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Book Part

Chapter 5 The Ethics of Corporate Critical Thinking

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Chapter 5

The Ethics of Corporate Critical Thinking

Executive Summary

"The unexamined life is not worth living" (Socrates). That is, without critically inquiring into the knowledge of life which is well-being and valuable, life is not worth living. Critical thinking questions existing theories and their unexamined and obsessive assumptions and generalizations, constraints, and "best" practices of the prevailing system of management and tries to replace them with more valid assumptions and generalizations that uphold the dignity, uniqueness, and inalienable rights of the individual person and the community. Better outcomes result from asking the right questions than from having the right answers. In the diverse, pluralist cultural environment of today, the promise of a truly generative dialog among Occidental (Western) and Oriental (Eastern) cultures and civilizations holds great hope for the future. Critical thinking (CT) is an "inclusive" thinking system that can facilitate this dialog such that all of us have a meaningful space and place in this universe. After defining CT and arguing its importance for executives, this chapter introduces CT in two parts: Part 1: Various Approaches to Critical Thinking; Part 2: Major Theories of Critical Thinking. Several contemporary business cases will be invoked to illustrate the need, nature, and scope of corporate CT.

5.1.   Introduction

The word *critical* (from the Greek word *kritikos*) means to question, to make sense of, or able to analyze. It is by questioning, by making sense of things, events, and people, and by analyzing them that we examine and improve our thinking and the thinking of others (Chaffee, 1988, p. 29). The word critical is also related to the word *criticize* that implies questioning and evaluation in a constructive way. Thus, at an initial and etymological level, *critical thinking* is *thinking that questions and challenges our past and present thinking on subjects and objects, their properties, and events*. Critical thinking (CT) is constructive thinking about the world of ours that questions and evaluates its operations, history, and management.

   The word "critical" is closely associated with the concept of a threshold or a *critical point*. For instance, in physics, the critical point is the point above or

below which certain physical changes will not occur. In thermodynamics, the properties of the substance at this point are called its *critical constants*. There are numerous other instances of this application of the word critical as "limiting." Applied to business knowledge, critical point would mean a critical threshold beyond which we want the students to emerge free from their "critical constants" of management orthodoxy, apathy and malaise, value-hibernation, self-centered rigidity and individuality to thinking for others, for the six billion that are poor in the world, and the masses that our business education or capitalist system does not directly benefit.

CT thinks beyond the short-term to the long-term goals and consequences of our thinking, decisions, choices, and actions. CT, therefore, thinks beyond revenues, market share, profits, and shareholder value to other bottom lines that include the intended and unintended long-term consequences of corporate decision-making, strategies, and implementations.

CT is a discipline that questions and challenges "our prevailing system of management" and its assumptions and generalizations. In the process, it is an attempt in transforming the prevailing system of management. Dr. William Edwards Deming (1900-1993), author of Total Quality Management (TQM) believed that a "common system of management" governed our modern institutions and, in particular, formed a deep connection between work and school. From early infancy, we have been socialized in ways of thinking and acting that are embedded in our most formative institutional experiences. The relationship between a boss and subordinate is the same as the relationship between a teacher and student. The teacher sets the goals; the students respond to them. The teacher has the answer; the students work to get the answer. Students know when they have succeeded because the teacher tells them so. By the time the children are 10, they all know what it takes to get ahead in school and please the teacher − a lesson they carry forward in their later academic and management careers. Hence, Deming would often say, "We will never transform the prevailing system of management without transforming our prevailing system of education. They are the same system." In a broader role, CT questions and challenges our current system of education.

5.2.   Why Do We Need Critical Thinking?

We need to own and respond to problems that we are or that we create before we pass the buck on to others. Stephen Covey said it eloquently: "If you think the problem is *out there*, that very thought *is* the problem." Lack of CT makes us either incapable of recognizing problems and their severity in ourselves or the organizations we work for, or we flatly trace their origin to others.

We have never critiqued our education and learning systems: what are we teaching, how do we teach, what do students learn, how do they use this knowledge, and what are the long-term good outcomes of our education systems on society? This is CT and its application. David Orr (1991), an environmental educator, reminded us long back that our education system could unwittingly create monsters like Hitler and Stalin. These perpetrators of the Holocaust were heirs

of Kant and Goethe. In most respects, the Germans were the most educated people on earth, but their education did not serve them as an adequate barrier to barbarity. This is lack of CT of our education system.

David Orr (1991) argues that education is no guarantee of decency, prudence, or wisdom. More of the same kind of education will only compound our problems. This is not an argument for ignorance, but rather a statement that the worth of education must now be measured against the standards of decency and human survival − the issues now looming so large before us in the decade of the 1990s and beyond. It is not education that will save us, but education of a certain kind. It should be an education that can stand the scrutiny of CT.

The *role of a teacher*, a professional role, can be kept analytically separate from the *role of a scholar*. Scholarship implies realized expertise or developing expertise in one's field, regular updating of one's skills, intellectual honesty, and respecting intellectual property. The role of a teacher is to communicate one's expertise and skills, and advances of knowledge to one's students. Both roles assume and imply ethical responsibilities.

Critical filtering of one's knowledge before it is communicated to others is important. CT makes us good and professional scholars that become the "conscience" of our discipline or field. A good scholar owes it to his/her profession to be its own objective critic. A scholar who loves his/her profession is not afraid to criticize it. A good person who loves his/her institution is not afraid to criticize it.

5.3.   A Moral Canvas for Critical Thinking

In writing a preface to the new edition of *The Fifth Discipline*, Peter Senge (2006, pp. xiv−xv) summarized the maladies that afflict most organizations today. We capture and expand them in Table 5.1. Table 5.1 is fodder for CT. CT questions obsessive generalizations, constraints, and "best" practices of the prevailing system of management and tries to replace them with more valid assumptions and generalizations that uphold the dignity, uniqueness, and inalienable rights of the individual person and the community. The old prevailing system of management focused on the shareholders raising their share value and most often, at the expense of individual, social, and natural capital. Following this prevailing system of management, the gaps between the poor and the rich, the prosperous, and the marginalized are widening in almost every country of the world.

An alternative to the prevailing system of management must be based on human dignity and equality, self-respect and self-esteem, dialog and sharing, love rather than fear, curiosity rather than an insistence on "right" answers, transparency rather than secrecy, and executive privilege, a shared vision and a shared ongoing journey rather than a fixed destiny of growth targets, and learning rather than on controlling. Senge (2006, p. xviii) believes that the prevailing system of management is, at its core, dedicated to mediocrity. It forces people to work harder and harder for the corporation and its shareholders, while failing to

Table 5.1: The Prevailing System of Management with its Constraints and Regimentation.

Prevailing System of Management	Obsessive Preoccupations, Generalizations, and Overemphasizing "Best" Corporate Practices	Freedom from Benchmarking against Generalizations and Corporate "Best" Practices
Management by measurement	Focusing on short-term metrics Overvaluing tangibles — devaluing intangibles	Focusing on long-term metrics, since "you can only measure 3% of what matters" (W. E. Deming) Overvaluing intangibles — devaluing tangibles
Compliance-based cultures	Getting ahead by pleasing the boss Compliance is rewarded — noncompliance is punished Management by fear, rewards, and punishments	Getting ahead by pleasing all the stakeholders Compliance is expected and duly fulfilled Management by intrinsic motivation
Managing outcomes	Management sets goals and targets that employees must accept them. Employees are held accountable to realize them (regardless of whether they are possible within existing systems and processes) Realizing targets is considered success worthy of promotions Not realizing targets is deemed failure and disloyalty, punishable by firing	Management sets goals and targets together with employees who gladly own and accept them Employers and employees are accountable to realize them Realizing targets is considered success worthy of promotions; not realizing targets is admittance of collective mistake that can be avoided
Problem-solving	"Right answers" versus "wrong answers" Technical and linear problem-solving is emphasized Short-term solutions are readily accepted Nonlinear or circular innovative thinking is held suspect Diverging (systemic) problems are discounted	"Right answers" and "wrong answers" Nontechnical and nonlinear problem-solving should be explored and pursued Short-term solutions should be critically scrutinized for their long-term unintended effects Nonlinear or circular innovative thinking is encouraged

Table 5.1: (*Continued*)

