Obstacles of critical thinking and how to deal with it

معوقات التفكير النقدي وكيفية مواجهتها

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Abstract:

This paper presents the essence of critical thinking, and how to challenge its obstacles as egocentricity, socio centric, pathological tendencies and intellectual inflexibility, and ask how we must use our critical thinking skills by question everything and comprehend our personal biases.

Keywords: Egocentricity, Social centrality, Pathological tendencies, Intellectual inflexibility, Lack of open-mindedness, Question everything, Empathy.

ملخَّص:

يعرض هذا البحث للمعوقات التي تحول دون ممارسة التفكير النقدي والتي يأتي في مقدمتها التمركز حول الذات (الأنا)، والاتجاهات المرضية والتصلب العقلي والافتقار إلى الانفتاح الذهني؛ ثم يطرح البحث السؤال عن كيف نستخدم مهارات التفكير النقدي استخداما فعالا والوسائل التي يمكننا بها الارتقاء بهذه المهارات، والتي يأتي في مقدمتها تجنب ما لدينا من تحيزات شخصية، وكيف أن علينا أن نضع في اعتبارنا نتائج أفعالنا، وأن نضع كل الأشياء موضع البحث والتساؤل.

الكلمات المفتاحية: التمركز حول الأنا، الاتجاهات المرضية، المركزية الاجتماعية، التصلب الذهني وعدم المرونة الذهنية، مهارات التفكير النقدي وتنميتها.

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Egocentricity as an Obstacle to Thinking Critically

Scholars acknowledged egocentricity as a significant obstacle to thinking critically. It is defined as a "tendency to view everything in relation to oneself, to confuse immediate perception (how things seem) with reality: the tendency to be self-centered, or to consider only oneself and one's own interests; selfishness. This definition illuminates the problem that interpreting the world without fairly taking into consideration other points of view or alternative interpretations of "reality" is fundamentally irrational. Egocentricity, and in turn ethnocentricity, is the tendency to define truth according to one's personal opinion rather than reasoned judgment.

Critical thinking theorist Arthur Costa summarizes the problem of egocentricity as follows: "People become convinced that their own perspectives on the problem are essentially right and that others have it wrong. But thinking in this way prevents us from gaining a wider perspective – one that would enable all of us to determine what we are missing. This egocentric view hinders serious reflection and honest inquiry". The negative consequences of unbridled egocentricity are numerous, from conflicts on the playground to the systematic exploitation of the environment at the expense of people and other species. It is important to note that scholars agree that egocentricity largely operates at an unconscious level even though there are those who intentionally seek to manipulate and harm to advance their selfish desires.

For example, critical thinking practitioner Gerald Nosich identifies egocentrism as a "deeper, more pervasive impediment to critical thinking". In his book, Learning to Think Things Through: A Guide to Critical Thinking Across the Curriculum, he argues that "Each of us is at the center of our own experience." Our experiences can benefit us, but they can also hinder our intellectual development. In the later case, "people often have a way of thinking that always puts themselves first". He writes that egocentricity mostly "operates far beneath the surface" so people do not regularly notice when their views and agendas are unjustly placed before others. Furthermore, the ego is self-deceptive, where "It is easy to delude myself into believing that I am working in the best interests of humanity as a whole when in fact I am working for my own interests and even against the interests of humanity;" it can prevent one from differentiating between accurate and inaccurate claims; it can prevent one from acknowledging information and points of

view that "are opposed to" one's own (p. 24). One's egocentric tendencies are pervasive because it manifests itself in every facet of one's thinking and life to some degree. At the heart of it, however, is the psychological tendency to protect or pursue one's selfish interests.

John Dewey elaborates on the pervasive and manipulative qualities of one's egocentric nature in his discussion of a type of self-interest that is selfish, undisciplined and unexamined. Dewey's discussion presents one's selfishness as taking an active role to "protect" one's world view and belief systems by classifying positions and views that are opposite to one's own as hostile and dangerous. As a result, one unjustifiably attacks, often subconsciously, the opposition. The selfish mind is one that often seeks "revenge, as it were, upon the alien hostile environment by cultivating contempt for it, by giving it a bad name". The selfish mind seeks "refuge and consolation within their own states of mind, their own imaginings and wishes, which they complement by calling both more real and more ideal than the despised outer world". Since one's ego regularly works to protect one's interests, it often works to deceive one's fair assessment of the world by distorting reality.

