Critical Thinking

In today's workplace, there are few simple situations and even fewer simple solutions. We are constantly dealing with an abundance of information, differing values and beliefs, our own biases and assumptions and multiple perspectives. Despite these complexities, we go about making decisions and taking action without consciously thinking about how those decisions were made. This approach to thinking and making decisions puts us at risk of making flawed and/or poorly reasoned decisions that can have a significant impact on all areas of our lives.

Critical thinking is a way of increasing our awareness of how we think. It is taking command of our own thinking processes to think more effectively. Critical thinking is the trained and practiced application of rigor to our thought processes to ensure we are using the best thinking we are capable of in any situation.

Critical thinkers know:

- how to separate facts from opinions
- how to examine an issue from all sides
- how to make rational inferences
- how to withhold personal judgment or biases.

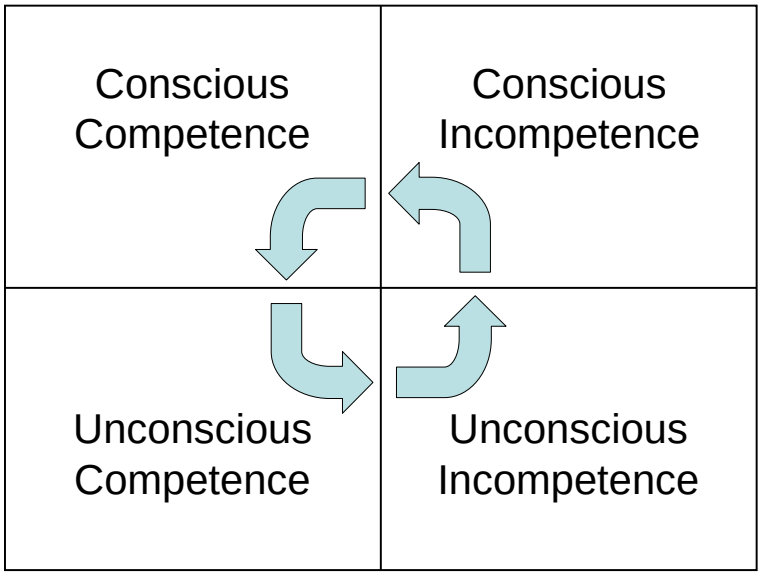
Critical thinking works. By applying critical thinking to our thought processes, we will ultimately make better decisions and fewer mistakes.

This *Critical Thinking* whitepaper provides an introduction to critical thinking: what it is and how it can improve your decision making process.

Intelligence is something we are born with. Thinking is a skill that must be learned.
Edward de Bono

Conscious Competence

Thinking is at the foundation of everything we choose to do. Thinking drives our decisions, our wants, our beliefs, our values and our feelings. The way we think shapes who we are. Most of us rarely stop to think about how we are thinking. When it comes to thinking, we generally operate in an unconscious state, we are not aware of and we don't question our thinking. When we don't question our thinking we become masters of self-deception and are unable to see the fallibility of our own thinking. We become unconsciously incompetent. To improve our thinking we need to move from an unconscious thinking state to a conscious thinking state. We need to think about our thinking while we are thinking. Critical thinking is the ability to consciously examine one's own reasoning or the reasoning of another and evaluate that reasoning to determine if it is well-reasoned. When our thinking is well-reasoned we are taking our thinking to the conscious competence level.



At the conscious competence level we understand thinking; specifically, the parts of thinking (i.e., the elements of reasoning), the impact of ourselves on our thinking, and the processes used to improve thinking. By thinking about our thinking and using tools to actively work to improve our thinking we ultimately improve our decision making and problem solving skills, how we relate to others, and our sense of personal control. When we bring our thinking to the conscious competence level it leads to better decisions. Better decisions leads to better practice. Better practice leads to better outcomes.

How We Think

In order to bring our thinking to a conscious state we need to understand how we think. The challenge is that while we all think, we do not all think equally. The quality of thinking varies from person to person as well as from situation to situation. Our thinking is influenced by a number of individual and environmental factors such as our habits, our perceptions, our state of mind, the time of day, the amount and quality of information we take in, and the number of distractions within the environment.

