these errors, let's examine them closer in detail so we can learn to recognize them.

HEURISTICS: THEIR BENEFITS AND RISKS

Shakespeare called humans the "paragon of animals". Aristotle said "rational animals." For Plato, "featherless bipeds," was good enough. Perhaps not the most honorific descriptions, yet humbling and useful reminders that there are times when we base our judgments on unfounded assumptions and fallacious reasoning. Misapplication of these ordinarily reliable reasoning maneuvers known as heuristics can introduce a whole new set of biases and errors. Given the natural limitations of human rationality, it

turns out that errors in heuristic thinking can result in serious problems when the risks are great and the stakes are high.

The correct application of cognitive heuristics is absolutely essential for day-to-day living. We would exhaust ourselves mentally and accomplish very little if every single judgment was a full-blown reflective decision. We get through the routine parts of our day making quick, automatic, reactive heuristic judgments. We rely on these snap judgments because

(a) most of the time they are good enough for the purpose at hand;

(b) we need to conserve our mental energy for bigger more important and less familiar problems that we come across; and

(c) often, we have no time for more reflective thought.

INDIVIDUAL COGNITIVE HEURISTICS

Let's take a look at 17 common heuristics. Their characteristics will all likely sound very familiar.

Heuristic	Cognitive Shortcut	Examples	Possible Error from Misapplication
Satisficing	Having found an option that is 'good enough', we take it. Humans typically do only what must be done to achieve our purpose.	-Rather than reading an entire restaurant menu, only read until an item sounds good. -Drinking just enough water to quench thirst (Sys-1) even though we know we should drink more for optimum health and performance (Sys-2) -Having arrested a suspect with means, motive and opportunity lessens the motivation to locate other suspects.	Underestimation of how much is required to satisfy the true, optimal objective. Advantages: Conserve time and energy. If 10% more effort required for only 1% more value, may make sense.
Truisms associated with Satisficing: "If it isn't broken, don't fix it"; "Perfect is the enemy of good"			
Temporizing	Deciding that a given option is good enough _for now._ It is generally used in tandem with Satisficing.	-Looking back we realize we should have….read the assignment… been nicer to …. Been more open-minded when…	Underestimation of the growing problems associated with failing to make a long-term adjustment at the right time.
Affect	Going with your gut. Strong Sys-1 reaction, positive or negative, (first impression) drives the decision.	-Cheese that smells that bad can't be edible! I'm NOT trying it!	First impressions/gut feelings can be misleading.

		-These shoes are too cute to pass up. I'm getting them.	Advantages: Evolutionary survival largely depended on attractiveness or other physical feature impressions; Can keep us from getting stuck when there are too many options to fully consider
Truisms associated with Affect: "It just feels right"; "it's just not speaking to me." This human tendency is a strong factor in marketing and packaging – e.g. if you are selling a house, it must have curb appeal. In another light, what if an initially frightening option is actually the best and most reasonable? For example, fear of radiation or chemotherapy when they are the best options for cancer treatment. Sys-2 can overcome a powerful Sys-1 affective response but it may take significant amount of Sys-2 reasoning. Strong critical thinking demands that we check our affective responses.			

Heuristic	Cognitive Shortcut	Examples	Possible Error from Misapplication
Simulation	Estimating the likelihood of a given outcome based on how easy it is to imagine that outcome. A mental process of imagining ourselves doing something successfully or unsuccessfully.	- I don't know what happened! Yesterday I saw myself totally convincing MSgt B to change our duty shift change process. -I can design an awesome kitchen – I have watched enough HGTV to know what I want and if I don't have enough money, I'll just do it in 'phases'.	Overestimation of one's chance of success, or failure, resulting in misplaced confidence and unwarranted optimism. Potential to decide based on wishful thinking
Simulation can be very helpful, but as a critical thinker, self-regulation will remind us to structure the details (time, money, effort) as well as the outcome, in order to actually be successful.			
Availability or Recallability	Estimating the likelihood of a future event based on the vividness or ease of recalling a similar past event	-Once you get sick from eating a certain food, you automatically turn your nose at it -Based on a recent devastating tornado in the next county, you buy and install a tornado pod next to your home -Because of a school shooting, politicians	May not turn out as it did in the past, or as you remembered it. May discount or ignore relevant factors that were not present before. May focus on unlikely threats and allocate disproportionate resources rather than

