LESSON 1

Critical Analysis

Assigned Reading

Selected assigned readings can be found on the BUSI 460 Course Resources website, under "Online Readings".

1. UBC Real Estate Division. 2011. BUSI 460 Course Workbook. Vancouver: UBC Real Estate Division. Lesson 1: Critical Analysis


Recommended Reading

Selected recommended readings can be found on the BUSI 460 Course Resources website, under "Online Readings".


READING TIP

The Assigned Readings are required for the course, to complete your assignments and major project. The Recommended Readings are recommendations for students who want more background on lesson concepts, should you wish to do further research on your own. The Recommended Readings are provided online, if available, but otherwise are not provided as a part of the course materials.
Learning Objectives

After completing this lesson, students should be able to:

1. describe the key concepts of creative critical thinking in the context of the real estate profession;
2. identify the key biases that affect the decision making process and recognize their own biases;
3. apply the basic tools of disciplined thinking in real estate practice;
4. recognize mental models (your own and others) and their importance to creative critical thinking; and
5. enhance client service by helping clients make the best decisions in their business context.

Instructor's Comments

Beyond Traditional Roles — Serving Client Needs

One of the salient traits of a truly creative person is that he sees problems where others don’t, and it is this that so often makes him unpopular….A constantly questioning attitude is not an easy one to live with, yet in its absence many problems will not be sensed, and consequently creative solutions of them will not be achieved. It has been said of Einstein that a part of his genius, like that of all great creative thinkers, was his inability to understand the obvious.

People involved in acquiring, operating and managing, or disposing of real estate know that these activities involve complex and unpredictable interactions. Students contemplating careers in real estate need to consider how practitioners think about and solve decision-making problems. Effective application of critical analysis can help students clarify their roles in satisfying client needs.

Many real estate professionals in the past, in particular appraisers, have traditionally served their clients in the role of "experts". Real estate consultants tend to operate in a wider capacity, more in the role of "advisors", rather than experts or technicians. For example, an "expert" might form judgments in the information gathering stage of an assignment, when they feel they have fallen upon the "right" answer. In contrast, the consultant's role is to help the client "be right" and in many cases guide the client through the subsequent decisions to be made. That is, "to help the client make good decisions and take the appropriate actions resulting from those decisions." Whether acting as expert or advisor, the practitioner needs to clarify that role relative to the client's need, use technical ability effectively, and apply critical analysis skills to objectively help clients enhance their competitive positions, gain efficiencies, and become more profitable.

The Appraisal Institute of Canada (AIC), as the main sponsor of this course, has targeted critical thinking skills as a key addition to the real estate professional’s portfolio. The core objective of this course is to provide real estate professionals with a set of tools to allow them to provide real estate advisory services beyond simple point-in-time valuation, property management, or other limited-focus specialities. AIC envisions a membership of professionals with the expertise and integrity to provide a broad range of services related to the principles of value in real estate: leading projects, initiatives, and organizations; providing clients with support and strategic advice; and helping make sound decisions regarding real estate and related property.

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In this course, students will learn to apply creative critical thinking skills to help their clients and employers make real estate decisions. We can no longer afford an attitude, like that of IBM in the 1980s, suggesting that "if the client doesn't like our appraisal solution, then they have the wrong problem." An expanded skill set is necessary to satisfy client needs in an increasingly complex business environment.

The following examples illustrate areas in which real estate consultants might expect to provide advisory services:

- **Valuation services** that might range from single property appraisals to evaluating large and diverse portfolios, and completion of market analyses and feasibility studies in support of property development and investment decisions.

- **Financial advisory services** that might involve single asset or portfolio acquisitions, dispositions, or financing.

- **Financial modeling services** including the analysis of assets, development opportunities, and new business opportunities.

- **Due diligence activities** through undertaking market surveys, site inspections, operating statement analysis, normalization of income statements, and lease abstracts.

- **Litigation support services** including valuation consulting, producing expert reports, and credible testimony.

### Meta-Skills

Professor Stan Hamilton, of the University of British Columbia, challenged the valuation profession and fellow educators in his 2003 paper, entitled "The Skill Set Needed to Survive", presented to World Valuation Congress X at Cambridge University. Hamilton suggested that twenty-first century real estate valuation education programs still do not fully address a gap in the development of "meta-skills". Meta-skills represent the "big picture" competencies that overlay the development of all applied technical skills. Hamilton outlines these meta-skills as follows:

- Effectively communicate with clients and project team members.
- Think strategically and critically.
- Carefully define problems.
- Develop and support effective arguments.
- Conduct effective research.
- Select and apply the most appropriate analytical methodologies to synthesize best conclusions that enhance a client’s real estate decision analysis.
- Act as a change agent.

According to Hamilton, "some of these skills are simply missing or taken for granted in valuation programs. Teamwork, global thinking, change agent, strategic thinker and critical analyst receive far less attention, yet their importance grows as the valuation profession changes." Fostering the critical thinking and research meta-skills are key objectives of this course.

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The "Real Estate Entrepreneur"

Critical thinking is one of the traits that distinguish a professional from a technician. This is evident in real property valuation, an industry in a long-term transition into professionalism.

The late Professor James A. Graaskamp, of the University of Wisconsin-Madison, described this vividly. Recognized as one of America’s foremost real estate scholars, Dr. Graaskamp wrote:

*Real estate should be taught as a process of dynamic interactions rather than functional and historical facts. The result should be a real estate entrepreneur with the creativity of Leonardo da Vinci, the sensitivity for the natural world of John Muir, and the political humanity with cash management for profit of James Rouse.*

In this lesson, we hope to foster the development of skill sets and the understanding of their application, ultimately leading to fostering growth towards Graaskamp’s "real estate entrepreneur".

Creative Critical Thinking and BUSI 460

Building on Hamilton’s survival skill set and the concept of Graaskamp’s "real estate entrepreneur", our specific goals for this course will be to enable the participant to:

- Critically analyze the context for real estate problems, creating an effective foundation for further in-depth analysis of issues.
- Apply critical thinking skills to real estate problems using a decision-making context.
- Effectively apply traditional and online research skills.
- Critique and interpret market analyses and forecasts prepared by others.
- Accurately diagnose complex real estate problems.
- Identify and support potential real estate solutions, goals, and actions which are objective and comprehensive, facilitating sound decision making by clients.
- Synthesize complex analyses and articulate findings in thoughtful reports.
- Develop the "meta-skills" necessary for success in the real estate service supply chain.

Lesson 1 establishes a creative critical thinking foundation, offering a solid starting point for further investigation of real estate investment decisions. In this lesson, we will examine the structures inherent in our thinking, and consider how to develop essential intellectual traits necessary for continued self-improvement. A critical thinking foundation in a real estate context might lead to specific questions such as the following:

1. What is the best location for a given project?
2. What is the best use (e.g., residential, retail/service, etc.) and size for a given parcel of land?
3. What is the best strategy for a given project at a specific location (e.g., hold vs. build vs. renovate; lease vs. buy)?
4. How will a proposed real estate investment impact risk/reward targets in an investment portfolio?
5. How will a proposed real estate acquisition impact a client’s business enterprise?
6. If this real estate investment (or development) opportunity is so great, why hasn’t someone already done it?

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To answer such questions, the analyst must go beyond technical expertise, applying creative critical thinking in:

- taking the initiative to question what you read, hear, and observe.
- challenging the underlying assumptions of what you are questioning.
- analyzing what you question in a reasoned and unbiased way.
- remaining open to new ideas and perspectives.
- changing your position on an issue when convinced by the logic of another position.
- reflecting constantly on your learning in order to find patterns, linkages, or related elements that could be applied to other problems or issues.

Lessons 2 and 3 build on the creative critical thinking foundation, towards the start of effective problem solving. Lesson 2 will focus on framing a decision, getting to the heart of exactly what problem your client actually needs to solve. In Lesson 3, students focus on research methodology: improving research skills by identifying which data are most relevant to problem resolution, how to evaluate costs and benefits of data collection and analysis alternatives, and how to apply data to informed decisions.

In Lessons 4 and 5, students will study decision analysis techniques that apply an analytic and systematic approach to decision making. The intent is to make better decisions — "better" in the sense that they are based on logic, consider all available data, and evaluate all possible alternatives, generally with some form of quantitative approach.

Lessons 6 to 9 address how forecasting tools, selected and applied judiciously, might be applied within a decision framework. Rather than examining forecasting tools as a distinct topic specialization, we will focus on them as one more tool in a broader creative problem-solving process.

Lesson 10 is based on the notion that "experience is inevitable, but learning is optional". In this lesson, students will contemplate how analyzing risk and critically auditing their thinking and problem-solving processes can lead to self-improvement and thus enhanced client service.