Egocentricity is a barrier to thinking well because it prevents one from cultivating important intellectual dispositions crucial to thinking critically like fair-mindedness, open-mindedness, empathy, integrity, intellectual flexibility and, even, the need to persevere through difficult problems. Writes, "One of the most valuable things to be gained from critical thinking is an ability to see the egocentricity of our own thinking". On this point, scholars throughout the discourse on critical thinking agree.

Pathological Tendencies of the Human Mind

We now can put explicitly into words an array of interrelated natural dispositions of the human mind that follow as consequences of the pathology of the natural mind. To significantly develop our thinking, we must overtly identify these tendencies as they operate in our lives, and we must correct them through critical-thinking processes. As you read them, ask yourself whether you recognize these as processes that take place regularly in your own mind (if you conclude, "not me!" think again):

- **Egocentric memory**: the natural tendency to "forget" evidence and information that do not support our thinking and to "remember" evidence and information that do.
- **Egocentric myopia**: the natural tendency to think in an absolutist way

within an overly narrow point of view.

- **Egocentric righteousness**: the natural tendency to feel superior in the light of our confidence that we possess the truth when we do not.
- **Egocentric hypocrisy**: the natural tendency to ignore flagrant inconsistencies—for example, between what we profess to believe and the actual beliefs our behavior implies, or between the standards to which we hold ourselves and those to which we expect others to adhere.
- **Egocentric oversimplification**: the natural tendency to ignore real and important complexities in the world in favor of simplistic notions when consideration of those complexities would require us to modify our beliefs or values.
- **Egocentric blindness**: the natural tendency not to notice facts and evidence that contradict our favored beliefs or values.
- **Egocentric immediacy**: the natural tendency to overgeneralize immediate feelings and experiences, so that when one event in our life is highly favorable or unfavorable, all of life seems favorable or unfavorable to us.
- **Egocentric absurdity**: the natural tendency to fail to notice thinking that has "absurd" consequences.

Challenging the Pathological Tendencies of the Mind

It is not enough to recognize abstractly that the human mind has a predictable pathology. As aspiring critical thinkers, we must take concrete steps to correct it. This requires us to create the habit of identifying these tendencies in action. This is a long-term project that is never complete. To some extent, it is analogous to stripping off onion skins. After we remove one, we find another beneath it. To some extent, we have to strip off the outer layer to be able to recognize the one underneath. Each of the following admonitions, therefore, should not be taken as simple suggestions that any person could immediately, and effectively, put into action, but rather as strategic formulations of long-range goals. We all can perform these corrections, but only over time and only with considerable practice:

Correcting Egocentric Memory

We can correct our natural tendency to "forget" evidence and information that do not support our thinking and to "remember" evidence and information that do, by overtly seeking evidence and information that do not support our thinking and directing explicit attention to them. If you try and

cannot find such evidence, you should probably assume you have not conducted your search properly.

Correcting Egocentric Myopia

We can correct our natural tendency to think in an absolutistic way within an overly narrow point of view by routinely thinking within points of view that conflict with our own. For example, if we are liberal, we can take the time to read books by insightful conservatives. If we are conservative, we can take the time to read books by insightful liberals. If we are North Americans, we can study a contrasting South American point of view or a European or Far-Eastern or Middle- Eastern or African point of view. If you don't discover significant personal prejudices through this process, you

should question whether you are acting in good faith in trying to identify your prejudices.

Correcting Egocentric Righteousness

We can correct our natural tendency to feel superior in light of our confidence that we possess the truth by regularly reminding ourselves how little we actually know. In this case, we can explicitly state the unanswered questions that surround whatever knowledge we may have. If you don't discover that there is much more that you do not know than you do know, you should question the manner in which you pursued the questions to which you do not have answers.

Correcting Egocentric Hypocrisy

We can correct our natural tendency to ignore flagrant inconsistencies between what we profess to believe and the actual beliefs our behavior implies, and inconsistencies between the standards to which we hold ourselves and those to which we expect others to adhere. We can do this by regularly comparing the criteria and standards by which we are judging others with those by which we are judging ourselves. If you don't find many flagrant inconsistencies in your own thinking and behavior, you should doubt whether you have dug deeply enough.

Correcting Egocentric Oversimplification

We can correct our natural tendency to ignore real and important complexities in the world by regularly focusing on those complexities, formulating them explicitly in words, and targeting them. If you don't discover over time that you have oversimplified many important issues, you should question whether you have really confronted the complexities inherent

in the issues.