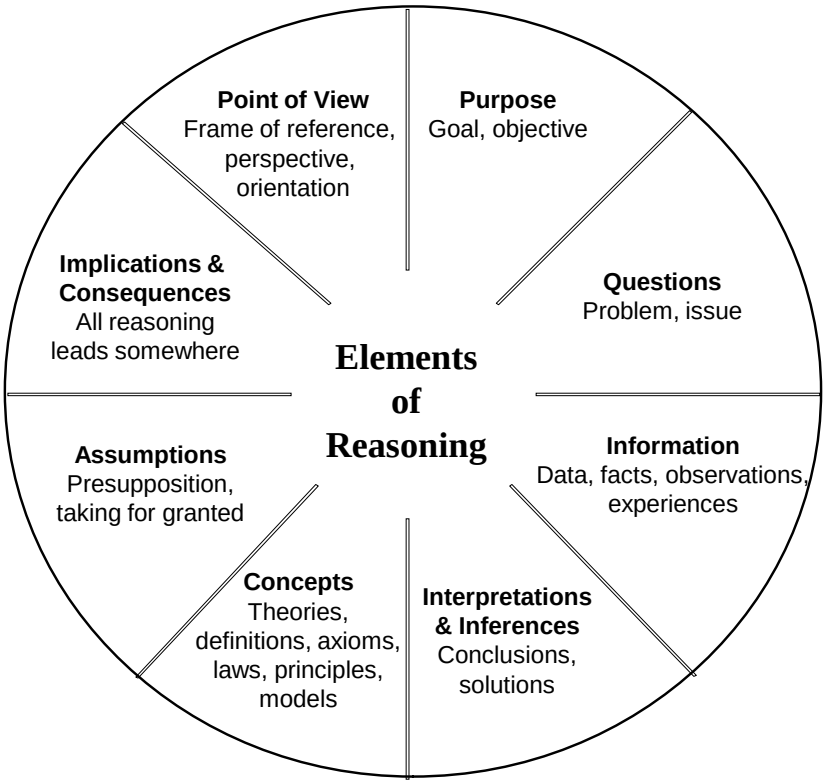
In the book Critical Thinking: Tools for Taking Charge of Your Professional and Personal Life, Paul and Elder argue that we think to make sense of our world; whenever we think about something we are reasoning. Reasoning involves drawing conclusions based on the information we perceive. All thinking or reasoning has a common underlying structure that is made up of essential parts or elements known as the elements of reasoning. These elements, outlined below, always exist in our thinking regardless of the context or whether or not the reasoning is done well or poorly.

Elements of Reasoning[1]

- Purpose – whenever we think, we think for a purpose.
- Questions – we think to answer a question or solve a problem.
- Information – our thinking is based on data, information and evidence.
- Interpretations and Inferences – whenever we think we make interpretations and/or inferences from which we draw conclusions and give meaning to data.
- Concepts – all reasoning is expressed through, and shaped by, concepts and ideas.
- Assumptions – all reasoning is based on assumptions.
- Implications and Consequences – all reasoning leads somewhere or has implications and consequences.
- Point of view – all reasoning is done from some point of view.

There are two ways to slide easily through life: namely, to believe everything, or to doubt everything; both ways save us from thinking.
Alfred Korzybski

[1] [1] Paul, R. & Elder, L., (2002) *Critical Thinking: Tools for Taking Charge of Your Professional and Personal Life.* New Jersey: Financial Times Prentice Hall



The interrelationship between the elements of reasoning can be expressed in the following way:

- The purpose affects the manner in which we ask questions
- The manner in which we ask questions affects the information we gather
- The information we gather affects the way we interpret it
- The way we interpret information affects the way we conceptualize it
- The way we conceptualize information affects the assumptions we make
- The assumptions we make affect the implications that follow from our thinking
- The implications that follow from our thinking efforts affect the way we see things, our point of view

How We Mess Up Our Thinking[2]

There is good news and there is bad news. First the good news, the mind is often regarded as a reality-organizing machine. It is there to respond to reality, to deal with facts of nature, to sort them and to come to understand them. Now the bad news, the mind is also a non-reality machine. Our mind hates not knowing. When we don't know something the mind fills in the blank. The mind will project, imagine and invent all sorts of scenarios, times and events that are not real to fill in the blank – these are our irrational fantasies that we all do daily.

We need to learn to monitor and critically analyze our own thoughts and evaluate our use of ideas. We need to bring our habits/thoughts/beliefs to the surface and actively reflect upon them.