**Key Concepts Underlying Creative Critical Thinking**

Now, let’s consider some key concepts of thinking. Our thinking controls us; understanding how we think will help us understand ourselves and others better, aiding our team work, problem solving, and client service. Figure 1.1 illustrates the three functions of the mind: thoughts, feelings, and desires. These functions can be guided or directed either by one’s native egocentrism or by one’s potential rational capacities.

Whether we control our thinking depends on our rational capacities and/or our egocentric tendencies. Human rationality is fair-minded and self-developing, while irrationality (or egocentrism) is selfish and self-validating. Most rational thought functions consciously; on the other hand, irrationality must have some degree of unconsciousness in order to permit self-deception. Because irrationality appears to the mind as reasonable, we must develop strategies for disclosing irrational thought.

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Figure 1.2 displays Ned Hermann’s model of thinking preferences. Hermann argues that a person develops thinking preferences over his or her lifetime, with each individual demonstrating varying degrees of brain dominance in one or more quadrants of the brain. His metaphor for how the brain works suggests “four interconnected clusters of specialized mental processing nodes, that function together situationally and iteratively, making up a whole brain in which one or more parts become naturally dominant.” His model of how the brain thinks provides a framework to help us recognize our own thinking preferences: left-right; cerebral-limbic.
Looking at the four quadrants in Hermann's model, we might identify with certain individuals who exemplify these characteristics:

- The "A-quadrant Analyzer". A logical thinker, analyzer of facts, processor of numbers. Mr. Spock, science officer on the Star Trek TV series, epitomizes these “thinking preferences”, with brain dominance in left-cerebral hemisphere.

- The "B-quadrant Organizer". This quadrant suggests someone with brain dominance toward planning approaches to problem solving; an organizer of facts who prefers solid down-to-earth structure with no equivocation or ambiguity. Things are done according to procedures, on time, and delivered as promised. Red Adair, famous oil firefighter, demonstrates such traits. As he said of projects and project management: "There are three ways to get things done. You can have them done fast, cheap, or good. Pick any two, but you can't have all three."

- The "C-quadrant Personalizer". A person with these thinking preferences focuses on interpersonal relationships, relies considerably on intuitive conclusions, and is expressive. This style is highly participative and team-oriented, reflecting the belief that people are the most important asset. The door is always open with these folks. For an example of this brain dominance, consider Mr. Spock's alter-ego, Dr. McCoy, medical officer on Star Trek. A collaborator and humanist, Dr. McCoy was always greatly frustrated that the cold scientist, Mr. Spock, couldn't relate to the human side in problem solving.
ONLINE DISCUSSION POINT — So What?

In a workshop at the Appraisal Institute of Canada's National Conference in Toronto in June 2004, Bruce Turner tested a group of 83 appraisers using Hermann’s model. He found strong brain dominance in the "A-quadrant". Does that surprise you? Why or why not? Do you think that brain dominance in this quadrant might introduce potential blind spots in client service and service lines? And, if as a profession, appraisers lack "thinking diversity", how might they compensate for areas in which there is not a strong preference? How do real estate valuers need to work differently in order to expand service lines into new niches? Post your initial answers to these questions on the course Discussion Forum on your Course Resources webpage. Then, locate the responses posted by a classmate and offer constructive criticism of their point of view. Invite one or more of your classmates to create a discussion "thread" on this topic.

Creative Critical Thinking and Problem Solving

Creative and critical thinking may appear to be opposite types of thinking — one irrational and unidirectional, the other rational and directional. Yet both are inextricably linked.

According to Richard Paul, critical thinking is the art of thinking about thinking with a view to improving it. Critical thinkers seek to improve thinking in three interrelated phases. They analyze thinking. They assess thinking. And they upgrade thinking (as a result). Creative thinking is the work of the third phase, that of replacing weak thinking with strong thinking — creative thinking is a natural by-product of critical thinking, precisely because analyzing and assessing thinking enables one to raise it to a higher level.9

According to S.G. Isaksen10, problem solving is:

- The process of closing the gap between what is and what is desired;
- Answering questions, clearing up uncertainties, explaining that which was not understood or known, or removing perplexity; and
- Inclusive of perceiving, thinking (cognition), feeling, and behaving.

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Isaksen then links critical and creative thinking to problem solving:

*Creative thinking involves the production of new ideas whereas critical thinking ... involves reactions to others' ideas or to one's own previous ideas. Critical thinking can be creative in that it creates new insights for the individual, but these insights are concerned with previously established conditions. Creative thinking is very close to the problem-solving process.... It may be described as problem solving plus. Whenever the child or adult puts isolated experiences into new combinations or patterns we may say that creative thinking has taken place and this process does not take place in problem solving*.¹¹

Putting these concepts together leads us to "creative problem solving" (or CPS) — this key concept will serve as the organizing framework in this course as we, in later lessons, consider decision analysis tools and forecasting techniques.

Isaksen provides a helpful CPS model, with three major components and six stages (Figure 1.3). Later in the course, students will find it helpful to refer back to this model in considering how and when decision analysis techniques and forecasting might be applied, and how they might be logically presented, in assignments and in their major project.

**Elements of Critical Thinking**

The nature and quality of our thinking determine the quality of our lives and shape our ability to resolve problems, deliver client service, and effectively communicate with others. Left to itself, without rigorous and sustained effort, our thinking is often biased, distorted, partial, uninformed, or downright prejudiced. As an example of biased thinking, consider the following sad story:

*A father and his son were driving to a ball game when their car stalled on the railroad tracks. In the distance a train whistle blew a warning. Frantically, the father tried to start the engine, but in his panic, he couldn't turn the key, and the car was hit by the on-rushing train. An ambulance sped to the scene and picked them up. On the way to the hospital, the father died. The son was still alive but his condition was very serious, and he needed immediate surgery. The moment they arrived at the hospital, he was wheeled into an emergency operating room, and the surgeon came in, expecting a routine case. However, on seeing the boy, the surgeon blanched and muttered, "I can't operate on this boy — he's my son."

Question: Who was the surgeon?*

Most people (me included) might have trouble identifying the surgeon immediately as the boy's mother. Our biases and perspectives can cloud our thinking.

To think well, we need to understand the basic structure out of which all thinking is made. Figure 1.4 illustrates eight basic elements present in all thinking. By analyzing our thinking, we can then evaluate and subsequently improve it. As Richard Paul puts it: one analyzes to assess, one assesses to improve.

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¹¹ Isaksen, ibid, p. 153.
Figure 1.3
Creative Problem Solving: Three Main Components and Six Specific States

Understanding the Problem

- Seeking opportunities for problem solving.
- Establishing a broad, general goal for problem solving.

- Examining many details, looking at the mess from many viewpoints.
- Determining the most important data to guide problem development.

- Considering many possible problem statements.
- Constructing or selecting a specific problem statement.

Generating Ideas

- Producing many, varied, and unusual ideas.
- Identifying promising possibilities, alternatives, or options having interesting potential.

Planning for Action

- Developing criteria for analyzing and refining promising possibilities.
- Choosing criteria, and applying them to select, strengthen, and support promising solutions.

- Considering possible sources of assistance/resistance and possible actions for implementation.
- Formulating a specific plan of action.

Through applying critical thinking, we:

- increase **knowledge** by asking thoughtful questions of ourselves and others;
- develop **skills** through answering questions with good reasoning; and
- become aware of our **dispositions**: that is, testing and believing the results of our own good reasoning, and being prepared to act accordingly.

To analyze our own thinking or that of others, we will gain more knowledge and insights by using a structured questioning approach. Consider the following example, combining Figure 4’s thought structure with a questioning approach towards a business situation.

1. **What is my fundamental purpose?**
   
   - What is my (or the client’s) purpose in doing ______?
   - What is (are) the objective(s) of this assignment/project?
   - Should we question or revise this purpose? That is, have we clearly identified and analyzed the problem(s)?
2. What is my point of view with respect to the issue?

- What other points of view are central to this issue (e.g., clients, regulators, market participants, investors, competitors)? How will I consider them in the scope of this assignment?
- Do various points of view reflect prejudiced or reasoned judgment?
- Is my approach to this question too narrow (broad)?

3. What assumptions am I using in my reasoning?

- Do I clearly recognize my assumptions?
- Can I justify them? Where did they come from? For example, am I making assumptions about the future based on scant historical information — sales, absorption rates, market behaviour, etc.?
- Might my inferences (conclusions) be flawed as a result of wrong assumptions? For example, if the client doesn’t like my appraisal, am I then assuming that he/she has the wrong problem?
- Are my assumptions contradictory? For example, are the assumptions presented to the tax assessor the same assumptions that I subsequently present to the investor about a similar property?