Correcting Egocentric Blindness

We can correct our natural tendency to ignore facts or evidence that contradicts our favored beliefs or values by explicitly seeking out those facts and evidence. If you don't find yourself experiencing significant discomfort as you pursue these facts, you should question whether you are taking them seriously. If you discover that your traditional beliefs were all correct from the beginning, you probably moved to a new and more sophisticated level of self-deception.

Correcting Egocentric Immediacy

We can correct our natural tendency to overgeneralize immediate feelings and experiences by getting into the habit of putting positive and negative events into a much larger perspective. You can temper the negative events by reminding yourself of how much you have that many others lack. You can temper the positive events by reminding yourself of how much is yet to be done, of how many problems remain. You know you are keeping an even keel if you find that you have the energy to act effectively in either negative or positive circumstances. You know that you are

falling victim to your emotions if and when you are immobilized by them.

Correcting Egocentric Absurdity

We can correct our natural tendency to ignore thinking that has absurd consequences by making the consequences of our thinking explicit and assessing them for their realism. This requires that we frequently trace the implications of our beliefs and their consequences in our behavior. For example, we should frequently ask ourselves: "If I really believed this, how would I act? Do I really act that way?"

By the way, personal ethics is a fruitful area for disclosing egocentric absurdity. We frequently act in ways that are "absurd"—given what we insist we believe in. If, after what you consider to be a serious search, you find no egocentric absurdity in your life, think again. You are probably just developing your ability to deceive yourself.

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Socio-centricity as an Obstacle to Thinking Critically

There are multiple dimensions to the concept and manifestations of socio-centricity and the concept is present within various forms throughout the discourse. Generally defined, socio-centricity is "The assumption that one's own social group is inherently and self-evidently superior to all others". Like the barrier of egocentricity, socio-centric thinking is largely unconscious; a result of social conditioning whereby one is not encouraged to question social and cultural assumptions

In the intellectual tradition of Bacon, Paul and Elder (2006a) identify socio-centricity as an obstacle to thinking critically, and articulate, in four precise statements, how one's unconscious mind would articulate the concept: "It's true if we believe it. It's true because we have always believed it. It's true because we want to believe it. It's true if it is in our self-interest to believe it" . These statements point to the subjectively relative nature of socio-centric thought where "truth" is defined by a group, large and small, rather than by fair-minded critical thought; thought that is verifiable, transparent, invites critique, and is open to alternative points of view and questions.

One's beliefs are largely a consequence of one's culture. Although all beliefs and traditions do not lead to negative consequences, those that do or those that have a greater potential to cause harm must be critically examined. Otherwise, poor thinking, unethical thinking is ignorantly propagated and prolonged. There is another dimension of socio-centricity that, like its egocentric counterpart, is in some way consciously deceptive.

"Other beliefs are held through self-interest…We adopt and cling to some beliefs because –or partly because – it 'pays' us to do so;" where the term self-interest can be extended to "cover also his interest in social position" (If socio-centric thinking is an innate obstacle to thinking critically, then can it be effectively managed? Although it is widely accepted that socio-centricity is a significant barrier to the development of one's critical capacities, it is also widely agreed that the development of one's ability to think critically can manage the negative influences of obstacles like socio-centricity. Pedagogically speaking, one of the most important and lasting goals of education is to produce better, more ethical thinkers. The discourse on critical thinking exists, in part, because there is a rational ideal that is viewed as attainable, but it exists because obstacles to thinking well are

forever present. <u>The concept of socio-centricity has been articulated in many different ways, but is visible and consistent throughout the intellectual tradition of critical thinking.</u> Its significance to a robust conceptualization of critical thinking is paramount, and its explication is necessary if people are to work toward improving the quality of their thought.

Sociocentric Thinking as Pathology

Sociocentric thinking, as we intend this expression, is egocentric thinking raised to the level of the group. It is as destructive as egocentric thinking, if not more so, as it carries with it the sanction of a social group. In both cases, we find a native and uncritical dogmatism implicit in its principles. And therein lies its pathology. Like egocentric thinking, it is absurd at the level of conscious expression. If sociocentric thinking is made explicit in the mind of the thinker, its unreasonableness will be obvious.

Note the parallels in Table 11.1 for egocentric and sociocentric patterns of thought.