		reignite debate on limiting gun ownership	addressing more likely dangers

People tell stories all the time of things that happened to them or their friends as a way of explaining their own decisions and warning others about the future. Often these are helpful because they vicariously increase our own range of experiences. On the other hand, there is always the risk of mistaken memories, misinterpretations, or the story teller adding 'spin' based on their own values, biases, or perceptions.
** One researcher charges that missed medical diagnosis are often attributable to heuristics – with Availability being a primary one!

Heuristic	Cognitive Shortcut	Examples	Possible Error from Misapplication
Representation	Make the snap judgment that because X is like Y in some way, it is like Y all the way/in every way.	- I take home a dog from the animal shelter because it looks just like a dog we left at a shelter years ago -I will never buy a car made by Xxxxx ever since they had that issue with brakes that caused so many accidents -She got fired for posting proprietary information on social media, so if I do that, I will get fired too.	May decide based on analogy that is not warranted nor a similarity that is superficial. However, if based on criteria that is fundamental and relevant, then it is likely reliable and reasonable. (see firing example on left)
Association	Connect ideas on the basis of word association and the memories, meanings, or impressions they trigger	-In a discussion about pit bulls, someone suddenly starts talking about Michael Vick's football career (associating pitbulls with Vick) -Someone says let's go out to the picnic table, and the next person starts talking about a 4th of July memory (associated with a picnic in their mind)	This is an unmonitored, kind of stream-of-consciousness mind-blab with very little value, logically speaking. Judgments using associational thinking can be very flawed.
Stereotyping	Judging an entire group based on one experience or instance.	-Had a bad burger at a restaurant, therefore decide all the food there is bad	This is a purely Sys-1 reactive judgment that, upon Sys-2 reflection, we realize is not rational. But Sys-2

		-Meet a sharp, polite, impressive young Airman and believe that all servicemen and women are wonderful people.	considerations can disappear if Sys-1 kicks into overdrive, i.e. during a strongly emotional event.
Heuristic	**Cognitive Shortcut**	**Examples**	**Possible Error from Misapplication**
Us vs. Them Or Good Guys vs. Bad Guys	Reduce decisions to two starkly opposing options and then flatly reject the option your opposition favors	- Pro Life vs Abortion Infanticide - Open Borders vs abolish ICE - Sunni vs Shia - Israel vs Palestine	Fosters automatically confrontational, competitive, or oppositional relationships. Eliminates any middle ground Removes serious consideration of valid, relevant points A favorite tool of zealots, hate-mongers
Power Differential	Accept without question something presented by a superior authority	-Black box recordings reveal that numerous commercial airplane crashes have happened when someone (co-pilot) clearly knew there was an issue but did not seriously challenge the pilot	Could be working on the wrong question, problem, or solution. Power differential is much more pronounced in collectivist cultures and can impact inter-military working relationships
"Go along to get along." Sometimes it makes perfect sense to acquiesce to a power differential as it makes life much more harmonious. On the other hand, blind obedience or loyalty to a higher-up – especially if combined with an "Us vs. Them" ideology, can be disastrous. When evaluating reasoning provided by someone with power over us, we consider the benefits of that relationship when we consider challenging them. In reviewing options, do not forget the influence of an earlier heuristic, Satisficing.			
Anchoring with Adjustment	Having made an evaluation (i.e. of value), adjust only as much as absolutely necessary, and then only if new evidence is presented.	-Having gotten a C-grade at the beginning of the school year, a student never receives anything higher than a B- the rest of the year. -Having gotten an A at the beginning of the school year, another	Failure to reconsider thoroughly, failure to evaluate fair-mindedly, tendency to view counterevidence as an anomaly or a fluke

		student never gets lower than a B+. **-** Even when these two students switch, and submit papers in the other student's name, the original 'Anchoring' grade holds sway in the teacher's mind and influences subsequent grading	rather than genuine cause for changing an opinion, attitude, or impression