4. What are the implications of my reasoning (if I am correct)?

- Have I specified all significant consequences (both negative and positive) of the recommendation that I am making?
- What are some possible unexpected implications? What are their potential impacts, and the likelihood of their occurrence? For example, how will competitors or environmentalists react to this proposed development?

5. What information do I need to answer my question?

- Am I being close-minded to some information?
- How will I reasonably interpret information (i.e., what objective methodology will I use)?
- How can I obtain that information? What is the cost-benefit of expensive information?
- How relevant are data to the claim(s) that I’m making?
- Is my presentation of relevant information clear and coherent?
- Have I distorted information to support my position? For example, have I emphasized purchaser enthusiasm for a waterfront development location, but under-emphasized risk associated with an aboriginal midden discovered on the neighbouring property?

6. What are my fundamental inferences or conclusions?

- Do my conclusions logically follow from the evidence and reasons that I’ve presented?
- Are my inferences too well-reasoned, or are they prejudiced by wrong assumptions?
- Is my information too superficial, given the nature of the problem?
- How well have I articulated my conclusions?
- Have I presented conclusions so that the client will accept them? That is, are solutions presented within the client’s decision-making framework?

7. What is the most basic concept in the question?

- What ideas, theories, laws, principles, or hypotheses am I using to make sense of the problem? For example, am I saying that if the developer invested $1 million to create the property, then its value in the marketplace must be at least equivalent to replacement cost?
- Am I being clear about the implications of those key concepts?
- Are these ideas, theories, etc., causing problems for me or others?
- How are key concepts reflected in my language? For example, if I describe the investor as prudent as opposed to clever or cunning, what negative implications might be avoided?
8. What is the key question I am trying to answer?

- What important questions are imbedded in the issue?
- How do you (and the client) see the question? For example, how might the question be addressed differently if the client is a social philanthropist or a financial tyrant?
- How would it look if the question were resolved (what does success look like)?

When real estate professionals adopt this questioning or reasoning to real estate problem solving, the outcomes are credible, supportable, and will stand up to rigorous examination by others.

In general then, critical thinking includes:

- Taking the initiative to question what you read, hear, and observe.
- Challenging the underlying assumptions of what you are questioning.
- Analyzing what you question in a reasoned and unbiased way.
- Remaining open to new ideas and perspectives.
- Changing your position on an issue when convinced by the logic of another position.
- Reflecting constantly on your learning in order to find patterns, linkages, or related elements that could be applied to other problems or issues.

Critical thinking involves intentionally applying reasoning processes. You use these reasoning processes unconsciously on a daily basis when you compare things, analyze other people’s perspectives, or arrive at conclusions inductively. Applying these processes on a conscious basis to your area of study is an effective way to develop your critical thinking skills and, in turn, deepen and broaden your knowledge base. Students interested in learning more about reasoning processes or reasoned judgments beyond their limited treatment in this lesson may wish to explore the Lesson 1 "Online Readings" on the course webpage.

Problem solving is critical thinking in action. A good definition of problem solving is "the process of identifying issues or barriers that are in the way of achieving a goal and determining a way to overcome or circumvent them." Consider the following sample illustration of a problem-solving approach.

*Consider the story of two men quarrelling in a library. One wants the window open and the other wants it closed. They bicker back and forth about how much to leave it open: a crack, halfway, three quarters of the way. No solution satisfies them both.*

*Enter the librarian. She asks one why he wants the window open: "To get some fresh air." She asks the other why he wants it closed: "To avoid the draft." After thinking a minute, she opens wide a window in the next room, bringing in fresh air without a draft.*

The problem-solving process, a variation of that presented earlier by Isaksen, consists of:

- Identifying your goal accurately and concisely. Determine exactly what you want to achieve.
- Identifying the issues or barriers that are preventing you from achieving your goal.
- Describing in detail how and why they are preventing you from doing so.
- Identifying different ways to overcome or circumvent these issues or barriers. Brainstorm for solutions and come up with as many as you can.
- Gathering information on all your possible solutions and, based on this information, drawing conclusions on each of them. Weigh the advantages and disadvantages of each. Will it help you achieve your goal?

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13 Ibid.
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- Choosing and implementing what you think is the best possible solution.
- Evaluating the effectiveness of your chosen solution.

**ONLINE EXERCISE and DISCUSSION POINT**

We can use the elements of reasoning to understand a subject's fundamental logic. The following table of questions is applied to science and sociology. In this exercise, you are asked to apply these questions to real estate consulting (furthering the adage that appraisal is neither art nor science!).

You may wish to post your answers to the course Discussion Forum. You may also wish to offer critical analysis on the perspectives of other students.

<table>
<thead>
<tr>
<th>Questions by Elements of Reasoning</th>
<th>Logic of Science</th>
<th>Logic of Sociology</th>
<th>Logic of Real Estate Consulting</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the main purpose or goal of studying this subject? What are people in this field trying to accomplish?</td>
<td>To figure out how the physical world operates through systematic observation and experimentation.</td>
<td>To learn how and why people act the way we do as a result of living with others in groups.</td>
<td>___________??</td>
</tr>
<tr>
<td>What kinds of questions do they ask? What kinds of problems do they try to solve?</td>
<td>What can be figured out about how the physical world operates by observation and experimentation?</td>
<td>How do humans behave in groups?</td>
<td>___________??</td>
</tr>
<tr>
<td>What sorts of information or data do they gather? How do they go about gathering information in ways that are distinctive to this field?</td>
<td>Facts that can be systematically gathered about the physical world.</td>
<td>Information about specific human groups and the characteristics they do and do not share.</td>
<td>___________??</td>
</tr>
<tr>
<td>What types of inferences or judgments do they typically make? (Judgments about...)</td>
<td>Judgments based on observations and experimentation that lead to systematized knowledge of nature the physical world.</td>
<td>Judgements about groups that tell us how humans behave in groups, and why.</td>
<td>___________??</td>
</tr>
<tr>
<td>What are the most basic ideas, concepts or theories in this field?</td>
<td>The workings of the physical world as predictable and understandable through carefully designed hypotheses, predictions and experimentation.</td>
<td>Humans as a herd or conforming animals.</td>
<td>___________??</td>
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ONLINE EXERCISE and DISCUSSION POINT (continued)

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>What do professionals in this field take for granted or assume?</td>
<td>That there are laws at work in the physical world that can be figured out through systematic observations and experimentation.</td>
<td>A central determinant in the life of humans is the group to which we belong.</td>
<td>___________??</td>
</tr>
<tr>
<td>What viewpoint is fostered in this field? How should studying this field affect my view of the world?</td>
<td>Looking at the physical world as something to be understood through careful observation and systematic study.</td>
<td>Seeing human behaviour as deeply shaped by the beliefs and values of groups.</td>
<td>___________??</td>
</tr>
<tr>
<td>What implications follow from studying this discipline? How are the products of this field used in everyday life?</td>
<td>If we systematically study the physical world, we can gain important knowledge about that world.</td>
<td>If I know the groups a person belongs to, I can predict much of his/her behaviour.</td>
<td>___________??</td>
</tr>
</tbody>
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Universal Intellectual Standards and Quality of Thought

Our reasoning can be improved by applying intellectual standards in a thoughtful questioning approach. For example, the following questions illustrate how intellectual standards can be applied through questioning:

- **Checking for clarity** (the gateway standard).
  - Could you elaborate further on that point? Can you provide an example? For example, consider which of the following questions is clearer? Why?
    - What can be done about property valuation problems in North America?
    - What can the Appraisal Institute do to ensure that candidate members learn skills and abilities to help them function successfully in their daily decision making at work?

- **Testing for accuracy.**
  - Can we trust the accuracy of these data given their source?
  - Is it true? How can we find out if it’s true? For example, statements can be clear, but not necessarily true: "Most dogs are over 300 pounds in weight."

- **Questioning precision.**
  - Can you specify your concerns more fully?
  - Can you provide more details?
  - Can you be more specific? A statement can be clear and accurate, but not precise. For example, consider the following statement: "That waterfront property is worth more than the view property." Hmm…is it worth $10,000 more or $10 million more?
• Examining *relevance*.
  - How does that statement bear on the issue at hand?
  - Can you explain how that point is relevant?
  - Could you explain what you think the connection is between your question and the question we have focused on? For example, is the number of billable hours the right criterion for the consulting fee? Or is there a stronger connection between the fee and value that the consultant’s advice brings to the client’s decision-making situation?