Table: Egocentric and Sociocentric Patterns of Thought

Egocentric Standard	Related Sociocentric Standard
"It's true because I believe it."	"It's true because we believe it."
"It's true because I want to believe it."	"It's true because we want to believe it."
"It's true because it's in my vested interest to believe it."	It's true because it's in our vested interest to believe it."
"It's true because I have always believed it."	"It's true because we have always believed it."

Just as individuals deceive themselves through egocentric thinking, groups deceive themselves through sociocentric thinking. Just as egocentric thinking functions to serve one's selfish interest, sociocentric thinking functions to serve the selfish interests of the group. Just as egocentric thinking operates to validate the uncritical thinking of the individual, sociocentric thinking operates to validate the uncritical thinking of the group.

Intellectual Inflexibility and Lack of Open-mindedness as Obstacles to Thinking Critically

A substantive conception of critical thinking is found in its emphasis and adherence to base-line "fundamental and powerful concepts," to use Nosich's phrase. Fundamental in that these concepts "form the foundation of our understanding" of what it means to think critically within and across disciplines, and powerful because they are "useful in understanding a wide range of questions and problems, issues and situations". The concepts of intellectual flexibility and open-mindedness are both fundamental and powerful to thinking critically; they are seminal concepts in the discourse on critical thinking because they are necessary conditions for thinking at the highest levels. Conversely, the lack of open-mindedness and intellectual flexibility are considered significant barriers to the development of critical thinking within any context.

Intellectual flexibility and open-mindedness are two such concepts. "flexibility in considering alternatives and opinions" and "open-mindedness regarding divergent world-views" are necessary conditions for thinking critically

When substantively conceived, meaning outside of the narrow interpretation of reasoning and logic as characteristic of the field of philosophy, confidence in reason implies an attitude whereby one believes that problems have a structure that can be unpacked and solved with organization, patience and perseverance. Paul describes that a substantively generalized conception of confidence in reason is characterized by a process that encourages "people to come to their own conclusions" through the development of their rational capacities. Reason, thus interpreted, is broadly defined as a process whereby one systematically attempts to figure something out. Those who develop their rational capacities habitually form justifiable viewpoints, "draw reasonable conclusions, think coherently and logically, persuade each other by reason, and become reasonable, despite the deep-seated obstacles in the native character of the human mind and in society." confidence in reason helps one become more aware of the complexities of human experience and belief; that such complexity can only be approached when one sets aside his/her biases and believes that "one's own higher interests and those of humankind at large will be best served by giving the freest play to reason. Here, a direct link between confidence in reason, intellectual flexibility and open-mindedness can be seen.

The "freest play to reason" is characterized by one's ability to fairly and empathetically think through divergent points of view, look for alternatives, assess the quality of reasoning using consistent standards, apply concepts and skills to different situations and problems where appropriate, and think through the implications of one's reasoning. In sum, intellectual flexibility and open-mindedness are disciplined reasoning processes and are necessary for fairly thinking through complex problems and issues. Confidence in reason gives depth to the concepts of intellectual flexibility and open-mindedness because it provides purpose. One seeks open-mindedness to better understand alternative points of view relevant to a question at issue; likewise, one seeks to be intellectually flexible so as not to blind oneself to alternative ways of approaching and thinking through a problem. This interpretation is highly visible throughout the discourse especially as they relate to teaching and learning.

Good decision makers always allow for the possibility of changing their minds when new information comes along that significantly shifts the balance of pros and cons" Encouraging and facilitating the development of critical thinking dispositions, like open-mindedness and intellectual flexibility, are not only ideals, but are highly practical and attainable goals.

In this vein, Delores Gallo argues that when substantively conceived critical thinking instruction "discourages belief rigidity and the salience of the perspective of the self and encourages cognitive and personal flexibility. It practices persistent, probing, engaged examination of an issue in alternation with flexible relinquishment and reflective distance". The reflective distance can be characterized by one's attempt to approach a problem objectively and open to alternatives all the while aware of the human tendency to maintain one's biased beliefs and preconceived notions. The concept of intellectual breadth, or the willingness to think through various points of view and interpretations to a problem, provides further clarification as to the nature of flexible thinking and open-mindedness the "disposition to think broadly and adventurously" is vitally important for the development of good thinking. Such an emphasis recognizes that much of human life is very complex, and only to the extent that one is able to exercise intellectual flexibility and open-mindedness is one be able to effectively and fairly think through the complexities of any given problem; to see the problem for what it is and explore various solutions. The development of one's critical capacities cannot be left to chance, which is one of the key reasons critical thinking is at the heart of a substantive education, but all too often such goals are not met.

