

LITERATURE REVIEW FROM:

THE DEVELOPMENT OF A TEMPORAL LOGIC MODEL

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The following document contains Chapter III: Literature Review from a Master's Thesis entitled, *The Development of a Temporal Logic Model*. The review is intended to provide a foundation for discussions on the design and application of an alternative program logic model based on social learning and open systems concepts. The thesis was presented to the Faculty of Graduate Studies of the University of Guelph in February, 2001.

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Chapter III

Literature Review

3.0 Introduction

Throughout the literature review there is an underlying theme of transition. The paradigm shifts from a closed system and comprehensive planning approach to an open system with social learning. The shift to an open system implies embracing increasing fluctuations, learning, adaptation and removing the boundaries of time. Section 3.5 discusses how a number of current tools and methods, in particular logic models, need to be adapted in order to support this paradigm shift.

The literature review explores how programs are perceived in general systems theory and the social learning paradigm. It then examines how these paradigms are expressed in the monitoring and evaluation literature. The review ends with an examination of logic models, outlining the need for an alternative approach to represent open systems and the social learning paradigm. The wide scope of the review should provide the basis for the discussions in the following chapters.

3.1 The Program as Unit of Analysis

In the *Evaluation Thesaurus*, Scriven defined programs as “the general effort that marshalls staff and projects towards some (often poorly) defined and funded goals” (1991, p.285). Further, he stated that “projects are time-bounded efforts, often within a program” (1991, p.286). The concept of programs as ‘time-bound efforts’ will be

challenged later in section 3.1.3, but first, this section will examine what Shadish, Cook and Leviton described as the territories within programs:

- internal program structure and functioning
- external constraints that shape and constrain programs
- how social change occurs, how programs change, and how program change contributes to social change. (1991, p. 37)

The next sections explores these territories.

3.1.1 Program Theory

Every program contains “ a theory about the way that a program brings about its effects (descriptive program theories) or about ways in which it could bring about improved effects, or the same effects in an improved way” (Scriven, 1991, p.286). In this manner the program theory, also known as the theory of intervention, describes the development theories, conceptual framework, assumptions, and causation behind the program activities. Shadish (1987) breaks down program theory into two categories: microtheory and macrotheory. Microtheory, often described as the program’s black box refers to the technical design of the program. Using a systems approach, the theory explains how the components fit together in the intended process. Accordingly, macrotheory refers to how the program will interact with the surrounding environment and bring about the intended change. Within both micro and macro theories there can be several causal statements.

Scriven defines causation as “the relationship between mosquitos and mosquito bites” (1991, p.77). He further states that causation can be discovered through

illuminative induction or correlation, although both these approaches are subject to situational influences. While seemingly a simple concept, causation can be viewed from different perspectives: social science studies define causation; project planning designs causation; project staff implement causation; monitoring tracks causation; and evaluation assesses causation; current logic model illustrate intended causation.

One of the most frequent criticisms of logic models is that they are based on a predetermined and fixed frame of causation. Authors such as Gasper (1997, 1999, 2000), Perrian (1998), Carden (1999), and others have cited the presumption of a steady flow of causation as the downfall of the logic models. On the ground, projects may merge with other unpredicted developments and have unintended results, both negative and positive. Gasper highlights these concerns in the following statement:

To adopt a logframe as a central tool in effects and impacts evaluation assumes that we have high powers of foresight, so that neither unforeseen routes nor unintended effects are important; or that a narrow private perspective is taken on what are significant effects, rather than a broad concern. Neglect of unintended effects such as externalities (impacts on group other than the targets) could work for a single-mindedly self-concerned organization - but not, for example, for democracy and human rights projects or emergency assistance. (Gasper, 1998, p.24)

Building on Scriven's analogy, causation can be widened to include the relationships between the mosquito, mosquito bite, and malaria. The intention of the mosquito is to draw blood for nourishment, passing on the malaria is an unintended effect. The frequency of the unintended effect depends on the type of mosquito or the geographical location (context) of the bite. Thus, there are diverse effects that may be more or less common depending on the context of the activity (whether the person and

the mosquito are in North or South America). Awareness of contributing influences on causation is essential in understanding how the program theory will work in practice.

The causal inference debate is prevalent in the literature. The issue summed up by the Treasury Board, “that a program ‘produced’ or ‘caused’ a certain result means that if the program had not been there or had been there in a different form or degree, that result or level of result would not have occurred” (1991 p. 2-2). Proving causal inferences means that evaluation needs to utilize an experimental design that compares control groups that have not received the programs with groups that have. This type of methodology is limited in social programs by the complex variables that make replication difficult if not impossible. Further, there are ethical issues in providing social services to one group and not the other.