• Questioning *logic*.
  - Does it make sense? For example, does either "book value" or "replacement cost" represent the best methodology to determine value for a frequently traded property type?
  - Does what you say necessarily follow from the evidence? For example, does the "boiler plate" about neighbourhood description and economic analysis in the appraisal report really support the value conclusion?

• Exploring *depth*, *breadth*, and *fairness*.
  - What makes this a difficult question to answer?
  - What points of view are relevant to (or have we considered in) this issue?
  - What dimensions have not been considered (e.g., economic, environmental, ethical, social)?
  - Do I have any conflict of interest in this issue?
  - Am I sympathetic (consciously or unconsciously) biasing my viewpoint in representing others?

In the next lesson it will become clear how the application of reasoned questioning and related principles of quality of thought can be applied to real estate research.

### Intellectual Traits Necessary for Continued Self-Improvement

We must point out that critical thinking skills are a powerful tool that can be misused. In the absence of guiding intellectual virtues, they can be used to rationalize prejudice and advance vested interests. The human mind, whatever its conscious goodwill, is subject to powerful, self-deceptive, unconscious egocentricity of mind. Critical thought needs a basis of moral integrity and responsible citizenship in order to encourage development of intellectual virtues:  

- **intellectual humility**:
  - Critical thinkers need to recognize the limits of their own knowledge — including their own potential for self-deception, sensitivity to bias, and prejudice. Intellectual humility includes recognizing that one should not claim more than one knows. To illustrate, consider this statement: "After 20 years of property valuation experience, I realized that I had learned appraisal by rote, and practiced it according to mechanical processes that did not really reflect clients’ needs for value-added service. Critically reviewing my own work made me realize that my appraisal reports presented considerable ‘boiler plate’ that was not necessarily connected to value conclusions.” This acknowledgement does not imply spinelessness, but arises out of insight into the nature of knowing — such as that advocated by Socrates.

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• intellectual **courage or responsibility**:  
  - this virtue requires that critical thinkers recognize the need to face and fairly address ideas, beliefs, and viewpoints toward which they have strong negative emotions, and to which we may not have given a serious hearing. Examples might include challenging our views toward development of group homes or rehabilitation facilities in communities, abortion clinics, or doctor-assisted-death centres. This virtue of non-conformance can make critical thinkers unpopular.

• intellectual **empathy**:  
  - this trait requires that we need to imaginatively put ourselves in place of others to better understand them. This can require us to recognize our own egocentric tendency to identify truth according to our ingrained frame of reference. This trait also correlates with our earlier observation that the critical thinker needs to be able to reconstruct accurately the viewpoints and reasoning of others, and to reason from premises, assumptions, and ideas other than his or her own.

• intellectual **perseverance**:  
  - this trait refers to the willingness and consciousness of the need to pursue intellectual insights and truths in spite of obstacles and frustrations, and despite the irrational opposition of others. Effective critical thinking requires firm adherence to rational principles.

• intellectual **integrity**:  
  - Intellectual good faith requires the critical thinker to be true to his or her own thinking, holding herself accountable to the rigorous standards that she expects of her antagonists.

## How Mental Models Influence Our Thinking and Decision Making

The term "mental models" is attributed to Scottish psychologist, Kenneth Craik. In the 1990s, mental models gained prominence through Peter Senge's work on "learning organizations". Mental models represent our frames of reference, our "mindset" and biases; they influence how we see our profession and how well we serve our clients.

> Mental models are deeply ingrained assumptions, generalizations, or even pictures or images that influence how we understand the world and how we take action.  
(Senge, 1994)\(^{16}\)

> Mindset is the mental framework that constructs a particular meaning from those contents. It is the filter through which you screen what gets drawn and interpret its meaning.  
(Anderson, 2001)\(^{17}\)

> Bias is a mental tendency or inclination, especially an irrational preference or prejudice.  
(Collins English Dictionary, 1992)

Senge presents a workshop example to demonstrate people's mental models. In the workshop, he asks people to arm wrestle with a neighbour, telling them that "winning" means bringing their opponent's arm to the table as many times as possible in 15 seconds. Most people pit themselves against their opponent, struggling to push the other person's arm down. A few, though, will look at each other and then flop one another's arms down repeatedly, without resistance. They are not constrained by the mental model that only one person can "win".

---


We are influenced by our experience and this can erect blinders as to the best way to do things, especially in times of rapid change. Under stress, we revert to hard-wired responses — those paradigms that we have developed through training and life experience.

Facione outlines several common categories of biases:

**Anchoring with Adjustment:** This bias is common when making evaluative judgements. We initially "anchor" our evaluation of information based on what we know, but as more information becomes available our point of reference begins to shift. For example, an appraiser may discount the comparability of market data, such as property sales, believing that more relevant information will be discovered in the analysis. However, if the markets are "thin", the sale originally discounted may be re-evaluated and given relevance.

**Illusion of Control:** Facione suggests many of us over-estimate our ability to control what occurs. In other words, you may have appraised a property to sell under certain conditions for $525,000. However, when the property sells for $600,000 or $75,000 higher than the appraised value, the illusion that the appraiser can forecast the market with certainty is shattered.

**Hindsight Bias:** This bias is the tendency to misconstrue our personal influence or responsibility for past events. For example, during an election campaign a Provincial government may claim credit for recent positive economic results, even though the actual performance was more due to global trade and investment patterns beyond their control.

**Structure:** A common tendency is to settle on a particular option which is deemed good enough, elevating its merits and minimizing its flaws in relation to other options. This self-fulfilling bias is particularly problematic in research projects since it prevents us from going back and re-evaluating or reconsidering our earlier assumptions and findings.

Senge states that experts are particularly susceptible to difficulties with mental models. He points to educators who have alienated parent groups because they believe that parents don’t really know what their children need, and to the failure of hospitals to serve as community health centres because health professionals believe that hospitals are foremost repositories of scientific knowledge for healing the seriously ill. As real estate professionals, what mental models influence or constrain us? For example, how do we view clients? Environmentalists? Developers? Regulators?

---

**ONLINE DISCUSSION POINT**

At a Toronto workshop, ten groups of real property appraisers, working at separate tables, were asked to consider the following email:

"An Ottawa developer recently completed an infill residential complex in a small village on the edge of the City, and did very well. Target market was seniors wanting to downsize, but staying in the general area. The question I was asked, was, how did I think the same project might perform in another village setting, but one quite different from the first, and where there was nothing else like this project. From an appraisal perspective I was sort of stumped as there was no strong market evidence to draw from, but there is some indication that there is a pent-up demand by other seniors that might make this work. This is not a straight up appraisal assignment, but is a value added type of work, and being able to provide the answer would make Appraisal Institute members more useful in development scenarios."

continued >
The workshop appraisers were then asked to consider in their groups the following questions regarding “value added” type of work:

- How do we, as advisors, help the client make the right decision, in his or her business context?
- Even if economically feasible, is the proposal really suited to the client?
  - Financial capability?
  - Ability to evaluate, develop, and lease/market this property?
  - Time availability to do the necessary work?
  - Return expectations, in light of known risks?
- What are the client's goals?
  - Trying to put building or land to more productive use?
  - Looking to diversify his or her holdings?
  - Generating income for children's college tuitions?
  - Trying to add some value, by capitalizing on a trend?
- What are the client's values?
  - How would the client feel if it were necessary to evict people to change property use?
  - Or to provide assisted living units for elderly market? Would he or she be comfortable running that kind of business (as business operation is then an integral part of the real estate)?
  - How would client respond, knowing that the ‘deal’ is likely to be highly political? Does he or she want to get personally involved?

One group of appraisers adamantly argued that this client's needs could be entirely satisfied by using the appraisal process, including consideration of highest and best use analysis, and applying traditional appraisal skills.

Do you agree with these appraisers' point of view? Why, or why not? In answering, consider these critical reflections:

- How well did these workshop appraisers consider opposing points of view — in other words what mental models do you think they relied on?
- Does their perspective represent prejudiced or reasoned judgment? Why?
- Is their approach to the questions too narrow? Why?
- What do you think might be the roots of these appraisers' viewpoints? What biases can you detect?
- If the majority of appraisers shared this viewpoint, what do you think implications and consequences might be for the appraisal profession?

Go to the Course Discussion Forum and discuss these questions with your classmates.

Mental Models and Ladders of Inference

Consider the mindset of the residential appraisers that Hamilton refers to in his paper, "The Skill Set Needed to Survive". If residential appraisers in the early 1990s accepted that emerging technology threatened their traditional services, rather than fighting to have their traditional product regulated, how might they have reacted differently? In all areas, if we hold a better mental model of our clients, how might we behave differently? Would we develop more value-added service lines? Manage risk better? Build more appropriate skill sets to survive and thrive in our changing business environments?