Anchoring is common in negotiations. If we set a price limit at one point, we may not be able to accept even a very good deal if it isn't what we considered 'fair' at the very beginning. Think about first impressions / reputations and how hard it is to overcome a bad one – this is because of the Anchoring heuristic. The interesting thing about anchoring is that once we have 'dropped anchor,' we won't normally entertain a new starting point even though we may have gathered information that shows us how wrong we were with our original drop point. So, although we will adjust (Anchoring with Adjustment) we will only do so as little as necessary. Have you ever seen this done in your units? Have you experienced this yourself?
** As a military person, you may often use your assignments as an Anchor when trying to remember exactly when something happened, such as when a certain song came out, or when a major geo-political event occured

Heuristic	Cognitive Shortcut	Examples	Possible Error from Misapplication
Illusion of Control	Estimate the amount of control you have over something by the amount of energy or desire you put into it – by how bad you want it	**-**This can also happen in retrospect; believing that the success of an event was disproportionally due to one's own influence or effort versus that of the entire team	Overestimation of actual power or control can lead to risky decisions Can cause judgments based on wishful thinking May fail to account for contingencies or underestimate the influences of other people and events
Optimistic Bias	Tendency to underestimate your own risks	**-**Believing you are a better driver than most **-**Believing your risk for cancer is much less than other people at your age	Like Illusion of control, can lead to risky decisions or waste of resources, energy

This has an evolutionary advantage – focusing on all the potential risks and dangers in life could be debilitating. Having an optimistic bias gives us the courage to move ahead.

Hindsight Bias	Tendency to remember our own successes or actions positively and others' failures or actions more negatively	**-**Feeling unfairly blamed when things went wrong that were out of your control **-**Leaving critical contributors out of their fair share of credit	Misjudging the actual extent of yours or others' impact on outcomes can lead to future decisions based on less than accurate information
Elimination by Aspect	Eliminate an option based on one undesirable feature, a.k.a. "One strike and you're out!"	**-**Easy to do – and very useful - when there are too many choices **-**Any flaw is a fatal flaw **-** We commonly see political 'litmus' tests where candidates are eliminated based on one campaign idea we disagree with, or not being flawless (i.e. not religious enough, or not liberal enough)	Failure to give due and full consideration to all viable options can eliminate very good alternatives Denies the reality that nothing is perfect. In situations where choices are limited, this can be a major liability when used without critical thought
Loss and Risk Aversion	Avoid risk and loss by sticking with the status quo "A bird in the hand is worth two in the bush"	This is an overwhelmingly preferred default mode for humans, especially in conditions of uncertainty	Can cause paralysis in decision making and lost opportunities Can lead to a crisis that could have been avoided
Whenever possible humans prefer an incremental approach over dramatic change. We would rather lose out on a potential gain rather than lose one bit of what we have. Decision paralysis can cause delay precisely when action should be taken even leading to a point of no return. History has shown time and time again that businesses that avoid risks often lose the ability to compete, and eventually fold. (Kodak film, anyone???)			
All or Nothing	Simplifying decisions by treating remote probabilities as if they are not even possible at all	-Knowing that there is a chance my flight will get delayed, I bank on it NOT being delayed and schedule a meeting for that afternoon -	Failure to plan for contingencies or give all possibilities due consideration
There are a lot of risky possibilities that we have to simply ignore, or we would never move, i.e. crossing the street, flying commercial air, driving on the interstate, eating in a restaurant – these can be scary – even deadly – but we do them anyway! Instead of thinking of a 12% chance of something happening, or a 73% chance, we tend to move to one extreme or the other (all or nothing) and make our decision.			