Nosich characterizes the problem as "Developmental Patterns of Thinking". He sees the inflexible thought and close-mindedness as part of a larger network of barriers to thinking well which manifest themselves, for example, in the inability to break long standing thought patterns. "When we feel threatened, we can easily revert back to a child's way of thinking. Problems that can be solved may seem overwhelming". Stagnant thought patterns can manifest themselves in numerous ways. For example, one may not be able to see alternative ways of approaching a problem; one may not be able to generate questions necessary to unpack a problem; one may not be able to differentiate between how concepts are used, and one may not be able to see the extent to which one's group defines the way s/he interprets the world and the values and belief one holds. This last manifestation of inflexible thought is often referred to as socio-centricity.

David Perkins discusses four interconnected social barriers to critical thinking: doctrine, authoritarianism, prejudice and subjective relativism. "Doctrine, authoritarianism, and prejudice all name social forces that narrow people's thinking". Furthermore, when people discover that opinions widely vary and when they confuse opinion with formulating reasoned judgments, then "they often adopt a relativist stance. Anything goes. Truth is what you believe". From Perkins statement a clear connection between the barriers is observed.

For example, the lack of intellectual flexibility is closely linked to the concepts of egocentricity and socio-centricity as barriers to good thinking. These concepts are interconnected where, to some degree, the existence of one necessitates the existence of the others. Costa writes, "Students who lack flexibility as a habit of mind perceive situations from a very ego-centered point of view. They regard their approach to solving a problem as the only acceptable one". Likewise, Paul and Elder argue that one's innate tendency to think egocentrically and socio-centrically regularly, and subversively, challenge the development of important intellectual dispositions like open-mindedness and flexibility. This can be seen through a brief conceptual analysis where the uncritical implementation of one intellectual virtue negatively affects the actualization of others all of which are closely linked to maintaining the dominance of one's biased beliefs over one's critical capacities.

The lack of intellectual flexibility and open-mindedness are closely linked with other unfavorable or pathological dispositions, such as the lack of empathy (selfishness), the lack of humility (intellectual arrogance), the

lack of confidence in the reasoning process, and the lack of fair-minded thinking (close-mindedness). When one cannot fairly and accurately place himself within another person's point of view, then he lacks the ability to think empathetically, which is necessary for thinking ethically and expanding his general world view. When one is not able to see alternatives, then one most likely suffers from a lack of intellectual humility and confidence in reason. Inflexible thought and close-mindedness are fundamental obstacles to thinking critically because of the conceptual dispositions with which they are intimately linked. Although each of these barriers acts largely on a subconscious level, it is possible to bring them to the forefront of one's mind as intellectual tools that can be used to monitor the quality of one's thinking within context.

The spirit of critical thinking is dedicated to confronting the obstacles to thinking critically by fostering important intellectual dispositions that foster reasoned judgments. These concepts are fundamental to the discourse on critical thinking.

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How to use your critical thinking skills?

1) Don't be absolute, yet don't be timid in your criticism: try to avoid absolutes like "never", and use them only when you're completely sure. However, at the same time, be assertive in your criticism. Think how much less motivation this saying would be: "Slow and sleady, in certain cases, wins the race".

2) Be diplomatic, Your aim is not the person himself, but the proposal he puts forward.

3) Ask for other people's opinions. They most likely will offer a new perspective which could change your approach. Consider people both from different age groups and different occupations.

4) Practice critiquing, as you'll get better at it. Take notice if others critique your critique.

5) Read other people's critiques in newspapers and books, and learn from their mistakes and strengths to improve your own style.

6) Distinguish between inductive and deductive reasoning, that is, to know when a discussion is conducted from the particular to the general, or from the general to the particular.

7) Perform a hypothetical-deductive reasoning. That is, given a particular situation, apply the relevant knowledge of the principles and constraints, and display, in the abstract, the plausible consequences that might result from the different variations that you can imagine imposed on the system.

8) Use libraries and the Internet, to find out information on the topic you're critiquing. An uninformed critique is sometimes worse than one merely executed badly.

9) You can critique something much, much better if it's within your field of expertise. For example, who better than a painter to critique a painting? Or who better than a writer to properly analyze another writer's works?