People can and do change their attitudes. Senge points out that the scientists who created the space program had to envision unimagined possible futures. Real estate professionals don’t need to be rocket scientists to do likewise about their futures.
Chris Argyris (in Senge, 1994) coined the term "ladder of inference" to describe the way in which people tend to:

- Selectively filter and distort experience based on strongly-held beliefs;
- Generalize from their own experience to meanings;
- Crystallize meanings into beliefs; and
- Take actions based on those beliefs.

In "The Fifth Discipline Fieldbook", Ross states that our ability to achieve the results we truly desire is eroded by our feelings that:

- our beliefs are the truth (else why would we believe them);
- the truth is obvious (doh!);
- our beliefs are based on real data (my two comparable sales prove that I’m right);
- the data we select are the real data (ok, so there aren’t any other sales, but other market evidence is not relevant anyway!).

Through our tendency to short-circuit our thinking to arrive quickly at our reality, we climb Argyris’ “ladder of inference” (Figure 1.5).

![Figure 1.5: Ladder of Inference](source: Argyris)

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Consider again residential appraisers in the 1990s, choosing to fight, rather than embrace, the three factors described by Hamilton:

- Re-bundling of residential real estate services;
- Shrinking fees per residential valuation; and
- Electronic valuations.

Here is an analysis of how they may have climbed their "ladder of inference"

- DATA: Limited cases of purchasers assuming mortgage liability "caused" by electronic appraisals raise fears (proliferated by appraisers?) that purchasers are at risk.
- MEANINGS: Financial institutions care less about purchasers' liability than about saving a buck to beat their competitor.
- ASSUMPTIONS: 1) Financial institutions prefer to save appraisal fees by using electronic appraisals, instead of paying a reasonable fee for a necessary service. 2) Mortgage appraisals, completed by appraisers, are of sufficient quality to mitigate client risk.
- CONCLUSIONS: Purchasers need protection from financial institutions' careless business practices.
- BELIEFS: Only appraisers can properly complete mortgage (and other) residential appraisals.
- ACTION: Convince AIC to lobby for the government to regulate against electronic appraisals.

Ross goes on to say that we can’t live life without adding meaning or drawing conclusions. After all, we need to short-circuit decisions to get through each day. He suggests the ladder of inference in three ways:

- Becoming more aware of your own thinking and reasoning (reflection);
- Making your thinking and reasoning more visible to others (advocacy); and
- Inquiring into others’ thinking (e.g., clients and colleagues) and reasoning (inquiry).

This ladder of inference concept can be a powerful tool for the real estate professional in helping clients. Even as we consider the need to change our own mental models, consider that clients and other stakeholders have climbed their own ladders of inference. They may be making very different assumptions and coming to entirely different conclusions. As consultants, one of our challenges is to clarify client expectations, assumptions, and expectations: continuing the ladder analogy, we need to recognize gaps between ladder tops and develop scaffolding to bridge these gaps. By identifying our own and others’ mental models can help find common ground, or, alternately, recognize that we are not likely to find common ground, freeing us to "agree to disagree", thereby providing a better base for managing client service relationships.

Students interested in pursuing reflection, advocacy and inquiry skills beyond this brief introduction might be interested in reviewing further information on their own: see the Lesson 1 "Online Readings" for links and suggestions.
Applying Critical Thinking Skills Effectively

If our mental models can cause us to be blinded to what clients really need, then we must get beyond just critical thinking in order to serve clients creatively, compete more effectively, and produce better solutions. Thinking back to the Whole Brain Model, if real estate professionals tend to operate like Mr. Spock (in quadrant A), then how do they develop (or engage other people to provide) the skills of Dr. McCoy, Einstein, or Red Adair (quadrants B, C, and D)?

Critical thinking requires two things:

- First, it requires a set of skills to process and generate information and beliefs. Put simply, these involve:
  - asking thoughtful questions; and
  - answering questions with good reasoning, including:
    - clarifying questions,
    - gathering relevant data, and
    - reasoning to logical and valid conclusions.
- Second, critical thinking requires that we develop the habit of using those skills, virtuously, to guide behaviour.

Of course, as we apply our questioning skills relative to a business situation, we need to remember our own thinking styles and biases.

In completing this assignment, what are my ATTITUDES?

- What is my purpose in helping this client?
- Am I willing to examine my own assumptions?
- Am I willing to entertain new ideas?
- Am I willing to exert myself (e.g., diligently research and evaluate information)?

In completing this assignment, how effective are my SKILLS?

- How will I summarize the argument(s) most effectively?
- Can I identify, analyze, and evaluate assumptions, evidence, and inferences?
- How will I present ideas effectively (e.g., organizing and writing, or personally presenting to my imagined audience)?

In the following section, we will apply critical thinking skills using "drill down" questions in six categories. Effective thinking, like property appraisal, should be driven by asking good questions, not by producing content. Adding content (e.g., boiler plate in appraisal reports) is like stepping on the brakes of a stopped vehicle. Thinking must GO SOMEWHERE, and the questions we ask must clarify its direction. Through systematic questioning we (learn to) apply disciplined thinking skills. We will now consider systematic questioning in the context of the following critical thinking activities:

1. Analyzing the big picture.
2. Looking at the invisible components.
3. Scrutinizing the details.
5. Considering context and connections.
6. Questioning logic.
To help you contemplate questions associated with these critical thinking activities, consider an article from a real estate investment club website\(^\text{20}\). Alex Gurevich’s article entitled “Goldmine In Offering Financing To Buyer-Occupants” suggests opportunities for economic gain through recognizing and exploiting the difference in motivations of investors and homebuyers.

What is the author’s premise?

\begin{quote}
It’s an American dream of home ownership. Specifically we’re talking about the buyers who applied for home loans but have been rejected, or those who haven’t even tried to apply because they don’t believe they can get a loan.
\end{quote}

\begin{quote}
Because homebuyers are not profit motivated (at least not immediately), they are much less concerned with payments or price. They don’t have to worry as much about making "positive cash flow" on a house.
\end{quote}

\begin{quote}
They’re actually concerned with both price and payments, but mostly to the extent whether or not they can qualify for a loan and then afford the payments.
\end{quote}

\begin{quote}
The most important thing for them is the fact they can buy and own the house.
\end{quote}

\begin{quote}
Therefore, our job as smart investors becomes to offer such buyers that opportunity. As I mentioned before, it’s an item in low supply and a relatively high demand.
\end{quote}

The author then suggests how we are "serving" our customers. That is, what’s in it for the homebuyer?

\begin{quote}
You are offering the opportunity to these homebuyers that doesn’t exist for them otherwise. The only other choice they have is to wait until their credit situation changes and until they save money for a down payment.
\end{quote}

\begin{quote}
This alternative is actually much more expensive for them than doing business with you. Waiting and saving could easily take them 3-4 years. In the area with growing housing prices it means they could be paying $30-50,000 more for the same house you can sell them today quite a bit cheaper.
\end{quote}

\begin{quote}
On the top of that, they will likely be paying escalating rents during those 3-4 years it takes them to get to the point of being able to qualify for a loan.
\end{quote}

Then the author identifies "what’s in it for the investor":

\begin{quote}
When you help home buyers who can’t get a mortgage loan on their own to get into a house you get to make a hefty profit.
\end{quote}

\begin{quote}
Is this fair deal for all parties? Absolutely.
\end{quote}

Now consider how the following clarifying questions, applied in a frame of six categories, can help you critically analyze the "Goldmine" story.

Lesson 1

1. Analyzing the big picture

- What is the person saying? Can I clearly and succinctly state their thesis?
- What are his or her key points and major assertions?
- Are the issues clearly and accurately defined and described?
- Are the terms and concepts clearly defined or explained?
- Are the examples used pertinent? Do they substantiate the presenter’s point of view?
- Do you agree with the person’s definitions and descriptions? Why?

As an example unrelated to real estate, consider the statement "all men are created equal”. This statement needs clarification, as all men are clearly not created equal — physically, mentally, or otherwise. Is the statement really intended to mean that men are "equal in rights” — for example, politically and legally? And, if it does, do you think that the billionaire’s son really is equal in rights to the First Nation’s daughter who lives on an Indian reserve?

Considering such perspectives helps us to understand that, if men are not created equal, neither are real estate investment or development opportunities, despite the promotions that clamour their advantages.

2. Looking at the invisible components

- What are the presenter’s assumptions? Are they explicit or implicit? Accurate and valid?
- Does the author give any evidence of being aware of the hidden assumptions in his argument?
- What values and beliefs underlie the presenter's argument?
- Do you agree with the presenter’s assumptions, values, and beliefs? How would a critic view them?
- What exceptions can you think of?