Prevailing System of Management	Obsessive Preoccupations, Generalizations, and Overemphasizing "Best" Corporate Practices	Freedom from Benchmarking against Generalizations and Corporate "Best" Practices
Uniformity and conformity	Diversity is either discouraged or is a problem to be solved	Diversity is encouraged as an opportunity
	Uniformity and conformity are praised and institutionalized	Uniformity and conformity are discouraged if leading to mechanization and over-institutionalization
	Consensus building is stressed at the expense of suppressing individuality	Consensus building not at the expense of dissent suppression. Conflict is accepted and expected as a way forward to of community agreement
	Conflict is suppressed in favor of superficial agreement	
	Employees are cog in the wheel or "factors of production" (Frederick Taylor)	Employees are hubs in the wheel of progress and growth
Predictability and controllability	To manage is to command and control	To manage is to commend and respect
	The "holy trinity" of management is: planning, organizing, and controlling	The "holy trinity" of management is: co-planning, sharing, and joint responsibility
	Linear analysis of data to explain, predict, and control	Nonlinear analysis of data to explain, predict, and control
	Quantitative analysis based on systematic variance in data	Qualitative analysis based on systematic variance in data
	Qualitative analysis of non-systemic variance (e.g., outliers; beyond six sigma) is discouraged	Qualitative analysis of non-systemic variance (e.g., outliers; beyond six sigma) is encouraged
Excessive competitiveness	Success is to suppress competition − win−lose game!	Success is to ignore competition − a win-win game!
	Competition between people is essential to achieve desired performance	Competition between people is not essential to achieve desired performance
	"Without competition among people, there is no innovation"	"Innovation is an ongoing exercise regardless of

Table 5.1: (*Continued*)

Prevailing System of Management	Obsessive Preoccupations, Generalizations, and Overemphasizing "Best" Corporate Practices	Freedom from Benchmarking against Generalizations and Corporate "Best" Practices
	"We have been sold down the river by competition" (W. E. Deming). Fighting competition is the only source of SCA and not "blue oceans." Bigger the better: growth is by destroying competition	competition. Fighting competition might be a "red" source of SCA besides "blue oceans." Small is beautiful — growth is by continuous creative innovation
Loss of the whole	Excessive fragmentation/compartmentalization of functions — divide and rule	Progressive integration and non-compartmentalization of functions — unite and rule
	The efficiency of the whole is the sum of the efficiency of its parts. Optimizing each part optimizes the whole!	The efficiency of the whole is greater than the sum of the efficiency of its parts. Optimizing each part may not optimize the whole! The whole is defined by the interaction of its parts, and vice versa
	The whole is defined by its parts, and not vice versa	
	Interconnectedness and interrelationships are ignored	Interconnectedness and interrelationships are emphasized
	Interactive effects are either not considered or irrelevant	Interactive effects are always considered as relevant
Equality and inequality management	We are not equal but unequal in talents, skills, intelligence, and possessions	We are equal despite unequal in talents, skills, intelligence, and possessions
	Hence inequality of income, wealth, and opportunity is essential for progress!	Hence inequality of income, wealth, and opportunity is not essential for progress!
	Egalitarianism is a myth; it defies and negates reality	Egalitarianism is a good goal; it defines and reflects reality
	Inequalities between the rich and the poor spur growth and innovation	Inequalities between the rich and the poor are outcomes of unbridled growth and innovation
	Creation of wealth and non-redistribution of wealth are the engine of growth	Creation of wealth and just redistribution of wealth are

Table 5.1: (*Continued*)

Prevailing System of Management	Obsessive Preoccupations, Generalizations, and Overemphasizing "Best" Corporate Practices	Freedom from Benchmarking against Generalizations and Corporate "Best" Practices
	Survival of the fittest, the best, and the most productive is the law of evolution	the engine of growth and prosperity
	Hence cultivate the best in this limited world; flotsam and jetsam the rest (Club of Rome)	Survival of the fittest, the best, and the most productive is the law of social revolution and not social harmony and human solidarity

tap the spirit and collective intelligence that characterizes working together at their best. In the diverse, pluralist culture environment, the promise of a truly generative dialog among cultures and civilizations holds great hope for the future. CT can facilitate this dialog such that all of us have a meaningful place in this universe.

Case 5.1: GAIL Pipeline Blast Kills

An explosion in a Gas Authority of India Ltd (GAIL) pipeline around 5:00 a.m. Friday, June 27, 2014, near Nagaram Village, East Godavari District, Andhra Pradesh, India, killed at least 20 people while injuring 18 others and damaging 50 houses. Massive fires gutted houses, vehicles, and coconut orchards, leaving a trail of destruction in the village. Coconut orchards were reduced to ashes and several other crops were damaged too. Over 300 birds which included several species like cormorant, pond heron, and common crane (Eurasian crane) were also killed. The injured were rushed to different hospitals nearby in the district. Chief Minister of Andhra Pradesh (AP), N. Chandrababu Naidu, who was then in Delhi, and Petroleum Minister Dharmendra Pradhan visited Nagaram and also the hospitals where the injured were being treated.

Once the blast was reported, there was almost no time to act as the damages were caused almost instantaneously. Though GAIL officials were successful in cutting off the gas supply to the suspect pipeline within 15 minutes, this duration was enough for the crisis to wreak enormous damage to the area affected, in terms of both losses to the local populace and also destruction of property and resources. GAIL dispatched multiple teams to undertake foot-patrol of every inch of its pipeline network in the KG basin to check on its deficiencies.

Allegedly, GAIL had not paid attention to the many complaints on gas leaks that were made by the Nagaram villagers. They said that the pipelines were laid 15−20 years ago and had become corroded and defective. The Oil Industry Safety Directorate (OISD), under the petroleum ministry, carries out periodical safety checks and audits of oil and gas installations across the country. Apparently, they did not detect the GAIL pipeline defects near Nagaram village. Moreover, OISD has only powers of recommendation. It is not a statutory body. Often, its recommendations have not been taken seriously. There have been talks now of giving it such an authority, but it has not materialized yet.

GAIL is a Government of India undertaking and is India's largest state-owned natural gas processing and distribution company. It procures natural gas from ONGC, Reliance Industries, and Cairn Energy. It has 850 kilometers of gas pipelines in Andhra Pradesh and supplies natural gas to 37 industrial units. A winner of the prestigious award Maharatna, GAIL is known for high standards in terms of quality. As per industry rules, GAIL did follow all statutory and safety guidelines in their operations. They also had ensured that the pipeline had been certified safe by various national and international agencies. The probability of a leak being present in their pipeline for so long without any action being taken would therefore have been very small.There are over a dozen gas-gathering stations in the area. GAIL supplies gas to 37 industrial units in Andhra Pradesh, including the Lanco Kondapalli power project near Vijayawada. Operations at Lanco, however, were not affected as they resumed gas supply through an alternative pipeline. Supply to the 1,466 megawatt Lanco power station was restored within a few hours. GAIL supplies 0.7 million British thermal units (BTU) a day to the Lanco plant.

The sudden stoppage of supply of natural gas to industries in Kakinada from the Oil and Natural Gas Corporation's (ONGC) Tatipaka terminal seems to have an adverse impact on the urea production. However, the absence of the supply of natural gas has forced the Nagarjuna Fertilizers and Chemicals Limited (NFCL), the largest manufacturer of fertilizer, to stop production forcibly in its plants located in the city. The firm that produces 4,600 tons of urea a day was in idle mode for the next two weeks, which cost Rs 1.5 crore a day in terms of halted production.

GAIL faced a dilemma as to how to address this situation in the future. Even though there is a valve at every 40 km of the pipeline and it gets shut in case of a leak, layout of pipelines through the residential area is protested by people. Though they reestablished supply to the various industries in the neighboring regions through an alternate pipeline quite briskly, their goodwill and industry standing had taken a battering. Further, the blast also resulted in major capital losses through the destruction of the pipeline and loss of the gas that is transported.

The Petroleum Minister Pradhan has ordered an inquiry into this debacle by a committee headed by a joint secretary and with representatives from the

Hindustan Petroleum Corporation, the OISD, and the National Disaster Management Authority.

A public interest litigation was filed in the High Court seeking directions to the GAIL to shift the gas control station (GCS) located in the midst of a habitation to an isolated place with immediate effect. The Hyderabad High Court on Monday, June 30, 2014, directed the central government to file its reply within three weeks to a petition that sought the shifting of gas collecting station (GCS) and pipelines of GAIL from Nagaram area of East Godavari district.