HEURISTICS IN ACTION

In everyday conversations in which we focus on our own issues, cognitive heuristics expedite our thinking by generating ideas, but not necessarily reflectively. Here is an example of a person explaining why he decided to invest in high-tech stocks in late 2007. What could go wrong?

"*I know some businesses fail, particularly those based on technological innovation. But only 3 percent of new ventures failed last year, so I decided that the risk of failure was actually pretty low* [All or Nothing] *and I decided to go for broke and invest. You know, I am really watching things closely now so that nothing happens that will threaten my investment.* [Illusion of Control] *I just don't think I can miss on this one* [Optimistic Bias]*.*"

True, it was smart to consider the percentage of businesses that failed, and to do all that one can to ensure success. And the business may not fail, but the speaker would not be likely to invest with confidence were it not for the misuse of heuristic thinking which provided hope, a bit of confidence, and a sense of being in control of the investment. The worldwide recession of 2008 demonstrated that his reasoning was built on a house of sand.

Often, cognitive heuristics work in tandem with one another. In the following example of a casual family conversation, we can see several heuristics in play:

- Husband to wife: "I'm looking forward to retiring. I've worked for 35 years in offices without windows and when I'm retired, I want to be outside. I can see myself on the 5th tee right now!"
- Wife replies: "Same as my Dad; he used to say how much he hated winter especially going to work when it was dark outside, working in a windowless office all day, and then coming home when it was dark."
- Mother (Mother-In-Law): "That senior's apartment you showed me was terrible. Only one window! I need more light. I'm never moving to an apartment! You're going to have to drag me out of my house."

In the husband's comment, heuristics influence him to link the idea of being outside with his vivid and happily remembered hobby [*Availability*]. He sees himself golfing [*Simulation*], projecting how much easier to will be to play golf when retired. (Might this have the potential to influence a retirement decision?)

 Meanwhile, his wife is still thinking about the original topic, namely retirement. However, she connects her husband's distaste for his windowless office with her father's similar distaste for the same work environment [*Representation*].

At that point, the mother-in-law introduces a new topic, her mind having jumped from 'windowless' to an association with darkness [*Association*] and from there to her vividly recalled [*Availability*] negative [*Affect*] experience of recently seeing one dark apartment. Clearly, she is overestimating the likelihood that all apartments will be dark. And, since it appears there was discussion at some point of moving her to a senior's living residence of some kind, she expresses her very strong disapproval of that idea, and not wanting to lose control of this decision, or lose her home [*Loss Aversion*] lets it be known she is not going.

SUMMING UP HEURISTICS

Heuristic thinking is the often quite useful tendency to rely on highly effective cognitive shortcuts when making judgments. We looked at 17 common heuristics noting some examples, advantages, and disadvantages along the way. In some cases, we can use heuristics to motivate ourselves and other people to take action (think '*Us vs Them*', *Loss Aversion*). Without some common heuristics, we might never be brave enough to leave our homes (think *All or Nothing*) or to try new adventures or life strategies (think *Optimistic Bias*, *Illusion of Control*). Heuristics influence both System-1 and System-2 thinking processes, and both systems have the ability to override the other.

In order to enable the overall objective of making the best decisions possible, we should attempt to avoid hasty System-1 misapplications of heuristics. By using our System-2 thinking skill of self-regulation along with a Truth-seeking habit of mind (thinking style), we can work towards that objective. So with that in mind, let's shift our focus to another unavoidable human mental technique: *dominance structuring.*

DOMINANCE STRUCTURING: A FORTRESS OF CONVICTION

Two wing CMSgts are locked into opposition about a Force Support Squadron policy of limiting certain parts of the fitness center to only the base defenders between the hours of 6pm to 10pm.