How to Improve Your Critical Thinking Skills

Our lives are nothing but the products of our thoughts and decisions. Therefore, if we increase the quality of what we think, our lives can change for the better. One way to do this is to increase our critical thinking skills. Critical thinking is the process of reasoning so as to analyze an idea. It involves digging deeper into it for the purpose of achieving our full potential in life, in other words, it is the process of thinking better.

If you are disciplined, motivated and ready to grow, here is how to improve your critical thinking skills.

Do not assume, investigate

In our day to day lives, we make many assumptions about almost everything. Our brains are designed so as to make these assumptions for the purpose of processing information. Making assumptions is a critical part of the framework of our brains. However, these assumptions could be wrong or inaccurate. Critical thinking requires that we don't make any assumptions. It also demands that any assumptions are deconstructed and examined for relevance and truthfulness. Assumptions can be analyzed by asking 'why?'. Doing this increases our ability to think critically and come up with conclusions of a higher quality.

Investigate before you accept any information as true

During our daily activities, we are bombarded with information. It comes from both trustworthy and untrustworthy sources. Therefore, we simply place the information that we get into one of this previous pair of categories. Doing this saves us the time and energy that would be needed to examine the information more closely. Unfortunately, it also makes us accept information as trustworthy while it could be false. Just because something has been published or broadcasted in the media doesn't mean that it is true. Critical thinking demands that we get to the bottom of this information to determine the nature of its validity.

Question everything

To think critically, we must be ready to question literally everything. You should question any news you get, the statements made by figures of authority and also what you are taught. Making queries is one of the foundation activities in critical thinking. Firstly, find the questions that you should ask in every situation. Secondly, figure out how to ask these questions in such a way that you get constructive answers. This will definitely improve your critical thinking skills.

Comprehend your personal biases

Biases are the conclusions that we make about the world around us based on our own judgement. According to studies, our judgement can sometimes be very misguided, weak and spiteful. It can result in conclusions that are highly inaccurate about other people or things too. If a certain piece of information damages one's self esteem or pricks the ego, then it can be taken negatively or assigned a negative bias even if it is helpful. Therefore,

to fully develop your critical thinking skills, you need to identify out your biases and examine them, this will result in narratives of higher quality.

Plan many steps ahead of your opponent

You can think of life as a game of chess. To succeed, you must plan many steps ahead of your opponent. Critical thinking involves this form of thought. It is not enough to think only two or three steps ahead. You should plan and strategize as many steps ahead as possible. Brainstorm a wide variety of futures that your present could take. Doing this helps you to anticipate possible challenges and be prepared for them. Thus, your critical thinking skills improve.

Identify your main purpose while you are making decisions

Whenever we make a decision in life, there is a specific purpose attached to it. There are goals to the decisions that we make. This purpose is very useful as a guideline for one's thoughts and actions. Ensure that your purpose is clear. Put it in words and let it be your starting point. After that, think and make decisions that align with your purpose. In this way, you are able to increase your critical thinking skills.

Think about the consequences of your actions

Every action has an equal and opposite reaction. Our actions are the results of our decisions. It is possible to predict or estimate possible results. One way of doing this is to put ourselves in the shoes of the stakeholders who are going to be affected by them. Examine how they could feel or react in response to our decisions. This helps you to be prepared for any outcome. You are able to create back up plans that cover any eventuality of your decisions.

Stay aware of the processes happening in your mind

The process of human thinking is simply astounding. The brain is one of the most complex structures known to man. We think in many ways. One of these is through heuristics. This is the process of making mental shortcuts so as to process a lot of information really fast. This method is effective when we are engaged in live events such as sports or self-defense. However, heuristics are not reliable from a critical thinking point of view. This is because they browse through information without taking a deeper look. Heuristics are also heavily influenced by biases. Therefore, improve your critical thinking skills by identifying when you are using heuristics to think and switch to more comprehensive thinking.

Look through the evidence of previous chains of thought

When thinking critically, you do not have to reinvent the wheel. Any problem that you are dealing with or trying to solve has most likely been solved by someone else before you arrived on the scene. To get through it faster and more successfully, simply check to see the results of those who came before you. Use them to guide your decisions and this will indicate better critical thinking skills.

Critical Thinking is the art of using reason to analyze ideas and dig deeper to get to our true potential. Critical thinking isn't about thinking more or thinking harder; it's about thinking *better*. Honing your critical thinking skills can open up a lifetime of intellectual curiosity. But the journey isn't all rosy. Critical thinking requires a lot of discipline. Staying on track takes a combination of steady growth, motivation, and the ability to take an honest look at yourself, even in the face of some uncomfortable facts.