In a late-evening press release on Friday, June 27, 2014, ONGC said there could be minor gas leaks in the trunk line, which due to zero wind in the vicinity get settled over the area. During the early hours, when someone lights a stove for daily chores, the settled gas could trigger fire amounting to a pipeline explosion. The GAIL terminal was closed instantly, but it took 15 minutes for the gas source to cease. In the intervening time, the remaining gas in the pipeline might have caught fire and caused the burst of the GAIL's trunk line.

Ethical Questions

(1) Define the GAIL pipeline disaster as an ethical organizational crisis. Describe its antecedents, determinants, symptoms, concomitants, and consequences in relation to GAIL.
(2) Some crises can be recurrent and non-preventable, whether they are system breakdowns, human interventions, or natural disasters. To which type does GAIL pipeline blast belong and why? To what extent is ONGC's explanation of this blast a crisis that is recurrent and non-preventable, and why?
(3) Other crises are rare but their organizational impact is high. Effective management of such a crisis is difficult and often partial. Does the GAIL pipeline blast belong to this category?
(4) In general, most organizational crises imply and/or accompany losses of capital, human resources, revenues, and reputation. Assess these losses for the Nagarjuna village and for GAIL. Assess GAIL's moral responsibility to prevent such disasters.
(5) Hence, argue, develop, and justify an *ethics of organizational crisis* by content, goals, and objectives. Compare it to the Bhopal Spill of December 2−3, 1984.
(6) Apply CT principles: which did GAIL violate most and why?
(7) Apply ethical theory principles of teleology, deontology, distributive justice, and corrective justice: which ethical theory and its principles did GAIL (together with OISD and ONGC) compromise most and why?
(8) Hence, how would you detect, avert, and preempt such disasters in the future, especially in relation to the powerless poor villages of India?

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Case 5.2:   Andy Fastow's Critical Thinking After His Prison Sentence Experience

For six years in a row, *Fortune* magazine named Enron the "Most Innovative Company," and Fastow himself was praised for his creative use of structured finance and off-balance sheet accounting.

Released from the Prison in 2011 after serving a sentence for six years, Andy Fastow, ex-CFO Enron, addressed University of New Mexico (UNM) B-students. The presentation, titled "Rules versus Principles," was put on by the Daniels Fund Ethics Initiative at UNM, which supports business ethics education. In a rare public lecture, Andy Fastow held up his "CFO of the Year" award in one hand, and his federal prison ID card in the other and said: "I got both of these for doing the exact same thing," he said before a crowd of eager UNM business students.

Fastow went on to talk about his role in the biggest corporate scandal of the century and the lessons he learned about the ethics of business. In 2001, the Securities and Exchange Commission investigated Fastow's role in hiding massive amounts of Enron's debt using off-balance sheet accounting and special-purpose entities. Fastow was eventually convicted of fraud, money laundering, and conspiracy and was forced to forfeit nearly US$24 million in assets. He was sentenced to six years in federal prison and was released in December 2011.

The collapse of Enron was a dramatic example of the failure of business people to put principles before rules, Fastow explained − a mistake that corporations and governments still make to this day. "I didn't set out to commit fraud," Fastow said. "I cannot remember any time that I ever considered I was committing fraud."

Fastow described the strange world that a CFO operates in, a gray area where the rules set by regulators are complex, vague, and sometimes nonexistent. This gray area can be seen as an opportunity, a chance for businesses to interpret the rules to suit their needs, he said. In these situations, it is incredibly important for individuals and organizations to recognize unethical behavior and determine the best ways to proceed, he

said. "I thought I was so smart; I thought I was a hero for bending the rules," Fastow said. "It comes down to individual people making a decision − we always asked 'is it allowed?' not 'is it the right thing to do?'"

"Every day, corporate accountants cut and paste numbers in spreadsheets to magically turn problems into profits, kicking the can down the road until their problems become unmanageable," he said. "The obsession of the corporate world with short-term profits, huge bonuses and stock prices has created a dangerous culture in which business people look for every shortcut and loophole they can find to make their numbers, despite the long-term consequences," he said.

- His message to the students was simple: rules and regulations are not enough. Only employees can make a difference by standing up and saying "no" when they encounter unethical practices in their business careers.
- "You can always find an attorney to get you the answer you want. You can always find an accountant to get you the answer you want," Fastow said. "There's only one gatekeeper − you."

Source: Baca, Jonathan (2014, November 25). Ex-Enron CFO gives ethics lecture. *DailyLobo.Com*. Retrieved from http://www.dailylobo.com/article/2014/11/11-25-enron-cfo-speech. Jonathan Baca is the news editor at the Daily Lobo. He can be contacted at news@dailylobo.com, or on Twitter@JonGabrielB.

5.4. Part 1: Various Approaches to Critical Thinking

The concept of "critical thinking" is variedly defined in the relevant literature. We select a few thematic views of CT, especially as they relate to business and ethics of business education.

5.4.1. Critical Thinking as Making Better Sense of the World Around Us

Chaffee (1988, p. 26) views CT as an active and organized effort to make a better sense of the world around us. *Thinking* represents "our active, purposeful, organized efforts to make sense of the world." *Thinking critically* is "our active, purposeful, organized efforts to make sense of the world by carefully examining our thinking and the thinking of others in order to clarify and improve our understanding" (Chaffee, 1988, p. 27). Thinking is the way we make sense of the world; thinking critically is thinking about our thinking so that we can clarify and improve it.

CT is not simply one way of thinking. It is a total holistic approach to understanding how we make sense of the world and the universe. When we think critically, we are actively using our intelligence, knowledge, and skills to effectively deal with our life's situations and ourselves (Chaffee, 1988, p. 30).

CT involves taking an active attitude toward the situations encountered in life. Thinking critically does not mean simply having thoughts and waiting for things to happen. This would be passive thinking − we would be letting events, others, and their thinking to control us and define us. Watching too much television or indulging in social media, for instance, is passive thinking; we allow ourselves to be influenced by the thinking and acting of others. CT is active, proactive, and interactive dialog with our world of people, properties, and events.

5.4.2.   Critical Thinking as Reflective Thinking

According to Paul and Elder (2002), CT is *reflective thinking* or thinking critically. Thinking critically is reflection − to think back on what we are thinking or feeling. It is thinking back on thinking. To think critically is to think carefully about our thinking and the thinking of others. It is a serious study of thinking. It is serious thinking about thinking. You become the "critic" of your own thinking.

CT is to improve your thinking. "Critical thinking is the disciplined art of ensuring that you use the best thinking you are capable of in any set of circumstances" (Paul & Elder, 2002, p. 7). Our thinking influences everything we do, want, or feel. CT refuses biases, prejudices or stereotypes, false beliefs, myths, or illusions to influence our thinking.

There is what we might call a *first-order thinking* that is our everyday thinking, spontaneous and non-reflective thinking. It contains insights, prejudices, truth and errors, good and bad reasoning, misconceptions, and ideological rigidities. CT is *second-order thinking*: it reflects on, reconstructs, analyzes, and assesses the first-order thinking (Paul & Elder, 2002, p. 14). CT is "self-directed, self-disciplined, self-monitored, and self-corrective thinking. It presupposes assent to rigorous standards of excellence and is a careful command of their use. CT implies and empowers effective communication and problem-solving abilities" (Paul & Elder, 2002, p. 15).

5.4.3.   Critical Thinking as Questioning and Challenging

According to Collins (2001), CT is *questioning and challenging what you learn*. CT is letting students question and challenge what you teach. The best students are those who never quite believe their professors (Collins, 2001, p. 16).

CT does not reject the data merely because one does not like what the data imply. CT confronts the implications. CT does not reject the data merely because it rejects the theory one espouses. CT questions one's espoused theory. CT does not reject the data merely because it rejects one's assumptions and presuppositions. CT questions and challenges one's assumptions and presuppositions about oneself, the society, and the world.

CT does not reject the theory merely because the data do not confirm it. CT sifts the data and questions its reliability, validity, and objectivity or veracity. CT is prepared to revise the theory if the data justify it. CT does not generalize when there is no evidence to back the generalization.

5.4.4. *Critical Thinking as Spiritual Intelligence*

According to Stephen Covey (2004), the four magnificent parts of our nature consist of body, mind, heart, and spirit that have corresponding four capacities or intelligences: physical or body intelligence (PQ), mental intelligence (IQ), emotional intelligence (EQ), and spiritual intelligence (SQ).