Common Thinking Traps

Some of the more common thinking traps are:

Trap	Description	Example
Confusing labels with reality	Attaching a stereotype to a group of people and then deal with the label versus the reality.	You might refer to all oil rig workers with the label of "rig pigs" instead of dealing with the individual.
Over-generalizing	Making broad assumptions on specific information. You view a single event as proof that any similar event will turn out the same way therefore giving meaning to unrelated events.	*"I had a bad experience working on a team. All experiences working on a team will be bad*."
Confirmation bias	Selecting data to confirm what we already believe. We don't see things as they are; we see things as **we** are.	If you don't think that you're a good project manager, you reject as irrelevant any evidence that people think you are.
Fortune telling	Predicting the future without any evidence. You make predictions that things can't change or will turn out badly or that they will only change for the better.	*"This new information system will create nothing but more work for us."*

[2] Adapted from the works of Chris Argyris, *Overcoming Organizational Defenses*, (1990, Prentice Hall, p. 88-89)

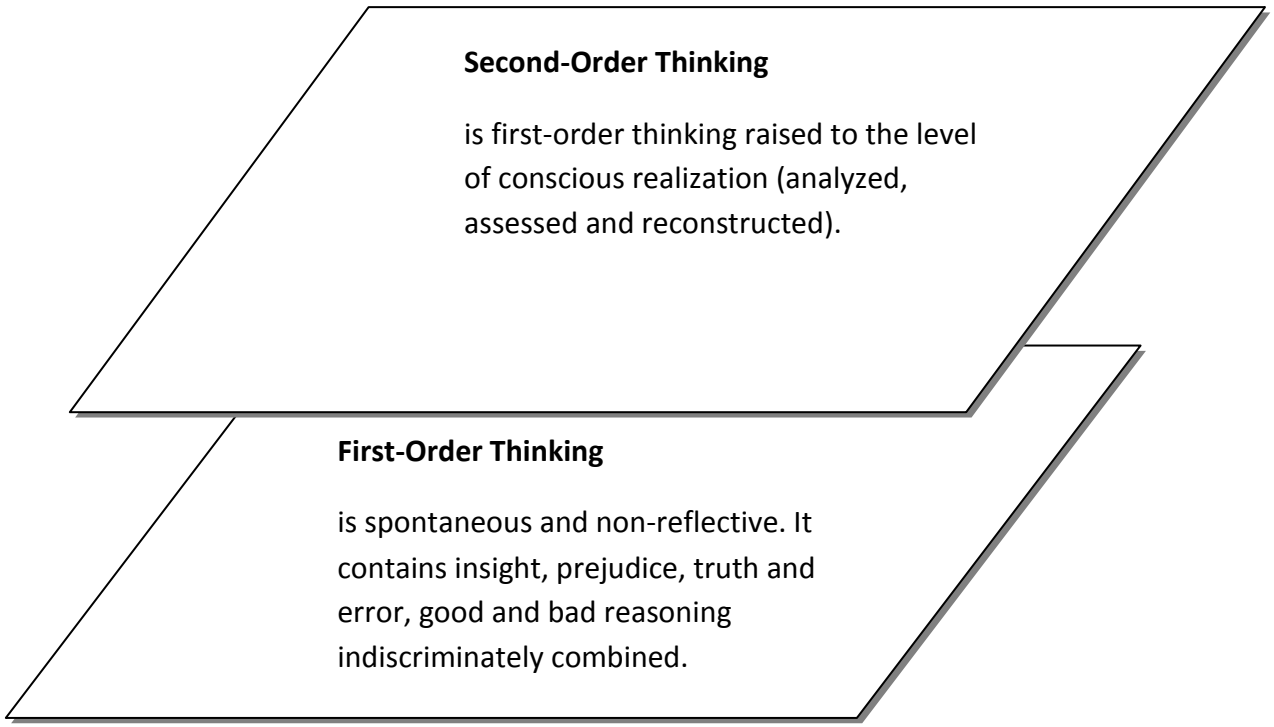
Trap	Description	Example
Black and white thinking	All or nothing thinking. Seeing things as either right or wrong. There is no room for grey.	*"If it is not a perfect solution it will be a failure."*
Mind reading	Jumping to conclusions about what others are thinking, without any evidence.	You receive a phone message from your manager stating that he needs to see you right away. You think that you must have done something wrong.
Mental filtering	Focusing only on the negative or positive in a situation or a relationship. You filter all information through this lens.	While you are making a presentation at your team meeting your supervisor is using her Blackberry. You assume that she thinks that your presentation is boring and that she has better things to do.
Discounting contrary information	Playing down or minimizing the importance of new information coming to you that seems to contradict your picture of the situation or your beliefs.	One of your employees compliments you on how well your presentation at the conference went. You think because he is one of your up and coming employees that he has to say something positive.
Using incomplete/insufficient information	We make decisions on incomplete or insufficient information.	Saying *"I am really good at my job"* doesn't provide any details as to what specific parts of the job you are good at.
Emotional reasoning	Making an assumption about an experience based on feelings rather than facts. We let our feelings influence our judgment. We don't apply rigor in our thinking. Emotional reasoning leads to "shoulding", *I should or s/he should.*	Jan looks around at all the stuff on her desk and the piles of paper on the floor in her office and is overwhelmed by the prospect of straightening it all out and getting organized. *"I should be able to keep things organized, but it's hopeless. Why even try?"*