- Chief B, whose maintainers work odd hours spread between three various shifts, is adamant that this policy places unreasonable limits and hurts the readiness of the maintainers who need to be able to take advantage of any slow time they get to exercise. Four hours is a large block of time to lose access to! In addition, it is obvious to everyone that the SFS and FSS, both falling under the same group, are 'using' that relationship inappropriately.
- Chief T who represents the SFS defenders, is hard set on protecting the investment the unit has made in re-building trust, morale, and esprit-d'corps among the SFS members after a hard year with far too many setbacks. A suicide, a deployment 'gone bad' due to spousal infidelities that precipitated three Articles 15s and a PCS, and the imposition of longer duty shifts required some very innovative strategies on the part of unit leadership to bring the unit members back to a positive frame of reference. One of the most successful strategies was to reserve the functional fitness area of the fitness center and provide a creative variety of highly motivational workouts, competitions, challenges, and a rotation of local fitness professionals to keep things fresh and interesting. Along with that, there were scheduling hurdles to overcome that involved spouses, civilians and contractors to provide childcare (location and caregivers), to ensure the base protection did not suffer, and to precipitate maximum participation (voluntary).

Both CMSgts are locked in. Neither one is listening to the other. Not anymore. Every "fact" is contested, every claim is challenged, and every "priority issue" is maligned. Motives are questioned. There is no more System-2 deliberating or honest effort to find middle ground.

We see this oppositional conflict in every part of our society – our political parties, our environmental concerns, the education of our children. Unfortunately, in many - if not most - cases, the oppositional sides are not even trying to hear the other anymore.

It is very hard for human beings to reverse a decision once made. This is due to a psychological phenomenon known as **Dominance Structuring,** which is the tendency for humans to lock in to a decision – AND once we do commit to a decision option, we continue to gain confidence that our choice was a good one. This is an extremely valuable human characteristic because with confidence in our choice, we are able to take action, persevere during difficulties, and resolutely sustain our commitments. However, there is also a risk of locking into an unwise decision and then, with any energy, time, reputation, or other resources invested at all, a hard resistance to change our mind.

The critical thinking skill of self-regulation and the habit of truth-seeking are the best hopes for identifying those occasions and guarding against sticking with a bad decision. Because humans almost never change our minds once a decision is made, the best opportunity to exercise our critical thinking is _while we are still considering options._ With dominance structuring, what we more often actually do, is to apply our strongest reasoning effort to _explain_ our decisions, not to _make_ them. Consider this example:

For many years, a teacher gave his students critical thinking assignments expressed like this: "Gun control is a controversial issue in our nation. Take a position for or against legislation banning all sales of handguns. Research the issue and defend your position with the best arguments possible. In doing so, please consider the arguments for the other side and explain why they are mistaken."

As it turned out, that was a terrible way to give a critical thinking assignment. Why? Because he had asked his students to take a point of view _first_ which generally meant their System-1 played a big role in determining which side they took. Whether 'pro-gun' or 'anti –gun', some would knock one side or the other out of contention using the one-rule decision-making heuristic of _Elimination by Aspect_. "If she'd had a gun, she'd be alive today." "You don't need an automatic pistol to hunt deer." After they had taken a side in their minds, they would energetically search for reasons or information that supported their point of view, but not for reasons that opposed it. Their research efforts were neither fair-minded nor truth-seeking. They would write out a well-organized, logical paper laying out all their good supporting reasons, but struggled to say anything good at all about the opposing view. _The students could explain and defend their decisions, but had not reflected on whether or not they were the best decisions. Critical thinking is not the holding of a belief: it is the process of reflective judgment by which we come to the belief._

The teacher realized that, rather than give an assignment that stoked fair consideration to both sides of an issue, he had invited students to build a **dominance structure** around one option. His new approach to this assignment goes like this: "The right to bear arms has become a major issue in our country. Come to class on Monday prepared to discuss this issue. I may ask you to take either the pro side or the con side with regard to a possible piece of legislation relating to gun ownership. Open your mind to either possibility and be ready to defend either side effectively. Be ready for a third possibility as well, which is to listen and adjudicate the discussion by objectively evaluating your classmates as they present."