PQ is something that happens within our body controlling the respiratory, circulatory, metabolic, nervous, and other vital systems. PQ constantly scans our environment, adjusts to it, destroys diseased cells, and fights for survival. PQ controls and coordinates the function of roughly seven trillion cells of our body with a mind-boggling level of biochemical and biophysical coordination that controls our reflexes, instincts, drives, passions, habits, manual skills, and body routines. PQ manages the entire system, much of it unconscious. IQ or mental intelligence is our ability to reason, analyze our reasons and reasoning, think abstractly, use language, visualize, conceptualize, theorize, and comprehend. EQ is one's self-knowledge, self-awareness, social sensitivity, empathy, and ability to communicate successfully with others. It is a sense of timing and social appropriateness, having the courage to acknowledge weaknesses, and express and respect differences. Abilities such as leadership, successful communications, and relationships are primarily a function of EQ than IQ (Covey, 2004, pp. 50–51).

SQ is today becoming mainstream in scientific inquiry, philosophical, and psychological discussion. SQ is the central and the most fundamental of all four intelligences because it becomes the source of guidance of the other three. SQ represents our drive for meaning and connection with the infinite. SQ is "thinking with your soul" (Wolman, 2001, p. 26) and represents the ancient and abiding human quest for connectedness with something larger and trust-worthier than our world and us. Unlike IQ that computers and robots have, and EQ that higher mammals possess, SQ is uniquely human and most fundamental. It stands for our quest for our longing for meaning, vision, and value; it allows us to dream and to strive; it underlies the things we believe in and hope for; it makes us human.

SQ relates to the whole reality and dimension that is bigger, more creative, more loving, more powerful, more visionary, wiser, and more mysterious — than the materialistic daily human existence. While IQ relates to becoming more knowledgeable, PQ to becoming healthier and strong, EQ relates to becoming more relational and sensitive, and SQ relates to becoming a person (see Rogers, 1961).

High IQ is not enough: brilliance is not necessarily humanizing. High PQ is not enough: athletes, boxers, and heavyweight fighters have it and it did not necessarily humanize them. High EQ is good but not sufficient: it

provides passion but not humanity. High IQ may provide vision, high PQ may imply discipline, and high EQ may mean passion. Adolph Hitler had all three but produced shockingly different result (Collins, 2001, p. 69). High IQ, EQ, and SQ are a great combination: Nelson Mandela, Martin Luther King, Jr., and a few others had them. High IQ, PQ, EQ, and SQ are a perfect combination. The prophets and patriarchs of the Old and New Testaments are good examples. A contemporary example is Mohandas Gandhi or Mother Teresa.

5.4.5.   *Critical Thinking as Valuing Resources Hierarchically*

In discussing information privacy, De George (1999, pp. 346−350) distinguishes between facts, data, information, knowledge, and understanding. These distinctions help in clarifying the language of executive ethics.

- A *fact* is defined as "a statement of the way the world is" (p. 348), the way of the world being independent of our knowledge.
- *Knowledge* can be of facts, known, or at times unknown but speculated.
- *Understanding* consists of knowledge that is integrated in some unified way and evaluated.
- *Information* is sometimes used to include data, facts, and knowledge, as when we speak of information systems.
- *Data*: Information that is entered or fed into the (computer) information system by way of codes as numbers, words, letters, or symbols.

Any individual may appropriate facts without depriving anyone else from them. In this sense, facts, information, and knowledge are infinitely shareable. However, the discovery of some facts, collecting and sorting them, often involves time and expense, and this provides a basis for claims of "intellectual property" in relation to some "facts" as proprietary, at least for a short time period. That is, while facts are common property and cannot be owned, data representing facts may be owned to the extent that one painstakingly collected and verified facts and entered such facts into the computer as classified and organized data. Data are not owned as tangible objects are owned, but printout of data can be owned to the extent one has collected, organized, and classified them and made available in a package form usable for a given target market.

Facts cannot be falsified, but data can be. Data may represent falsehood as well as facts. Such distinctions have legal implications. For instance, to what extent are mailing lists (collection of names, addresses, social security numbers, credit card numbers, and the like) stored and sorted in computers by an information broker are data that can be owned, and hence sold as a commodity? (These problems deal with the Ethics of Consumer Privacy; see, for example, Mascarenhas, Kesavan, & Bernacchi, 2003).

CT should distinguish between the following layers of intellectual resources (Mascarenhas, 2011):

- **Data/events**: Facts, figures, events, anecdotes, vignettes, information, narratives, descriptions, history, and statistics.
- **Information/meaning**: Analysis and interpretation of "data" in terms of finding trends, patterns and connections between "data," deriving inferences or conclusions from "data," and thus, seeking meaning and significance of "data."
- **Experience/knowledge**: Based on "analysis" and interpretation of data from various fields, disciplines, and domains, one derives intelligent (or empirically verifiable) propositions, hypotheses, connections, and conclusions and accordingly, builds theories, axioms, and paradigms. Knowledge can grow from theory that is verified by data (*deductive*: theory to data) or from data that ground theory (*inductive*: data to theory), and based on both theory and data to forecasting the future (*predictive*: from the past to the future).
- **Values/principles**: What are the lasting, enhancing, and humanizing values or principles in the data, and our analysis of and knowledge from it, which will make life better for all? What are also the temporal, degrading, and dehumanizing values that could make life worse for all?
- **Wisdom/freedom**: Based on data, experience, analysis, knowledge, and values, one finally derives or absorbs and cumulatively stores wisdom that discerns what is truth from error and falsehood, what is right from wrong, good from evil, just from unjust, ethical from the unethical, moral from the immoral, virtue from vice, grace from sin, life from death, lasting values from the ephemeral, and from earth to heaven, and from time to eternity.
- **Ethical and moral strategy**: Based on right discernment derived from wisdom of the previous stage, we should have the moral courage and pertinacity to speak and affirm the truth while denouncing falsehood, of doing what is right and avoiding what is wrong, of doing what is good, just, and fair and rejecting what is wrong, unjust, and unfair, of doing what is ethical and moral and desist from what is unethical and immoral, of pursuing virtue and resisting vice, of seeking grace and life as opposed to sin and death, and persistently seek perennial and universal values while downplaying the ephemeral and temporal, and thus, peacefully and collectively journey from earth to heaven, from time to eternity.

CT-based education should lead us from data/events to analysis that generates information and meaning, from information and meaning to experience and knowledge, from experience/knowledge to lasting values and universal principles, from values and principles to wisdom and freedom to pursue wisdom, and from wisdom to ethical and moral actions and outcomes.

Mere increase in knowledge does not imply a proportionate increase in human goodness, argues Orr (1991). The current information explosion in terms of increased data, numbers, words, paper, and the like do not imply an

increase in knowledge, wisdom, and virtue. Such learning does not make us better people, ethical people, especially if the knowledge of the good, of ecology, of land health, etc., is excluded from our curricula by default, if not by design. Our education may make us ignorant of things we must know to live well and sustainably on the earth.

Good CT is many sequential intellectual activities such as analyzing, conceptualizing, defining, examining, inferring, listening, questioning, reasoning and synthesizing, doing and reflecting, and growing and becoming. All these activities combined will help us to evaluate information and evaluate and refine our thought processes in a disciplined way. Thus, CT helps us to think more comprehensively and more able to identify and reject false ideas and ideologies, our flaws of thinking, our biases and prejudices of our culture and upbringing, our assumptions, presumptions, and presuppositions of cherished doctrines and beliefs, and thus to seek to be guided by true knowledge and evidence that fits with reality, and even refutes our cherished beliefs and dogmas.

CT is curiosity that widens our perspective and knowledge; it empowers us to do all the work required and to keep ourselves properly informed. CT is healthy skepticism that does not discriminate against people but doubts and suspends judgment in order to understand people better, to explain things better by testing, evidence, factual claims, and sound reasoning.

CT does not seek 100% clarity and certainty; it can handle uncertainty of knowledge, ambiguity of not-knowing, ambivalence of goals and objectives, and tolerate current levels of ignorance. CT waits for valid evidence, for evidence-based answers, and awaits further research from scientists and scholars. CT does not rely on only one solution to a problem, but investigates multiple problem formulations and multiple solutions, and finally, converges to one solution based on solid irrefutable evidence. Thus, CT avoids errors (types I, II, III, and IV) and flawed thinking. CT is prepared to make unavoidable mistakes and absorb risk so that we can learn from our mistakes. CT takes the risk of being wrong, is prepared to be wrong. If we are not prepared to be wrong, we are not prepared to be creative.