To help you consider the warm promotion in the "Goldmine” article, consider another example, again unrelated to real estate. "Ours is a pluralistic society, in which we believe that the religious beliefs of one group should not be imposed on others.”

This is a friendly statement, that most people might well believe in. But, considered in the argument for permitting abortion, differing assumptions quickly become apparent. For one group, the fetus is a human being and a potential person, and that potentiality is decisive. For the other group, it is not. Differing assumptions create conflict and limit understanding.

How can we identify opportunities for common understanding? Critical thinking, applied effectively, can help identify common ground (or lack thereof) when we consider even politically sensitive issues around death, abortion, and human rights. Asking relevant questions can help us identify how our own values and emotions can affect how we reason.

Consider changing the definition of "death” from a situation where a person no longer has a heartbeat, to cessation of cerebral activity or "brain death”. Taken from the end to the beginning of life, could redefining the problem help with its resolution? Say, if it could be agreed that "life” begins at that point where integrated brain functioning begins to emerge (about 70 days after conception)?

As you read the preceding paragraph, did you feel your personal value set surfacing? Did you feel an emotional reaction coming to the surface? How might creative critical thinking begin to help address such emotional and values-laden questions? Can we likewise use creative critical-thinking techniques in testing real estate "gold mines”?
3. Scrutinizing the details

- What issues, claims, facts, or arguments are unclear or ambiguous?
- Are the descriptions and qualities accurate (all/none/always/never)?
- Do the models, illustrations, charts, maps, etc., illustrate the presenter’s point of view and add credence to his or her argument?
- What additional information is needed? That is, what else do you need to know to come to an informed opinion or decision?
- How credible is the information (and the informant)?

4. Assessing the evidence

- Is the data clear, adequate, pertinent, compelling, and complete?
- Is the presenter’s interpretation of the data accurate and complete?
- If the evidence is statistical:
  - Was it compiled by a disinterested, objective source?
  - Is it based on an adequate sample?
  - Is it recent enough to be representative of current or forecast environment?
  - Were only some of the relevant factors identified and measured?
  - Are the figures open to different, yet plausible interpretation?
- Are the findings generalizable? If not, what does that suggest about the hypothesis and claims for it?
- Are the stated causes and effects correct?
- Do other alternative explanations exist or might be discovered?

Consider how these questions could apply to real estate market analysis. That is, does general information for the market apply to the specific investment/development opportunity that you are considering? What risks are not considered – say with tenants who do not qualify for financing from financial institutions? What tenant/owner turnover rate might the investor experience? What transactions costs are ignored?

5. Considering context and connections

- Does the viewpoint fit the field and the discipline?
- Does it add something new, present contrasting viewpoints, or connect to others’ ideas?
- Are other points of view and data taken into account?
- What information is missing that is necessary to provide context?
- What would you change or add to improve the work?

Consider that different sets of assumptions might exist when parties are trying to close a deal, and you are acting for the one party that is trying to acquire a real estate holding from the other party. What are the other party’s assumptions? Are they markedly different? Does negotiation mean that your client has to beat them to "win"?

Or, is there opportunity to have them finance part of the deal; perhaps become a future tenant? Considering context also includes normal due diligence. For example, a few considerations that provide context for a retail development property acquisition:

- What competing facilities are planned for the local market area?
- How many leases are expiring (if it is an existing facility)? If so, what does that mean (can it be either good or bad)?
- What are the demographic trends and psychographic preferences of consumers in the area?
- What do consumers want?
- Who is likely to oppose the deal and/or jeopardize the development?
In Greek, logos can mean simply "word", or it can mean "the underlying point that makes sense or meaning behind everything else", or it can mean "logic, reason, rational thinking". Logic is essentially a study of sorting valid or reliable arguments from invalid or unreliable ones in accordance with specific rules. Invalid arguments are based on fallacious reasoning.

In general, there are two types of logic:

1. **Induction**: A type of reasoning that moves from the specific to the general. The argument is based on a limited number of examples, and from these examples, the rhetor attempts to fashion a more general or universal rule. The trick here is making sure the examples used truly are representative of the whole.

2. **Deduction**: Also called syllogistic reasoning, deduction is a type of reasoning that moves from the general to the specific. The argument is based on a general or universal rule that both the reader and the writer agree upon. The rhetor takes this general or universal rule, and then she tries to show how a specific example fits into that larger category. The trick here is to distinguish between validity and truth.

In questioning logic then, we might ask:

- Is the argument purely deductive, purely inductive, or a mixture of the two?
- If deductive, is it valid?
- If valid, are its premises and assumptions true?
- If not valid, what fallacy does it commit?
- That is, are the reasons given for the argument sufficient and valid?
- Is the evidence biased?

Consider whether there is a flawed premise in the following statement:

- All crows are black.
- This bird is black.
- Therefore, this bird is a crow.

Clearly the bird might be a raven or blackbird, so the argument is false. Exploring logical arguments is beyond the scope of this course, but we do need to understand that logic is an integral part of effective critical thinking. The following textbox offers an excerpt from Twardy's article, "Argument Maps Improve Critical Thinking", presenting a simple example of logic and two helpful tests for logic errors. For further information on basic logic concepts, students should review the additional resources in Lesson 1 "Online Readings".

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21 What is Logos? Website URL: http://web.cn.edu/kwheeler/logic.html.

22 Ibid.
An argument map is a two-dimensional representation of argument structure. It is usually a box-and-arrows diagram which resembles a tree.

The boxes are claims, which are arranged so that some are reasons for believing (or disbelieving) others. At one extreme is the final conclusion, supported (and opposed) by its reasons and objections. At the other extreme are the unsupported claims you take as basic. For example, to map the explicit part of the argument, "Socrates is mortal because Socrates is human," we would draw:

Of course, this argument is not valid as it stands: there is a missing (or enthymematic) premise, "All humans are mortal." So the argument map becomes:

A reason is a collection of claims which help each other, rather than a single claim. For example, in the argument map above, we argue that "Socrates is mortal" with the two claims "All humans are mortal" and "Socrates is human." But these two claims together are one reason. One claim helps the other, and together they yield the conclusion.

There are some largely mechanical rules Neil Thomason devised for checking argument structure. They are simple, quick to apply, and incredibly helpful. Properly used, with an argument map in front of you, they help overcome many mistakes made in representing argument structure.
Dr. Neil's Helping Rules

Rabbit Rule

"You can't conclude something about rabbits if you haven't been talking about rabbits."

Therefore:

"Every meaningful term in the conclusion must appear at least once in each reason."

This applies to every independent reason separately. The reason cannot get you to the conclusion "Socrates is mortal" unless in its premises you have both "Socrates" and "mortal".

Of course, merely having all the meaningful terms in your premises does not make it a good argument. For example, you might have "Socrates is a man" and "All elephants are mortal". We've covered "Socrates" and "mortal", but the premises do not work together.

Holding Hands Rule

"We can't be connected if we're not holding hands."

Therefore:

"Every meaningful term in one premise of a reason must appear at least once in another premise of that reason, or in the conclusion."

The premises "hold hands" by sharing terms. So "Socrates is human" shares "human" with "All humans are mortal". Just making the terms link up in this simple way helps prevent a lot of irrelevant "reasons" that fail to get you to the conclusion even though all the "ingredients" seem to be there.

Think of areas where logic might be appropriate in the context of real estate decision making. For example, might an inflationary market promote many "gold mines" (high return-high risk investments), and create fertile ground for many sins of flawed logic? How might we, as professional advisors, use logic to help prevent our clients from tripping over opportunities that become land mines rather than gold mines?

Think of how we might test logic like this:

- All real estate is trending upward (cash flow, appreciation).
- The investment that I am considering is real estate.
- Therefore, this property will produce positive cash flow from operations and appreciation.

Now that we have considered how questions can give direction to our thinking, we need to also remember that the questions we’ve considered relate primarily to critical thinking. That is, thinking that is mainly reflected in the attributes in quadrant A of the Whole Brain Model that we discussed earlier. Critical thinking questions can lead to reasoned judgment, by focusing on rational and structured thinking styles, but they may also limit consideration of emotional and strategic perspectives that are also essential in a creative problem-solving process. Or, in our Greek analogy, we must not only think about logos, but also consider pathos and ethos.
Making the "Right" Decision

How can we use creative critical thinking in problem-solving process to help clients make the "right" decision, in their business context? To answer this question, we should first clearly understand our role as service providers to clients. How can we best add value for them, and possibly develop or enhance service lines? Earlier we addressed the necessary paradigm shift for valuation professionals from the role of "expert" appraiser to consulting "advisor”. The appraiser's role would be simply as an expert, providing information used by others. The advisor’s role, on the other hand, helps the client "be right" within the context of what the client wants to accomplish. Advisors can do that by collaboratively focusing their experience, knowledge, insight, professional skills, and technical skills together with research expertise, on the client’s opportunity or challenge, within a creative problem-solving model.