Anyone can take and defend a position, but - _If critical thinking is a process, it makes more sense to find a way for people to demonstrate that they are able to interpret, analyze, infer, explain, evaluate, and self-regulate._ Only after the full, informed, fair-minded discussion would it make sense to ask a student to take a reasoned position on the matter.

> "A fanatic is one who can't change his mind and won't change the subject."   - Winston Churchill

The result of dominance structuring is confidence, whether reasonable or unreasonable, in the option we have decided upon, and motivation to take action and sustain our efforts. Obviously the more unreasonable, irrational or unrealistic we have been in our dominance structuring, the greater risk of a poor decision. On the other hand, if we have made the effort to be reasonable, truth-seeking, open-minded, and informed, then there is a greater chance it will be a good one. Either way, the result of dominance structuring is that we surround our choice with more rationale for its enduring superiority to other choices.

In other words, we continue to convince ourselves of the rightness of a decision long after we've made it. Does that mean we are fooling ourselves, or being unfair? No, rather we just keep up our confidence.

Below is a visual of how this process works. It is automatic and largely sub-conscious. As you look at the visual below, think about an important decision you have made or need to make where there are conditions of uncertainty such as hiring a babysitter, choosing an Airman for a particular task, buying a car, taking a new job… and see if you can identify how this process plays (or played) out in your decision making on that issue.

Dominance Structuring
How it Happens (the mental process)

Phase One Pre-Edit: *Narrow down choices, perhaps by use of heuristics such as Elimination by Aspect, Satisficing, or Availability*

Phase Two Identify One Promising Option: *Focus in on an alternative that is most attractive, maybe based on one critical attribute such as being the least risky or closest to your values or least expensive.*

Phase Three Test the Promising Option: *Compare to other options and rationalize - NOT to prove this option is best but to ensure it has no fatal flaws*

Phase Four Fortify the 'To-Be-Chosen' Option: *Fortify rationale by de-emphasizing or bolstering certain attributes, grouping attributes together to offset a weakness in one of them, or trading off priorities - in order to ensure the dominance of your initial Promising Option*

Understanding the power of dominance structuring explains why other options that we didn't choose become even less and less compelling as time goes on. When this happens it is common to hear things like "When we really looked at it, we didn't have any other choice," or "It was a no-brainer!" At this point we

often wonder why we even considered the other options in the first place. _However, combining our propensity for dominance structuring with heuristics_ such as elimination by aspect, satisficing, or anchoring with adjustments, _risks minimizing - if not eliminating - due consideration to all alternatives_. It can also blind us to the chance that our decision may be seriously flawed.

Because dominance structuring is a System-1 activity, we don't ask ourselves if we want to do it – _we just do it_. It happens very quickly and seamlessly in our thinking, and largely sub-consciously. However, forewarned is forearmed, and there are strategies to mitigate the risks this may pose when decision making. These strategies rely heavily on self-regulation and other critical thinking aspects. What is important is to use our self-regulation (monitoring, correcting, reflecting) and make mid-course corrections if we begin to lock in prematurely, or are tempted to take shortcuts and / or to achieve closure.