Our opinions become fixed at the point where we stop thinking.
Joseph Ernest Renan

Thinking About Our Thinking While We Are Thinking

When our thinking is spontaneous and not reflective, it is considered first-order thinking. First-order thinking contains beliefs, assumptions, truth and error, and good and bad reasoning indiscriminately combined.

To improve our thinking and decrease our chances of engaging in flawed thinking we need to keep in mind and evaluate the processes we use to draw our conclusions and make our decisions. When we understand the structure of our thinking and become aware of the thinking traps we call fall into, we begin to see ways in which we can improve our thinking. When we critically analyze, assess and reconstruct our first-order thinking we begin to engage in second-order thinking.



(reprinted from Paul and Elder, 2002, p.14).

Rarely do we find men who willingly engage in hard, solid thinking. There is an almost universal quest for easy answers and half-baked solutions. Nothing pains some people more than having to think.
Martin Luther King Jr.

Critical Analysis

Information gathering is a process of collecting facts, data or experiences related to the situation or question you need to analyze.

There are three key factors in information gathering:

- Understanding how much research you should do
- Making sure you ask the right questions
- Gathering the information you need

The amount of information gathering you do and what information you collect depends on the questions arising, the time available, and the consequences being wrong.

Making sure you ask the right questions is of key importance. Make a plan for gathering the information needed for many sources including interviewing colleagues, internet searches, research poles and/or seek out a qualified expert to answer your questions.