Creative Critical Thinking in Application

Now let’s review how creative critical thinking skills might be applied within a problem-solving framework, by looking at a resort property case study. First, the advisor must approach the problem with clear and logical approach — see the problem-solving framework illustrated in Figure 1.6 overleaf. Figure 1.7 then takes this framework and translates it into a helpful worksheet. After considering the problem-solving process shown in Figures 1.6 and 1.7, read the "Resort Property Case Example" that follows the figures. (Note that we will re-consider this resort case in subsequent lessons on forecasting.)

With the resort property case example in mind, consider the following:

- Figure 1.2 — Whole Brain Model;
- Preceding discussion of advisor’s role in client’s decision-making process;
- Figure 1.4 — the eight elements of thought;
- Figure 1.6 — three-stage creative problem-solving process (You may also find it helpful to refer back to the Isaksen & Treffinger problem-solving model); and
- Figure 1.7 — problem-solving framework.

Now consider the client’s needs in the framework of the following:

- What are some of the skills that might be required in addressing this client’s problem?
- Consider skills including:
  - team leadership and membership skills,
  - negotiating skills, research skills,
  - client relationship management skills,
  - project management skills,
  - technological and technical skills,
  - risk management skills, facilitation skills,
  - creative critical thinking and writing skills,
  - decision-making skills,
  - financial and quantitative analysis skills, and
  - communication and interpersonal skills.

First, identify the skills that you believe are relevant at each step of the three stages in the problem-solving process. Add to the listed skills any that you feel are relevant.

Second, identify the intellectual values or traits that you believe are most relevant to virtuous creative critical problem solving.
Third, identify the Whole Brain quadrants where we would be most likely to encounter the following skills that you have identified.

Last, briefly describe why these skills will help add value to client service and problem solving. What might be the consequences of applying only critical thinking skills in the client’s decision-making process?

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Figure 1.6
Creative Problem Solving

**STAGE ONE**  
*Understand the Issues*

**Lessons 2-3**

- Define the Problem
- Analyze the Situation

**STAGE TWO**  
*Find Solutions*

**Lessons 4-9**

- Make Decisions
- Evaluate Ideas

**STAGE THREE**  
*Plan Your Action*

**Lesson 10**

- Analyze the Impact
- Plan Your Action
- Plan the Follow-through

Pfeiffer & Company, San Diego, CA.  p.5
<table>
<thead>
<tr>
<th>Problem-Solving Stage</th>
<th>Skills</th>
<th>Intellectual Value or Trait</th>
<th>Whole Brain Quadrant (A, B, C, D)</th>
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<td><strong>Stage One — Understand the Issues</strong></td>
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<tr>
<td>• Define the Starting Issue(s)</td>
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<td>• Analyze the Situation</td>
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<td>• Define the Problem</td>
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<td><strong>Stage Two — Find Solutions</strong></td>
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<tr>
<td>• Generate Ideas</td>
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<td>• Evaluate Ideas</td>
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<td>• Make Decisions</td>
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<td><strong>Stage Three — Plan Your Action</strong></td>
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<tr>
<td>• Analyze the Impact</td>
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<td>• Plan the Follow-through</td>
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Resort Property Case Example

An investor owns a small resort property on Vancouver Island. Situated on a 7 acre waterfront property in a rural area 6 kilometres south of the nearest small city (30,000 — with regional population of 60,000) the property was developed in the mid-80’s and comprises:

- 30 unit motel
- 230 seats — banquet and dining rooms
- 75 seat cocktail lounge
- tennis courts (4)

The area’s attractions include:

- proximity to Strathcona Park – a 211,000 hectare (520,000 acre) wilderness park created in 1911
- opportunities for whale and grizzly bear watching
- glacier hiking and wilderness camping
- ocean kayaking
- diving
- skiing
- golfing
- fishing and boating

The property has turned over three times since development. Two occasions followed bankruptcy. It seemed the property was just too far from town to attract business clients, yet not sufficiently developed to attract the pleasure/tourist market.

Located on the "old" Island Highway, the site has good access, and could readily accommodate further development. However any expansion would require development of a $500,000 sewage treatment plant. The local community tends to resist development "sprawl", but is generally supportive of "clean industry" and environmentally friendly commercial enterprises.

The local economy relies to a large extent on primary industry — forestry and mining. The nearby city also serves as a government hub for north/central Vancouver Island. Public sector represents 25% of the local work force (including local and provincial government employees and an armed forces base). Population growth soared during the 90’s as people were attracted to the mild climate, relative security and scenic beauty of this Island community. According to 2001 Census Statistics, a deteriorating provincial economy led to slowed population growth.

The owner/investor believes that demographic trends in Canada, a growing interest in healthy living and the environment (e.g., eco-tours, safe "wilderness" adventures) might create opportunities to expand the resort. There has been a growth in eco-tourism industry on Vancouver Island, particularly attributed to European and American tourists who, post 911, are interested in safe areas where they can experience wilderness adventures in relative comfort.

The investor believes that the limited development of resort properties in the area for the past 15 years, and the repeated failures of this operation are due to previous owners' mismanagement and their inability to identify and reach target markets.

continued>
He is considering a few alternatives:

- expand the resort by adding more rooms, (which might be strata-titled to be more attractive to investors and then operated by his management company);
- changing the market niche, perhaps by adding a spa, or an equestrian facility; or
- selling the resort in its current state.

The investor’s optimism is fuelled by:

- New $1.1 billion Inland Island highway within 5 kms.
- Creation of a civil Airport Authority to facilitate use of the military airport for commercial air traffic. A new airport terminal is just opening to accommodate larger jet aircraft, and will include an international terminal section.
- Early signs of an improving local economy, due primarily to an influx of wealthier residents who are retiring or not employment-dependent for income.
- A progressive tourism association that is promoting links with German and US tourism industry.
- Substantial investment by other local investors in a local ski resort and golf course/real estate developments. The local area is promoted as a place where you can "ski in the morning and golf in the afternoon"; "near the crowd, but not part of it".

### Conclusion

This lesson has introduced the concept of creative critical thinking applied in a problem-solving framework. We started with a quick overview of the course objectives, then explored the principles underlying creative critical thinking, and concluded with practical ideas for applying these principles in a problem-solving context.

Creative critical thinking skills represent our primary objective in developing this course — if a student in the end came away with nothing more than this, we will have satisfied one of our key learning outcomes. We feel it is crucial that real estate professionals operate in a questioning culture, where nothing is taken for granted, where creativity is mandatory, and where constructive critique underlies all recommendations.

Figure 6 outlines how the problem-solving framework introduced in this lesson will form the structure for the rest of the course. The next two lessons will focus on Stage One "Understanding the Issues", outlining how to frame a decision and carry out the systematic research necessary before decision tools can be applied. The following two lessons (4 and 5) will focus on decision analysis, a set of powerful tools to evaluate ideas and help make better decisions. The next four lessons (6-9) examine forecasting techniques, a related set of tools for making decisions specifically when considering an uncertain future in which relevant data is available to inform us from past events. The final lesson will focus on Stage Three, "Planning Your Action", looking at making a final decision, implementing it, and then subsequently following up.
Review and Discussion Questions

Consider Hamilton’s paper entitled, "The Skill Set Needed to Survive". To gain deeper insight into the author's reasoning try role-playing the author’s thinking as you complete the questions below.

Using the eight basic elements of thought, evaluate the author's reasoning, employing the following template and applying the universal intellectual standards introduced in this lesson:

1. The main **purpose** of this paper is ______________________.
   (Here you are trying to state, as accurately as possible, the author's intent in writing the article. What was the author trying to accomplish?)

2. The key **question** that the author is addressing is ______________________.
   (Your goal is to figure out the key question that was in the mind of the author when he wrote the paper. What was the key question addressed by the author?)

3. The most important **information** in this paper is ______________________.
   (You want to identify the key information that the author used, or presupposed, in the paper to support his main arguments. Here you are looking at facts, experiences, and/or data that the author is using to support his conclusions.)

4. The main **inferences** in this paper are ______________________.
   (You want to identify the most important conclusions that the author comes to and presents in the paper.)