[1] Honing Your Questioning Skills

Question your assumptions. We make a lot of assumptions about almost everything. It's how our brain processes certain pieces of information, and how we get along in everyday life. You could say they are the foundation of our critical framework. But what if those assumptions turned out to be wrong, or at least not entirely truthful? Then the whole foundation needs to be re-built, from the bottom up.

- What does it mean to question assumptions? Einstein questioned the assumption that Newtonian laws of motion could accurately describe the world. He developed an entirely new framework for looking at the world by *re*describing what he thought had happened, starting from scratch.
- We can question assumptions in a similar way. Why do we feel the need to eat in the morning, even when we're not hungry? Why do we assume that we'll fail when we haven't even tried?
- What other assumptions are we taking for granted that might crumble upon further examination?

Don't take information on authority until you've investigated it yourself. Like assumptions, taking information on authority can be useful. Instead of double-checking everything anyone says, we tend to label information as either coming from a trustworthy or not trustworthy source. This keeps us from double-checking every piece of information that comes our way, saving time and energy. But it also keeps us from getting to the bottom of things we perceive as coming from a trustworthy source, even when

they don't. Just because it was published in a magazine or broadcast over TV doesn't mean it's necessarily true.

Get in the habit of using your instinct to investigate questionable pieces of information. If your gut isn't satisfied with an explanation, ask the person to elaborate. If you don't question a fact, read about it or test it yourself. Soon enough, you'll build up a pretty good sense of what deserves more research and what you've determined to be true in your own judgment.

Asking questions is perhaps the quintessential act of critical thinking. If you don't know what questions to ask, or don't ask the questions in the first place, you may as well not get the answer. Finding the answer, and finding it elegantly, is what critical thinking is all about.

[2] Adjusting Your Perspective

Understand your own biases. Human judgement can be subjective, frail, and spiteful. One recent study found that parents who were given corrected information about the safety of vaccines were *less* likely to have their children vaccinated. Why? The hypothesis is that parents given this information accept that the information is true, but push back people it damages their self-esteem - something that is very important to most people. Understanding what your biases are and where they may affect how you deal with information.

Think several moves ahead. Don't just think one or two steps ahead. Think several. Imagine you're a chess grandmaster who's dueling with someone with the capacity to think dozens of moves ahead, with hundreds of permutations. You have to match wits with him. Try to imagine the possible futures the problem you're working on may take on..

Read great books. Nothing beats the transformation of a great bookgreat writing has the power to frame debate (literature), enlighten (nonfiction), or unleash emotion (poetry). And reading isn't only for bookworms.

Put yourself in other peoples' shoes. Empathy can also help you develop your critical thinking skills. Whether it's improving your negotiation tactics or understanding literature better, putting yourself in the shoes of others will help you imagine their motivations, aspirations, and turmoils. You can use this information to get leverage, be persuasive, or just plain be a better person. Empathy doesn't need to be heartless.

Set aside at least 30 minutes a day to improve your brain function. Carve out 30 minutes in your busy day to make your brain more sleek and

powerful. There are dozens of ways that you can do this. Here are just a few ideas:

- Solve a problem a day. Spend a little bit of time figuring out a problem and then
- try to solve it. The problem could be a theoretical or a personal one.
- Find the time to exercise consistently. 30 minutes of aerobic exercise — as little
- as a walk around the neighborhood — can help improve brain function.

[3] Putting It All Together

Understand all your options. When you want to use your critical thinking skills to act — because armchair philosophy can get old after too long — it helps to know what your options are. Lay them all out there, and *then* weigh the options. We often pigeonhole ourselves into believing that we're stuck with only one option, when other options are available.

Surround yourself with people smarter than you. You want to be the big fish in the little pond, because it makes your ego feel good. Well, throw away your ego. If you really want to learn, get better at something, and develop critical thinking skills, hobnob with people smarter than yourself. Not only can you bet that the smart people *themselves* rub shoulders with people smarter than they are, you can also bet that some of that intelligence is going to permeate your perspective.

Fail until you succeed. Be fearless in the face of failure. Failure is just another way of figuring out what *doesn't* work. Use failure to your advantage by learning from your lessons. The popular myth out there is that successful people never fail, when the truth is that successful people fail until they succeed, at which point their success is the only thing that's visible.

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