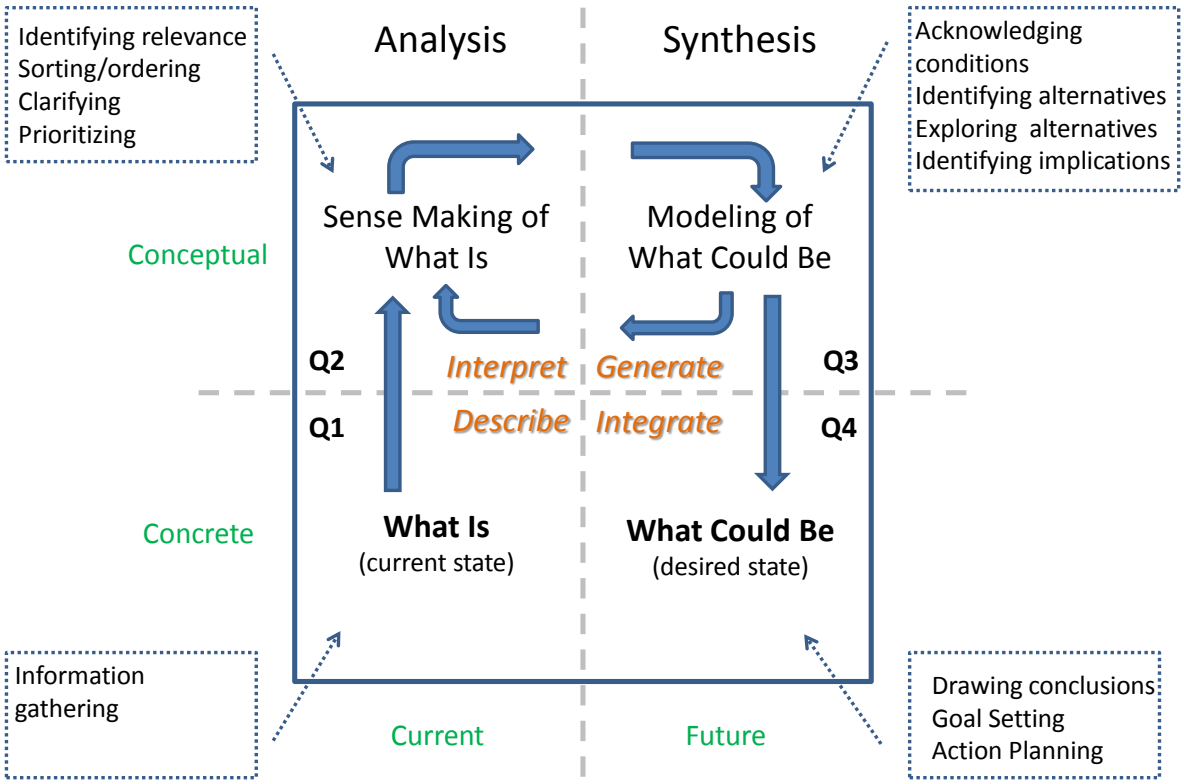
Key Questions

- What information is necessary to answer the essential questions?
- Where is the information located?
- How will I get the information required?
- Is the evidence laid out clearly?
- Have I searched for information against my position and explained its relevance?

Assessment

To understand better the assessment process it is important to know the distinction and relationship between analysis and synthesis. Analysis is the process of searching for understanding by breaking the information collected down; identifying its various parts and studying the parts to understand better each individual part. The collective outcome of each individual component is studied in synthesis. Synthesis helps others see the connections between the things learned from the analysis.

This diagram illustrates the relationship between analysis and synthesis. Analysis is represented by the quadrants to the left of the vertical axis with both quadrants maintaining a current focus. Synthesis is represented by the quadrants to the right of the vertical axis with both quadrants maintaining a future focus. The diagram also illustrates the quadrants below the horizontal axis are concrete and the quadrants above the horizontal axis are conceptual.



Reconstruction

Evaluating your recommendations and rationale is the formal "summing up" of the assessment phase. It is the explanation of the results of your assessment in the form of presenting your case. It is a clear delineation of the important points during your assessment that aided in identifying the acquired results or assisted you in coming to a conclusion. A format or outline of how one might present their case is illustrated below.

Presenting your case

1. Describe the situation
    - Provide situation synopsis
    - Identify the questions requiring a decision
    - Identify the unique factors of this situation
2. Identify information and factors considered during analysis
    - The person you bring
    - Client's interest
    - Interests of others
    - Organizational policies
    - Legal regulations
    - Professional code of practice
    - Ethical obligations
3. Explain possible courses of action (synthesis)
    - Feasibility
    - Acceptability to involved participants
    - Costs, benefits and projected outcome of each course of action
    - Consequences (likely positive and negative impacts)
    - Possible counter arguments and rebuttals
4. Summarize recommendations and rationale
    - Formally summarize your recommendations providing an answer to the questions arising from the situation and how you got there
    - Implications of recommended action(s)

- Implications of not taking recommended action(s)

5. Formalize the decision
    - Summarize decision
    - Document decision
    - Communicate decision to impacted parties

Socratic Questioning

When you want to test you finding or the findings of others Socratic questioning can lead you though. Socratic questioning is a systematic and disciplined approach that is used to

- Explore complex ideas
- Open up issues and problems
- Uncover assumptions
- Analyze concepts
- Distinguish what we know from what we don't know
- Follow out logical implications of thought

It is at the heart of critical thinking and provides us with a means to challenge other's thinking. There are the six types of Socratic questions that can be used to delve deeper into a situation or conclusion.

These are the same questions you want to ask yourself when gathering information, when probing for assumptions and challenging your own conclusions. Critical thinking is driven by questions that challenge the accuracy and completeness of thought.

The essence of critical thinking is that it is self-correcting. Go through the process, if you find a flaw start again. Sound thinking skills don't come naturally they need to be developed. We have to put effort not only into our reasoning but also into the evaluation of our reasoning. Our thinking skills become better with proper practice.

For more information about the process of critical thinking read Rob Schnell's paper *Critical Thinking: The PRESENCE of Mind* at www.performancegroup.com.

About the Author

As a founding partner of The Performance Group, Rob Schnell has worked with a wide range of large and small organizations both in the private and public sector. Over the last 30 years, Rob Schnell has facilitated organizations' success through strategic planning, leadership development, conflict management, team building and coaching. Rob assists organizations improve performance through innovative and participative approaches. Rob's success is based in his ability to ask the tough questions and frame new ways of behaving in memorable, inspiring ways. Rob shares his passion for Critical Thinking in a one-hour presentation, ½-day, 1-day or 2-day course. If you are interested in speaking with Rob about this or other topics, please contact him at rob.schnell@performancegroup.com.

Other topics presented by Rob

- Face to Face Leadership
- Creating a Positive Work Environment
- Influencing Difficult People
- Effective Team Communication
- Bullying @ Work
- Survive or Thrive: The Choice is Yours
- Generational Differences at Work

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