5. The key **concept(s)** that we need to understand in this article is (are) ______________________. By these concepts the author means ______________________.
   (To identify these ideas, ask yourself: What are the most important ideas that you would have to know to understand the author's line of reasoning? Then briefly elaborate what the author means by these ideas.)

6. The main **assumption(s)** underlying the author’s thinking is (are) ______________________.
   (Ask yourself: What is the author taking for granted [that might be questioned]? The assumptions are generalizations that the author does not think he has to defend in the context of writing the paper, and they are usually unstated. This is where the author’s thinking logically begins.)

7. (a) If we take this line of reasoning seriously, the **implications** are ______________________.
   (What consequences are likely to follow if people take the author’s line of reasoning seriously? Here, you are to pursue the logical implications of the author’s position. You should include implications that the author states, and also those that the author does not state.)

   (b) If we fail to take this line of reasoning seriously, the **implications** are ______________________.
   (What consequences are likely to follow if people ignore the author’s reasoning?)

8. The main **point(s) of view** presented in this article is (are) ______________________.
   (The main question you are trying to answer here is: What is the author looking at, and how is he seeing it?)
ASSIGNMENT 1

Critical Analysis

The following questions should be submitted using the Real Estate Division’s website www.realestate.ubc.ca. See "How to Submit Multiple Choice Assignments" in the Real Estate Division Student Handbook for more information.

Marks: 1 mark per question.

1. A client has hired you to complete a locational study for a new large format retail (big box) store in Hamilton. You will be drawing upon the meta-skills described in the Stan Hamilton paper. Which course of action is LEAST likely to reflect these meta-skills?

(1) Time is spent at the project outset to identify the issues and clearly define problems to be solved.
(2) After an initial meeting with the client, the project outcomes are presented two months later.
(3) A research plan is developed and executed to address the key research questions.
(4) The analysis methods used to develop the conclusions are the best suited for the client’s decision.

2. You have received a free market report for office buildings in the city of Surrey. You are applying critical thinking skills to evaluate this information. Which of the following questions is LEAST likely to be an appropriate critical analysis question?

(1) Why is the company providing the data for free?
(2) How was data collected and analyzed?
(3) Is the data relevant for the research question(s) to be answered?
(4) All of the above are appropriate critical analysis questions.

3. You feel that your employer, a moderately large private real estate investor, is rushing into a real estate decision to purchase a retail property in Oshawa. It seems like a good deal, but you sense there is a flaw in this snap decision, so you meet with your employer to review the decision. Which of the following actions would NOT be an example of applied critical thinking in the discussion with your employer about this investment proposal?

(1) Challenge the underlying assumptions (e.g., market analysis) supporting the purchase decision.
(2) Reflect on whether the investment would be consistent with the employer’s investment objectives and risk tolerance.
(3) Recalculate the cash flow analysis using the same data to uncover any computation errors.
(4) None of the above are examples of applied critical thinking for this investment proposal.
4. As Hermann pointed out with his model of thinking preferences, our reasoning can be improved by understanding how we think. Assume you are a new mortgage lender who has received an appraisal report. Which of the following questions is MOST likely to be egocentric in nature?

(1) Is the data in the report accurate given the sources quoted?
(2) Is the estimate of value supported by the facts and analysis?
(3) Are the statements in the appraisal report relevant in relation to the analysis and conclusions?
(4) Does the opinion of value fit the appraiser’s pattern of always over-estimating market value?

5. "I like to take risks and rely on my ‘gut-instincts’ to guide me in evaluating people and decisions.” Which of the following statements best describes this dominant thinking style?

(1) Ego-centrism
(2) Rational thought
(3) Quadrant C thinker
(4) None of the above

6. You have a client who has recently become an owner (through an estate) of a rental apartment held in the family for decades. There is considerable family history and personal feelings associated with the property. In helping the client with the difficult real estate decision on whether they should sell or hold the property, which of the four quadrants of thinking would be most useful for you during your first meeting?

(1) Quadrant A — logical
(2) Quadrant B — organized
(3) Quadrant C — interpersonal
(4) Quadrant D — holistic

7. What was S.G. Isaken’s main point about critical thinking and problem solving?

(1) Critical thinking is the art of thinking about thinking with the view to improving it.
(2) The nature and quality of our thinking will determine the quality of our lives.
(3) Problem solving is the process of closing the gap between what is and what is desired.
(4) Problem solving is about reducing risk.

8. Which of the following bias in decision making often occurs when we take credit for our successes in problem solving?

(1) The illusion of control
(2) Hindsight bias
(3) Anchoring a theory
(4) Over-analysis of data
9. An assessor is developing a brief (consisting of an appraisal report and legal arguments) for an appeal proceeding. In addition to his appraisal skills, how should he apply critical thinking skills in completing this assignment?

(1) Adopt a problem solving framework to bring clarity and logic to the problem.
(2) Ensure a high level of accuracy in the reported data.
(3) Question the assumptions and reasoning applied in the analysis.
(4) Both options (1) and (3) are correct.

10. Consider the following statement: "Appraisers in my community tend to over-bill their clients. I’ve compared invoices for appraisal work done at my bank to that of colleagues at other banks, and I am paying more for the same type of work. Therefore, I believe I’m being overcharged for this appraisal report."

(1) This is an example of deductive reasoning.
(2) This is an example of inductive reasoning.
(3) This is an example of productive reasoning.
(4) This is an example of hypothetical reasoning.

11. A real estate salesperson in Sarnia tells her client: "Your home will likely sell within a reasonable marketing period. I’ve already sold two homes in your neighbourhood near their list price within 30 days. I’ve worked in the local market for ten years. List with me if you want a successful sale, near list price." What type of reasoning is the salesperson using?

(1) Inductive
(2) Deductive
(3) Syllogistic
(4) Both (2) and (3)

12. Considering Twardy’s argument map, would you agree that the following argument is valid or not?

The median price of homes in Victoria is a better reflection of the affordability of housing than the mean. Reason: The mean or average price of homes is skewed by sales of very high value waterfront properties. Victoria has a large number of waterfront properties.

(1) Not valid since there is a missing premise.
(2) Valid since the two claims validate each other.
(3) Not valid since it fails the "rabbit rule".
(4) None of the above are correct.
13. Tim Smith is a portfolio manager for a major REIT which owns a community shopping centre in Calgary. Based on his experience, Tim believes that the tenant mix needs to be changed to improve mall traffic and overall profitability. Tim instructs you, as property manager, to give notice of early termination to six commercial retail unit tenants next week. Which step in the problem solving framework has Tim by-passed?

(1) None — the problem was identified and an appropriate solution defined.
(2) Analyzing the situation and defining the problem.
(3) Analyzing the impact, planning the action, and follow-through.
(4) Both (2) and (3).

14. Critical thinking requires two things: (1) a set of skills to process and generate information and beliefs, and (2) the habit of using these skills. Which of the following skills is NOT specifically associated with critical thinking?

(1) Ability to ask clarifying questions.
(2) High level of ability in conducting in-depth research.
(3) Ability to apply reasoning to support conclusions.
(4) Being aware of our own thinking styles and biases.

15. The Appraisal Institute of Canada (AIC), a national body of professional real estate appraisers, is facing a number of internal and external challenges. The AIC Board of Governors is considering re-branding the organization to meet these challenges. Why should the AIC apply critical thinking to this decision of potential re-branding?

(1) The re-branding strategy will confirm that the AIC is still the pre-eminent organization in Canada for point-in-time appraisals.
(2) Identifying the issues, problems to be solved, the decision framework, and options for consideration will produce a better outcome.
(3) Critical thinking will confirm and strengthen the decisions made earlier by the Board of Governors.
(4) None of the above explain how critical thinking could improve this decision.

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15 Total Marks

**VIEWING ASSIGNMENT ANSWER GUIDES**

As soon as your assignment has been received and processed by the Real Estate Division, you can immediately download the answer guide. See your Student Handbook or visit your Course Resources webpage for more information on how to download assignment answer guides.
PLANNING AHEAD

1. The major project for this course will incorporate concepts for each of the lessons, and require you to apply these to a real-life real estate scenario needing professional advisory services. You should read ahead to the Project section at the end of this workbook so that you have a better idea of what is expected on this assignment. You should begin thinking now of what topic you may wish to explore — you may want to discuss alternative with your tutor. In Assignment 3, you will choose your topic and prepare a research plan for it.

2. For Lessons 2-5, you will need a copy of the textbook Winning Decisions. If you wish to order a copy, please visit the Real Estate Division's "Online Bookstore". Note also that Lessons 6-8 will require Business Forecasting, Eighth Edition as well as the software program SPSS Version 19 (with the Forecasting module added).