In general, type I error refers to rejecting a hypothesis, candidate, product, or a service when it is good or true; type II error relates to accepting a hypothesis, candidate, product, or a service when it is bad or false; type III error is to define a problem wrongly in terms of what is good or false in judging a hypothesis, candidate, or statement as good or false; and type IV error is finding a wrong solution to a right problem.

Type I is producer risk (e.g., a good but rejected product or market is a producer's loss); type II error is consumer risk; e.g., a wrong product or service accepted and sold can harm consumers. Type III and type IV errors are social risks or scientific flaws, as they affect consumers and producers, markets, and industries. Good CT seeks to reduce all four types of errors and their associated producer and consumer risks.

5.4.6.   *Critical Thinking as Building on Your Strengths*

Guided by the belief that good is the opposite of bad, or right the opposite of wrong, we have unduly focused on our faults and failures in building our strengths. For instance, doctors study diseases and its symptoms in order to learn about health; psychologists investigate sadness in exploring joy; marriage therapists study causes of divorce in identifying characteristics of a happy marriage; in schools and workplaces, we are advised to look into our faults and weaknesses assuming that we can build strengths by eliminating weaknesses. Buckingham and Clifton (2001) disagree with this approach. According to these authors, faults and failing deserve investigation, but they reveal little about strengths. Strengths have their own patterns. To excel in your chosen field and to find lasting satisfaction in doing so, you will need to understand your strengths and their unique patterns.

HR managers must not only accommodate the fact that each employee is different, they must capitalize on these differences. They must watch for clues to each employee's natural talents and then position and develop each employee so that his or her talents transform into bona fide strengths. By changing the way you select, measure, develop, and channel the careers of your people, your organization can be revolutionary and could build your entire enterprise around the strengths of each person. To spur high-margin growth and thereby increase their value, great organizations need only focus inward to find the wealth of unrealized capacity that resides in every single employee (Buckingham & Clifton, 2001, p. 6).

Most organizations are built on two flawed assumptions about people: (1) each person can learn to be competent in almost anything, and (2) each person's greatest room for growth is in his or her areas of greatest weakness. Thus, if everyone can learn to be competent in almost anything, those who have learned the most must be most valuable, and hence, by design, the organization gives the most prestige, respect, and promotions based on the skills or experiences they have acquired in the company. Hence, organizations spend more money in training people once they hire them than on selecting them properly in the first place. They spend most of their training time and money on trying to plug the gaps in employee's skills or competencies, calling the latter weaknesses as "areas of opportunity." In training the incompetent, organizations prescribe work styles by emphasizing on work rules, policies, procedures, and behavioral competencies. Most organizations take their employees' strengths for granted and focus on minimizing their weaknesses. Most HRD learning experiments focus on fixing each employee's weaknesses than building on their strengths. Most often, however, this is not human development, but just *damage control*. Damage control is a poor strategy for elevating either the employee or the organization to world-class performance.

Buckingham and Clifton (2001, p. 8) offer alternative counter-assumptions: (1) each person's talents are enduring and unique, and (2) each person's greatest room for growth is in the areas of his or her greatest strength. These two assumptions should guide HR managers to select, develop, measure, and

channel the strengths and careers of their people. These assumptions should explain why great managers are careful to look for talent in every role, why they focus performance on outcomes than on work styles, why they treat each person differently, and finally, why they spend most time with their best people.

Hence, in this context, a CT exercise should start with yourself: What are my strengths? How can I capitalize on them? How can I combine them? What are my most powerful combinations? Where do they take me? The real tragedy of life is not that each of us does not have enough strengths but that we fail to use the ones we have. Benjamin Franklin called wasted strengths "sundials in the shade." Hence, identify your sundials in the shade. Look inside yourself and identify your strongest strengths, reinforce them by practice, learning and training, and then carve out a role that draws on these strengths everyday. When you do, you will be more productive, more fulfilled, and more successful (Buckingham & Clifton, 2001, p. 21).

Tiger Woods had a different strength − his length with his woods and his irons and tremendous accuracy in his putting. His ability to chip out of a bunker was no good; he did not need it either; and much less did he cultivate it. Instead, he deliberately played to his strengths. He loved what he did because he deliberately worked on his strengths.

Bill Gates's strength was at taking information technology (IT) inventions to the market and transforming them into user-friendly applications and marketing them effectively. His ability to maintain and build an enterprise in the face of legal and commercial assault was his weakness − he let Steve Ballmer handle that.

Talents, knowledge, and skills are raw materials to building strengths, but most important among these are talents. Talents are innate, while knowledge and skills can be learned and cultivated. You can never possess strengths (e.g., salesmanship, closing a sale) without requisite talents (e.g., gift of persuasion, talent for negotiation). The key to building your strengths is to identify your dominant talents and then refine them with knowledge and skills. Skills determine if you can do something, whereas talents reveal how well and how often you do it.

5.5. Part 2: Some Theories of Critical Thinking

CT is a nascent science and tradition. Part 1 has suggested various approaches to CT. We now present some doctrines that could be used as emerging theories of CT.

5.5.1. Critical Thinking and Defensive Routines

(See Peter Senge, 2006, *The Fifth Discipline*, pp. 232−240)

For more than 40 years, Chris Argyris and his colleagues have studied the dilemma why bright capable managers often fail to learn effectively in management teams. Their work suggests that success of team learning and productivity is dependent upon how a manager faces conflict and deals with the defensiveness

that invariably surrounds conflict. Argyris (1985) coined the concept in this regard and proposed the theory of "Defensive Routines" that can help us further hone our CT skills. Writes Argyris, "We are programmed to create defensive routines, and cover them up with further defensive routines. […] This programming occurs early in life."

Defensive routines are mental models that express our entrenched habits of thinking, deciding, and acting that we use to protect ourselves from the embarrassment and threat that come with exposing our thinking. Defensive routines are our deepest assumptions that not only defend us against pain but also keep us from learning about the causes of pain. The source of our defensive routines is the fear of exposing the thinking that lies behind our views. "Defensive reasoning" protects us from learning about the validity of our reasoning. We often feel that exposing our thinking is very threatening because we are afraid that people will find flaws and errors in it. This perceived threat from exposing our thinking starts early in life at home and is steadily reinforced in schools, colleges, and the workplace. Other things being equal, most of our defensive routines surround our thinking about religion, caste, color, creed, races, ethnicity, gender and age discrimination, cultural enclaves, and national exclusivity.

Top executives or senior managers, who pride themselves as skilled communicators and risk takers, may be, in fact, so brilliant at articulating their vision that they intimidate everyone around them. Consequently, their subordinates rarely challenge their views publicly. Further, people feel afraid to express their own views and opinions around them. Such CEOs may not see their own entrenchment and forcefulness as a defensive strategy, but they function in exactly that way. This strategy has become the CEOs' most effective defensive routine. Presumably, the CEOs hoped to provoke others into expressing their thoughts, but their overbearing behavior prevented them from doing so, thereby further protecting their views from challenge.

Defensive routines are a response to a problem. In general, a problem is a need to learn, arising from the "learning gap" between what a company knows and what the company should know. The "fundamental solution" is objective inquiry that eventually generates new understanding about the problem and new behavior − that is, organizational learning. However, the need for learning also creates a threat, which, in turn, leads to "symptomatic solutions" or "quick-fix band-aid solutions" prompted by defensive routines that apparently reduce the learning gap by reducing perceived need for learning.

Problems caused by defensive routines compound in organizations where to have incomplete or faulty understanding is a sign of weakness or incompetence. Deep within the mental models of managers in many organizations is the belief that managers must know what is going on. All managers are expected to know the causes of problems within their organization. Some managers respond to this expectation by internalizing an air of confidence that makes their subordinates believe they know the right answers to the most important problems in their division or company. Often, to protect their air of confidence, they will close themselves to alternative views, become rigid, and make themselves un-influenceable, even though deep down they may be fully conscious of the

uncertainty in their understanding of the problems and the solutions. Alternatively, to maintain a façade of confidence they may even obscure their ignorance. In short, managers who must take on the burden of having to know the answers become highly skilled in their defensive routines. They play political games in their organizations. Defensive routines are like diseases − the top executives carry them, and the organizations are the hosts. Soon the organizations are infected, and they too become carriers.