Another look at the process using some of those strategies might look like this:

Dominance Structuring

How it Happens (the mental process)

Phase One Pre-Edit: _Narrow down choices, perhaps by use of heuristics such as Elimination by Aspect, Satisficing, or Availability_

Phase Two Identify One Promising Option: _Focus in on an alternative that is most attractive, maybe based on one critical attribute such as being the least risky or closest to your values or least expensive._

Phase Three Test the Promising Option: _Compare to other options and rationalize - NOT to prove this option is best but to ensure it has no fatal flaws_

Phase Four Fortify the 'To-Be-Chosen' Option: _Fortify rationale by de-emphasizing or bolstering certain attributes, grouping attributes together to offset a weakness in one of them, or trading off priorities - in order to ensure the dominance of your initial Promising Option_

Strategies to Mitigate (self-regulate)

Phase One Pre-Edit: _Be clear about the issue, about the critical /essential attributes, and why an option is in or out_

Phase Two Identify One Promising Option: _Requires discipline. Consider options impartially and devote equal or reasonable energy to alternatives_

Phase Three Test the Promising Option: _Stick to your previously identified essential criteria. Don't conflate essential with desirable or shift priority to one criteria. Be diligent in Truth-seeking to overcome pre-conceptions, beliefs or personal connections_

Phase Four Fortify the 'To-Be-Chosen Option: _Be honest with yourself. If deciding to de-emphasize something, make sure it is a good reason. If bolstering or trading off, don't exaggerate virtues or vices._

The elements of self-regulation, self monitoring, and self correction are needed at every stage of decision making when you are making an effort towards a decision that has got to be right. This might be described as cognitive de-biasing.

> "Ongoing cognitive de-biasing (e.g. monitoring one's own thinking for errors and self-correcting) is arguably the most important feature of the strong critical thinker and the well-calibrated mind."
>
> - Pat Croskerry, Geeta Singhai, and Silvia Mamede

OVERCOMING THE PITFALLS OF COGNITIVE TENDENCIES AND INFLUENCES

Experience has shown that awareness of the effects of biases has done little to improve the quality of decisions at the individual or organizational level. A glaring feature of cognitive failures is that we have no way of knowing they are happening. How can you catch yourself in the act of making an intuitive error when it is in fact, unconsciously stemming from System One intuition and sense-making? Knowing that you have biases and can be susceptible to cognitive heuristics is not usually enough to overcome them. (Kahneman,et al.) This is where having a checklist, a process, a team, or some combination of all three can help improve judgment.

Most organizational decisions are influenced by many people and while we may not be able to spot our own biases, we can spot them in others, and they can spot ours. This can involve:

- Asking hard questions, challenging assumptions, and forcing alternative options to be more seriously researched, or favored options to be more seriously vetted.
- Following checklists – even those that consist of straightforward, commonly known, and routine requirements – have proven to vastly improve outcomes in medical and business environments.
- Building teams with diverse experience levels, priorities, or expertise, along with nurturing an organizational culture that values dissent, helps to implement quality control over decisions.

For much more detail on these strategies, the questions to ask, and the pitfalls to watch for, read the article titled "*Before You Make That Big Decision*" listed in the references below.

SUMMING IT ALL UP

Decision making is something we all do every day, sometimes quickly (snap judgments) and sometimes carefully and reflectively. We like to be able to explain and justify our decisions, to feel confident in our decisions, and often to simply be done with the decision. Cognitive heuristics help us along when there are too many choices, too much uncertainty, or too little time but can be both a blessing and a curse depending on the outcomes. The tendency for dominance structuring also offers benefits and pitfalls by providing us the confidence to move from decision to action, but can stymie productive compromises.

Good decision making is essential to good leadership and both of these depend highly on the knowledge you hold as well as the quality of thinking that you bring to the table.   Knowledge about the functions of System One and System Two thinking and the psychological phenomena of heuristics and dominance structuring help you to guard against their pitfalls and to understand and identify when others may over rely on unconscious, unreflective tendencies and biases. Incorporating a strategic decision making *process* for the really important judgments in an organization vastly improves the odds of recognizing and overcoming the influence of individual biases and erroneous assumptions. Combining all of these with critical thinking strategies such as reflective self-regulation, truth seeking, fairness and self-discipline will go a long way towards making you the go-to leader, decision-maker, and influencer you want to be.

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