3.1.2 Program Environment

The follow section briefly examines Shadish’s macrotheory or how program’s intended theory or causality is influenced by ‘external constraints’. There are numerous variables in the environment that influence the program’s intended outcomes and hamper program replication. In the worst case scenario, critical assumptions can often undermine the entire program. Thus, it is important to be aware of the program context, and to make adjustment that mitigate the negative influences and take advantage of the positive.

Emery and Trist examined how the organizational environment influences structure in their work, *The Causal Texture of Organizational Environments* in 1969.

They outlined four types of causal textures that influence the structure of organizations and thus programs:

1. *Placid, randomized environments* do not challenge organizations. Thus the organizations tend to be simple, static, small units with little or no strategies and tactics.
2. *Placid, cluster environments* contain other organizations but have little competition. Organizations have a diverse set of goals, grow in size, and tend to be centrally control although remain static.
3. *Disturbed-reactive environments* are competitive with similar organizations in the same area. Organizational goals tend to stay the same, yet control is decentralized with well developed strategies and tactics.
4. *Environment turbulent fields* are areas of consistent flux. Organizations often operate with regards to other individuals or groups in the field to mitigate the environments negative effects. Organizations interact to ‘provide a control mechanism’ in a complex matrix structure (Emery and Trist in Emery, 1969).

The influence of the organizations environment and their programs is further illustrated in the international development field through case studies such as Cummings’ *Project Planning and Administrative Lessons from the Sulawesi Regional Development Project*. The article tracks the history of this 16-year project to build planning capacity in rural Sulawesi. The author highlights lessons learned and tracks the program’s dramatic transformations. Changes in the rural environment, the Indonesian government, Canadian

aid policy, and intellectual developments in the field influenced the direction and ultimate outcome of the program (Cummings, 1993).

3.1.3 Internal Program Structure

Shadish's microtheory examines the technical components with the program's "black box" which Shadish, Cook and Leviton have summarized as follows:

The internal structure of a program includes its staff, clients, resources, outcomes, administration, internal budget allocations, social norms, facilities, and internal organization. Internal structure also involves how these things are combined in a program model that relates inputs to activities to outputs. (1991, p.38)

While the above list seems to be string of small elements, there is a great deal of debate in the evaluation literature, particularly over outputs, outcomes, and impact.

The literature on outputs, outcomes, and impacts reveal a host of definitions with slight variations. Generally, the literature correlates the terms with immediate, short-term, and long-term results of a

program or project. Their time frame also corresponds with the depth of the information and types of changes. Since profound results tend to take a

longer time to emerge, outputs,

outcomes, and impacts should have deeper and deeper roots in behaviour and societal

Table 3.1: Fowler's Chart

Point of Measurement	What is Measured	Indicators
Outputs	Effort	Implementation of Activities
Outcomes	Effectiveness	Use of outputs and sustained production of benefits
Impact	Change	Differences from the original problem situation

(Oakely, Pratt & Clayton, 1998)

structures as time progresses. This description is illustrated in Fowler's chart shown in Table 3.1.

Outputs are closely related to the activities or program 'deliverables'. They are usually the number of workshops held, number of clients, number of grants distributed, etc. Often already captured in the activities category, this type of detailed accounting was deemed not necessary for the general overview of program design illustrated by the TLM.

Oakely, Pratt and Clayton (1998) offer this definition of outcomes: "The crucial first stage of measurement will be to assess what has been the outcome of the project in terms of the **effect** it has had on the initial situation.... By effect we mean the more immediate tangible and observable change in relation to the initial situation and established objectives, which it is felt has been brought about as a direct result of the project" (p.35). From this description, outcomes become the focus of most evaluation due to their accessible time frame and depth of change. They are also more specifically defined and directly attributable than other results such as impacts, which are discussed below.

In an effort to address the ambiguity surrounding the categorization of different results, IDRC's Outcome Mapping is directed solely towards outcomes. The approach redefines outcomes to accentuate contextual change without restricting it to a specific time frame. For Outcome Mapping, outcomes are "Changes in the behaviour, relationships, activities, and/or actions of boundary partners that can be logically linked, although are not necessarily directly caused by, a project or program"(2000, p.i). Outcome Mapping also substitutes attribution for contribution in the terms 'logically

linked ... not necessarily directly caused by'. This represents a strategic shift away from tracking quantifiable production to a learning organization approach.

According to Fowler's Chart, impacts are the long-term results that imply a broader societal change which may only be measured several years after the program is completed. Some examples of impacts are: an increased standard of living, human resource development, gender equality, increased political awareness of environmental issues. Although this information is most desirable for the stakeholders, impacts are rarely measured because they are too general for direct attribution and the length of time it takes for real impacts to emerge (Oakley, Pratt and Clayton, 1998).

The depth or extent of change in behaviour forms an interesting outcome dynamic with accountability. As you move from outputs to impacts, the level of program influence decreases. Conversely, the level of stakeholder involvement increases along the same path. The results are inadequate stakeholder involvement for behavioural changes in outputs and inadequate program influence for accountability in impact. The two variables intersect at outcomes, providing partial involvement of stakeholders to encourage behavioural change and partial program influence to allow for accountability. Thus outcomes become the target for measuring behavioural change in a program (Smutylo, 2000).