To illustrate how defensive routines function within an organization, consider the case of *ATP Products*, a young division of an innovative and highly decentralized company. Tim Tabor, 33, was the divisional president, deeply committed to the corporate values of freedom and local autonomy. He believed strongly in the state-of-the-art technology products (e.g., new printed circuit boards) of ATP, rallied tremendous support from his subordinates, who in turn shared Tim's enthusiasm for their prospects. Divisional bookings grew rapidly − 30% to 50% each year until sales reached US$50 million in 1994. Accordingly, ATP doubled its capacity. In 1995, with the disastrous downturn in the minicomputer industry, ATP experienced a 50% shortfall on projected bookings. The industry did not bounce back in 1996. Tim Tabor was fired from division president to an ordinary engineering manager.

What happened? Tim's locked-in strategy was flawed owing to several defensive routines. His team had set aggressive growth targets, in part, to please the top management; he strongly believed in the product without letting his beliefs challenged; meeting these targets, he put too much pressure on his subordinates that they had no time to question what they were doing, and they relied on a few major customers upon whom they became very dependent. When the business of these customers failed, ATP was doomed.

Why did not the top management at ATP sanction a strategy that was so vulnerable, and force Tim to diversify its customer base? The top management had its own defensive routines. Although the CEO had recognized the problem of the narrow customer base, he did not want to violate the corporation's decentralized policy or interfere with the forceful strategy of the young ATP division president. Moreover, Tim had questions that he was reluctant to discuss with his superiors, as he did not want to let them down, nor was he prepared to face criticism from them. Hence, there were defensive routines throughout the organization that did not enable free inquiry and reflection.

The more effective defensive routines are: the more effectively do they cover up underlying problems, the less effectively do you face the problems, and the worse the problems tend to become. The paradox, writes Argyris, is that when defensive routines succeed in preventing immediate pain they also prevent us from learning how to reduce what causes pain in the first place. Defensive routines are "self-sealing" − they obscure their own existence. If you cannot easily identify or state your defensive routines, you do not have leverage for reducing them either.

One of the most useful skills of a learning team is the ability to recognize when we are not reflecting on our own assumptions, when we are not objectively inquiring into each other's thinking, and when we are not exposing our thinking

in a way that encourages others to inquire into it. This is CT. It is to dismantle our defensive routines and defensive reasoning and have everything exposed for checks and balances.

CT enables us to acknowledge our own defensiveness without provoking more defensiveness. Often, the stronger the defensiveness, the more important is the issue or the problem around which we defend or protect our views. If these views are made transparent, they will provide windows onto each other's thinking. It is not the absence of defensiveness that characterizes learning teams, but the way defensiveness is faced. A team committed to learning must be committed to tell the truth about our thinking and about the assumptions underlying the forceful strategies we propose. To see reality of the markets more clearly, we must also assess and see our strengths for obscuring reality.

5.5.2.   *Critical Thinking Applied to Human Resource Management*

The most important asset in a company is the right people — the ones who provide the team and customer service behavior the organization needs. Employees represent a company's first market. If companies are not investing in and listening to their employees, as well as their customers, they are probably missing opportunities to create competitive advantage (Jones, 2000).

High turnover is a major problem that can be addressed through trust. If employees do not trust their organization to provide equitable pay, training, and advancement, they will not stay long enough to become effective and affective team members. When a company focuses on creating quality for employees and competence in employees, they can be empowered to create happy customers. And, happy customers buy more (Jones, 2000).

Human resource planning is an essential part of successful customer service, because to a customer anyone working for an organization represents the organization. Each employee is a potential customer service representative (Jones, 2000), and salespersons, particularly, are frontline company ambassadors (Sirdeshmukh et al., 2002). Customers truly enjoy having a well-trained, knowledgeable person to deal with their concerns and orders. An organization needs to know how it impresses on its customers who contact it. Much of the impression would depend upon how the organization's employees interact with the customers. Value-chain involvement enables this knowledge.

Three philosophies underlie personnel management:

(1) **Organizational theory**: This theory believes that human needs are either so irrational or so varied and adjustable to specific situations that the major function of personnel management is to be pragmatic as occasion demands. Hence, if jobs are organized and structured in terms of clarity of job goals and objectives, favorable worker attitudes will follow.

(2) **Industrial engineering**: Humankind is mechanistically inclined and economically motivated and human needs are best met by attuning the individual to the most efficient work process. Personnel managers should therefore concoct the most appropriate incentive systems and design specific working

conditions that maximally utilize the human machine, and worker attitudes will follow.

(3) ***Behavioral science***: Mankind is basically social, group-oriented. Hence, personnel managers should work on group sentiments, organizational, psychological, and social culture and climate. Personnel managers should focus on human values and human relations, and these in turn will generate healthy employee attitudes.

All three theories duly applied should motivate employees as evidenced by a significant reduction in absenteeism, errors, and violation of safety rules, strikes, restriction of output, higher wages, greater fringe benefits, and labor turnover.

Herzberg (1968) motivation-hygiene theory works on the same principle of industrial engineering but for opposite goals. Rather than rationalizing work to increase efficiency, his theory suggests that work be enriched to bring about effective utilization of employees. The theory advocates a systematic manipulation of the motivation factors for motivating the employees.

Applying CT to the above theories of HRM, we may ask the questions as listed in Table 5.2. Changing the way people work means changing the way they behave. Changing behavior requires changing thinking, feeling, and communicating. That is, changing the head, the heart, and the hands. Without adjustments in the way we think, feel, and act, nothing really changes. Questions that need attention under each body-part arena are:

- **Head**: Where are we? What brought us here? Where are we going? What change of behavior can get us there?
- **Heart**: Why are we here? Why do we want to go there? Why must we change? What is in it for me? Am I capable of change? Do I have the heart and the will to change?
- **Hands**: What do I need to do? What skills should I train myself in? What behavior changes do I require? Do I have the energy and the team support to acquire those behavior changes and skills?

Any strategic change requires energy, discipline, and time. A successful change process passes through three stages:

- **Coming to grips with the problem**: Do the people involved perceive and acknowledge the problem? Do they still resist or deny it? Have people's mindsets changed? Do they intellectually recognize the need for change? Do they have a sense of how their organization must respond to the problem, and the change the problem demands?
- **Working it through**: Are people intensely and honestly working to accept and internalize the required change and its implications? Have the things that must change been well communicated? How do people feel about the changes? Are they adequately ready in mind, heart, and hands for the change?

Table 5.2: Critical Questions for Managing Required Change in Organizations.

Strategy Implementation Stages	Strategic Arenas		
	The Head: One's Mindset	**The Heart: One's Emotions**	**The Hands: One's Ergonomics**
Coming to grips with the problem	• Do the people involved perceive and acknowledge the problem? • Have people's mindsets changed? • Do they intellectually recognize the need for change?	• Do they still resist or deny the problem and the need for change? • Do they have a sense how their organization must respond to the problem and the change it demands?	• Where are we going? • Why are we going there? • What change of behavior can get us there? • Do we have the energy to reach there?
Working through the problem and change	• Are people intensely and honestly working to accept and internalize the required change and its implications? • Have the things that must change been well communicated?	• Are people wholeheartedly facing the problem in all its dimensions? • How do people feel about the changes? • Are they adequately ready in mind, heart, and hands for the change?	• Is there a lead team to help them work through the problem? • Has the lead team changed enough to demonstrate to others the need for change? • Are we ready to cooperate with the lead team to change ourselves in the required direction?
Maintaining momentum through strategic change	• Is the organization committed to bring about this change? • Is the organization keeping the required pace of change?	• Is the management committing its best resources to bring about change? • Is the organization ready to incorporate the change into its management practice, climate, and culture?	• How do we know that we are really changing? • How do we measure the change in behavior and outcome? • How do we know we have really changed for the better?

- **Maintaining momentum**: Is the organization committed to bring about this change and support it with all its resources? Is the organization keeping the required pace of change? Is the organization ready to incorporate the change into its management practice, climate, and culture?

How do I know that my team, the organization, and I are really changing? Is there an appreciable difference between the "before" and the "after"? What is this difference? Is this the real change we want? Measuring change is a powerful change management technique. Implementing strategic change requires that people learn new ways of thinking, feeling, and behaving. We know that people learn and change much more efficiently when they receive fair and objective feedback on how they are doing.

Table 5.2 lists the critical questions when the three body-part arenas are crosschecked against the three stages of implementing change. One can develop a scorecard that measures progressive change in response to the relevant questions raised in each of the nine cells of Table 5.2. This is a *change process tracking scorecard* and not an outcome realization scorecard. The change implementation scorecard can diagnose problems that arise while the people learn (head), internalize learning (heart) and live, witness, and communicate (hands) learning.

5.6. Critical Thinking as Identifying and Combating Biases, Prejudices, and Presumptions in Business Thinking

A quick analysis of all these definitions and approaches to CT reveals that CT identifies biases, prejudices, and presumptions in our thinking and rectifies them by replacing them with strong normative imperatives. Hence, our approach to CT is to identify typical biases, prejudices, presumptions, and presuppositions inherent in the Capitalist Free Enterprise System (CFES) that grounds our business enterprise, business schools, the MBA, and the PGDBM programs and to help executives and students to identify them, analyze them, and correct them. In the following sections, we analyze CFES from this perspective.

According to the *Webster's New World College Dictionary* (2000):

- A *bias* is a mental leaning or inclination, partially bent. From a statistical viewpoint, a bias is any systematic error that contributes to the difference between statistical values in a population and a sample drawn from it. Hence, we define bias as the systematic leaning of one's thinking that deviates from the norm.
- A *prejudice* implies a judgment or opinion formed before the facts are known. It is a preconceived idea, mostly unfavorable, marked by a suspicion, intolerance, or irrational hatred for other races, creeds, and occupations.
- An *assumption* is a more basic act of assuming a fact, property, or event for granted without critically assessing its accuracy and veracity, reliability, and validity.

- A *presumption* is a subset of assumption and implies taking something for granted or unjustifiably accepting it as true, usually on the basis of improper evidence.
- A *supposition* is the act of assuming something to be true for the sake of an argument or to illustrate a proof. It is regarding something as true without actual knowledge, hence, often tantamount to conjecture, guessing or mere imagination. In this sense, it is a subset of assumption.
- A *presupposition* is an act or statement of supposing or assuming beforehand. It also means to require or imply as a preceding condition for something.

All of the above, biases, prejudices, assumptions and presumptions, and suppositions and presuppositions can be wrong inclinations or systematic errors in our thinking. CT intends to unearth them, confront them, and rectify them or eliminate them.

Based on the discussions thus far, Table 5.3 captures some major themes of the capitalist business system where unhealthy biases, prejudices, and presumptions can arise and contaminate human thinking. To counteract these wrong drifts of thinking, we need some strong human imperatives, some of which are listed in the last column of Table 5.3. Table 5.3 examines the biases, prejudices, presumptions, and presuppositions in our business education and learning.

According to Godel's theorem (Hofstadler, 1979), as a formal system, no theory can be both complete and consistent. Consistency is the condition under which symbols acquire meanings; consistency seeks to derive true statements. Completeness, on the other hand, is the confirmation of these meanings; completeness seeks all true statements. Formal theory systems have to balance inconsistency and incompleteness. No theory is intended to answer all questions. Theories that seek too much comprehensiveness can become so overextended as to become ambiguous and complicated. As a social science, marketing theory can best develop through layered assertions into an integral theory. Just as a collection of sentences does not necessarily make a story, nor can a collection of assertions, even when verified, necessarily becomes a theory (Sutton & Staw, 1995). CT accepts Godel's theorem and its practical realism in formulating a comprehensive business turnaround management theory.

5.6.1. Legal, Ethical, and Moral Issues of GAIL (Case 5.1)

With the advent of capitalism, environment ethics has become somewhat skewed toward the viewpoint of corporate anthropocentrism. The GAIL case is a classic example where the local interest of life and safety were not considered while corporate goals got undue prominence.

- **Legal**: Agreed that the Laws of the Land were not technically and strictly violated, there are other ethical and moral obligations such as the duty and right of regular and quality maintenance of the pipeline and its environment, especially when GAIL was alerted by several complaints of the locals.

Table 5.3: A Set of Biases, Prejudices, Presumptions, and Human Imperatives.

Thinking Base	Biases	Prejudices	Presumptions	Value Imperatives
Wealth	Wealth is limitless possessions of the few. Wealth is individual aggrandizement	We are the world. We are the superpower. The world is for USA	America is or should be the wealthiest and most powerful nation in the world. Wealth is power	The wealth of the nations is the prosperity of all people. The primacy of human dignity is the condition of all progress
Profit	Profitability is the necessary condition for growth	Profits of one corporation are the losses of its competitor (the win−lose prejudice)	Profit is the bottom line of all business. High buying power and high market demand assure profitability	Shared profitability is the engine of growth. The poor can be profitable too (CK Prahalad)
Productivity	The primacy of productivity is a supreme principle. Humans are mere factors of production	Productivity is the increased efficiency of all resources	Industrial concentration spurs productivity	All human beings are ends in themselves and cannot be used for the ends of others
Scale	Big is better	Limitless growth is corporate prosperity	Larger corporations are more productive than small ones	Small is beautiful
Control	Mastery over nature is critical. Technology is conquest of nature	Mankind will always achieve a technical breakthrough into all the problems that arise in its technical environment	Human life and the life of our environment will always adjust to each other	Harmony with nature is growth. Respect for nature is civilization

Research and experimentation	We ought not to create a new humanity that intends to solve all the problems of nature	Manipulation of the world and its resources (which includes humans) for the betterment and survival of mankind is not only a human right and duty, but is essential for a better understanding and realization of human destiny	Science and technology in themselves are neutral (a moral or transethical) and must be freed from any ethical or moral impositions of a few, lest humanity's progress be impeded	Our commitment to quality life and moral values should impose limits on human inquiry on the one hand, and on technological progress on the other hand
Globalization	The mobility of employment, capital, produce, and technology across countries and trade regions is critical for globalization	Respect for the dignity and interests of all its stakeholders are fundamental to globalization	Current international laws and market forces are necessary but insufficient guides for global business conduct	Shared values, including a commitment to shared prosperity, are as important for a global community as for communities of smaller scale
Responsibility	Our responsibility is for ourselves	Compensating peoples and nations for the harm that our global greed and actions cause is global justice	The only responsibility of corporations is to make profits	Accepting global responsibility for the politics and actions of business is imperative
Rights and duties	Limitless consumption is our birthright	Individual claims of rights are more important than claims of duties toward others	Global social and economic betterment is the duty of all	Scarce resource conservation is our global duty
Happiness	Limitless possession is supreme human happiness	Happiness is the fulfillment of all our wants and desires	Money is the root of all unhappiness	Happiness doubles when shared

- **Ethical issues**: No transfer of benefits to the locals except for employment of a few when the pipeline was routed through their village properties. Also no proactive responsibility was designed and executed even when it was known that explosive gas-bearing pipelines would jeopardize surrounding villages and their livelihoods.
- **Moral**: The intention of ignoring the complaints of the poor smacks of power and might of big corporations. Not taking responsibility for the well-being of the local villages is a serious omission. Narrowing duty to mere law compliance regarding protecting pipes, and not considering it as a true safety issue, is lack of CT. Mere cost-containment and growth-expansion strategies at the expense of locals are exclusive and not inclusive growth strategies.

  Hence, problem resolution alternatives:

- Giving statutory powers to OISD.
- Merging Petroleum and Explosive Safety Organisation (PESO) to OISD.
- Increasing the accountability of industries to the communities they impact.
- Setting up quick action response teams for natural and man-made disasters.
- Strong investigating and complaints body to address local concerns.
- Awareness on safety and hazards to the locals living close to oil and petroleum set-ups.
- Triple bottom should be implemented: ecology, safety, and profitability. Workplace and operational safety should be top priorities coupled with taking care of the community interests.
- Consequences for all internal and external stakeholders should be foreseen and avoided.

The case of GAIL pipeline blast is clearly a question of moral lapse. Every organization has certain values that it needs to prioritize because its presence in the ecology itself is an intervention. Value is something which characterizes the way we behave. The very fact that the GAIL, OSID, PESO, and ONGC authorities treated the matter as a mere compliance issue and not a village safety issue made them overlook the very nature of the problem that jeopardized the lives of the powerless locals.

Analysis of harmful consequences:

- Lack of statutory obligations and regulations by government may partially explain lack luster behavior of GAIL, ONGC, PESO, and OSID regarding the GAIL pipeline consequences.
- Mostly focused on short-term cost-containment and marginal maintenance strategies in relation to the pipelines, the officials did not plan nor try to check the safety or replace the pipelines wherever required.
- Possibly, they did not foresee the impact any possible mishap could cause to the people living in the vicinity and how it would negatively impact the reputation of their public institutions.

- Precautionary steps and proper maintenance could have averted the whole situation. Poor maintenance often leads to future breakdowns. Hazardous systems if not managed with due care can be very detrimental to human lives.
- It is a collective responsibility of GAIL, ONGC, PESO, and OSID to detect and preempt disasters, failing which to own and compensate for the fatal consequences of the pipeline tragedy.

5.6.2. *Ethical Analysis of Consequences*

Teleological analysis: The GAIL pipeline service strategy is a moral action if it produced decidedly more benefits than costs to the largest number of stakeholders. Judged by the manifold harmful consequences to the villagers in terms of deaths, injuries, and environmental degradation, the unsupervised and unchecked GAIL pipeline project fails to be ethical and moral on teleological grounds. The final outcome was a huge systems breakdown or man-made disaster for the villagers, while pipeline project continues to be beneficial to the industrial units it was serving.

Deontological analysis: The GAIL pipeline service strategy is a moral action if it upholds the rights of the powerless much more than it upholds the rights of the powerful across the largest number of stakeholders. Judged by the violated rights of life, community life, safety, village property, village ecology, and the like in terms of harmful consequences of deaths, injuries, and environmental degradation, and disproportionate number of rights of GAIL and its industrial clients in Andhra Pradesh upheld, the GAIL pipeline strategy, unsupervised and unchecked, fails to be ethical and moral on deontological grounds. It is the right of the industrial clients to get essential supplies of Compressed Natural Gas (CNG) but that does not mean that they can sacrifice the safety and security of others. It is gross negligence of duties by the authority. Lack of responsibility of GAIL Authorities and the government led to deaths and loss of many who were not directly related to the whole business. The gainers did not do much to alleviate the lot of those who suffered untold damages.

Distributive justice-based analysis: Regardless of the nature and magnitude of the benefits and costs, rights and duties of the GAIL pipeline tragedy, the GAIL service strategy is a moral action if it distributes benefits and costs, rights and duties equitably across the largest number of internal and external stakeholders. Judged by the disproportionately high costs (including deaths, injuries, and environmental degradation) and duties (of safeguarding life, safety, property, ecology and livelihood of Nagarjuna) violated of a very great number in Nagarjuna village, and the disproportionately high benefits realized and many rights upheld of GAIL and its 37 industrial clients in Andhra Pradesh, the GAIL pipeline enterprise grossly violated distributive justice principles. Though the pipeline supplied essential CNG used for transportation in the surrounding cities including Hyderabad, and helped thereby GAIL earn profits and growth, it does not

justify the miseries of families of several people who died and others who suffered injuries.

Corrective justice-based analysis: Regardless of the nature, magnitude, and distribution of the benefits and costs, and rights and duties of the GAIL pipeline tragedy, the GAIL service strategy is a moral action if it set up just processes and procedures to correct the existing violations of rights and duties, and unjust distribution of costs and benefits in relation to the largest numbers of internal and external stakeholders. Judged by the lack of any corrective processes and procedures, disproportionately high costs (including deaths, injuries, and environmental degradation) and duties (of safeguarding life, safety, property, ecology, and livelihood of Nagarjuna) violated of a very great number in Nagarjuna village, and the disproportionately high benefits realized and many rights upheld of GAIL and its 37 industrial clients in Andhra Pradesh, the GAIL pipeline enterprise grossly violated corrective justice principles.

First corrective step to take in this case is to stop using the pipeline any further until it has passed all health integrity checks and maintenance work. Lives can never be returned, but at least the government and GAIL authorities should take responsibility of the family members of the deceased by compensating them and providing them with livelihood. Precautionary steps and proper maintenance could have averted the whole situation. Poor maintenance always leads to final breakdown one day or the other. Hazardous things if not handled with enough care can be very detrimental to human lives. Second, for the disabled and injured, they should provide best medical and health care so that they can recover quickly and help them to get employment, either through jobs or through skill trainings. Third, all victims should be more than adequately compensated. However, instead of distributing huge compensation to the victims, if government and GAIL authorities had used the same money for maintenance and pipeline health integrity checks, we would not have to sacrifice 21 lives and accept sufferings of so many. Fourth, for all losses to crops and houses and other public utilities, they should rebuild all the facilities and houses of the people, help them rehabilitate, and also compensate at market rate all their losses.

As part of corrective justice procedures, government should form a high-priority committee to check all pipelines laid across the country immediately within next couple of months and the ones which are not fit should be replaced and repaired as necessary. Petroleum and Natural Gas Regulatory Board of India should come up with stringent guidelines for safety and security and penalize any corporation or firm whether public or private for any negligence in this regard. Officials handling such sensitive operations which can cause havoc if neglected should be periodically sensitized about all safety measures. More invigilation of pipelines and general awareness among people staying in areas where the pipeline is laid is also very important. Proper safety message boards should be installed at the major junctions all along the pipeline so as to make people aware of the risks in those areas and what are the preventive measures.

Virtue ethics-based analysis: Virtue ethics is a framework that focuses on the character of the moral agent rather than on the rightness of an action. In considering human relationships, emotional sensitivities, and motivations that are unique to human society, virtue ethics provides a fuller ethical analysis and encourages more flexible and creative solutions than deontological or consequentialist teleological analysis. In order to do something, we must first perceive that an action is necessary, and often, mere cost-benefits analysis (teleology), or rights-duty analysis (deontology) may not trigger quick action. We must observe what is going on and study a crisis situation like the GAIL pipeline disaster from a person-based ethical and moral perspective such as virtue ethics. Emotional reactions make us sensitive to particular circumstances, and virtue-based sensitivities illuminate our perceptions. It is possible to perceive a situation dispassionately but we would then have an incomplete appreciation of the circumstances. Thus, perception and affect are closely intertwined in informing our choices. Virtues of honesty, integrity, due care, and compassion would have precipitated proactive actions that were remedial, preemptive, and reactive.

Trust ethics-based analysis: Among virtues, one of paramount importance is the executive virtue of trust and the practice of building trusting relations among critical stakeholders. Trust has both intrinsic and instrumental value. Trust is intrinsically important because it is a core characteristic that affects the emotional and interpersonal aspects of owner/stakeholder relationship. As an instrumental value, trust is widely believed to be essential for effective emotional encounters. Sadly, in this situation, the executives did not pay heed to or trust the complaints of the local residents which led to the tragedy. The village of Nagarjuna might have gradually lost its trust in GAIL, OISD, PESO, and ONGC owing to their inactions, insensitivities to their concerns, and their general malaise in dealing with their GAIL pipeline-related problems and concerns. Lack of mutual trust and trusting relations can precipitate tragedy; the converse is also true.

5.7.   Concluding Remarks

To summarize the main imperatives of CT, a turnaround executive should be a critic of one's own thinking and test the validity and reliability of one's turnaround thinking and solution against the following heuristics:

- Does this thinking and your "best solution" make a better sense of the world? (Chaffee, 1988).
- Does the best solution help me to be unbiased and unprejudiced in my thinking? (Paul & Elder, 2002).
- Does it help me to understand the assumptions and presuppositions behind this thinking? (Collins, 2001; Collins & Porras, 1989).
- Does it help me to appreciate the positive and normative content in this thinking? (Hunt, 1991, 2002).

- Does it inspire me with spiritual meaning, vision, value, and motivation to reach out to others? (Covey, 1989).
- Does it help me to rise beyond data, information, and knowledge to lasting values and wisdom? Does it empower me to be a servant leader for others? (Kahl & Donelan, 2004).

A hundred years from now, the economic system may be very different. Technology may be unrecognizable; education and consumption levels will be far greater. New information and media technologies will continuously modify human behavior. Will this be still a capitalist system? The present imbalance between a scarce supply of capital and employment opportunity and an abundant supply of labor is producing a substantial shift of income growth from wages to profits. The modern corporation has shown considerable ability to shift incremental taxes forward to customers through higher prices, shift them backward to workers through lower wages, or shift them to Washington by finding new loopholes to avoid taxes.