In an effort to maintain a long-term emphasis without entering an expensive and undetermined search for impacts, the TLM described in Chapter IV, replaced 'impacts' with 'sustainable strategies'. This still keeps an emphasis on long-term planning, but focuses on the ex-ante and implementation program stages rather than the ex-post.

‘Sustainable Strategies’ asks the question *‘What are the program strategies for ensuring that the program’s positive effects continue beyond your program’s involvement?’* This requests the program stakeholders to plan several strategies to ensure that the activities are fully integrated into the target community. The strategies are not intended to promote self-perpetuating organizations, but to assist the realization of the long-term goals of the program within the target community. Sustainable strategies could include empowerment activities, mentoring community members in program management, revolving funds for development.

The TLM, presented in the next chapter, provides a unique results approach by incorporating a more rounded definition of outcomes and sustainable strategies in a process-oriented framework. It is intended to focus on meaningful change without over-reporting on details and unattainable attribution for long-term effects. The long-term vision is maintained by illustrating strategies that actively seek sustainability. By creating a space to illustrate both process and outcome, the TLM seeks to reach a balance between the two approaches.

3.1.4 The Element of Time in Programs

Prigogine outlined several different perspectives of time when he posed the question “How can we relate to these various meanings of time - time as motion, as in dynamics; time related to irreversibility, as in thermodynamics; time as in history, as in biology and sociology?” (1980, P.xii).

In program management time is viewed as a fixed 'motion'. It is a limiting variable in which priorities and activities are defined within a determined deadline. Getubig and Shams (1991) use this notion in their book *Reaching Out Effectively* by posing the question, "Does the design of the programme provide sufficient time for continued support to each poor person or household covered in the programme?" (p. 36) This perception of time is also expressed in the very existence of short-term and long-term planning.

In contrast, Jantsch's (1980) concepts of time and planning are based on open systems and an evolutionary perspective corresponding with Prigogine's (1980) option of time as history. Managers should be able to work simultaneously on different levels (short, intermediate and long-term plans). These concepts of time are described in the following quote:

Multilevel planning not only links the perspectives of different time horizons, but also different basic attitudes and logic. Elsewhere (Jantsch, 1975) I have described these basic attitudes or world views with the help of a metaphor, namely, the relations which we may establish with a stream. Standing on dry land on one bank and watching the stream go by corresponds to a *rational* attitude. If we try to steer our canoe in the stream, in direct interaction with its forces and keeping proper distance from both banks, we are taking a *methodological* attitude - we enter into a direct relationship with the life forces around us, we deal with them at their proper level, we become involved and try to influence the overall process. But if we imagine that we are the stream, just as a group of water molecules is the stream and at the same time only one of its aspects, we are experiencing an *evolutionary* attitude. (Jantsch, 1980, p.267)

Jantsch advocates that the planning should strive for increasing complexity in order to take advantage of evolutionary opportunities. These opportunities involve an increasing understanding, creativity, and questioning of the organization itself. For these reasons

Jantsch argues to keep the system (organization or programs) open at the top to allow for maximum flexibility.

Removing the artificial boundaries of time dramatically changes the program perception. The program becomes an evolutionary process that emerges from and converges with societal trends, thus taking the emphasis off a fixed funding period and program structure and placing it on development activities as ongoing processes, which are part of Jantsch's evolutionary stream. This means accepting systems fluctuations, adaptations, and learning as ever-present. The research contained in this thesis embraces an evolutionary perspective of the program and draws a relationship between evolutionary programs, open systems, and social learning. Further, it reconstructs the logic model to illustrate the program as an evolutionary system.

3.2 General Systems Theory

There are three distinct branches of this theory that describe how we can perceive programs as systems: hard systems, which are closed representations of structures; open systems, which are dynamic evolutionary processes of change; and soft systems, which are methods of modelling, interpreting, and planning interventions. Corresponding with the transition from closed to open systems, Senge also uses detailed and dynamic complexity.

3.2.1 Hard Systems

The hard systems approach describes a cause and effect process contained in a closed environment. In the design phase, the system's feedback loops, potential issues, and components are identified and assembled (Checkland, 1990). Implementation is merely a matter of executing the prescribed activities according to the plans. The success of the system or program can then be measured by comparing the end results against the original blueprint. Two of the key assumptions are that the original designers/planners have comprehensive knowledge of the situation and that there are no external factors which could interfere with implementation. This type of systems approach formed the basis of social engineering, policy analysis, and management science that emerged in the post-World War II era (Friedmann, 1987).

Hard systems research introduced terms such as inputs, outputs, and feedback loops to accompany management tools such as program logic models. Logic models provide a sketch of the program components and how they are linked together. While

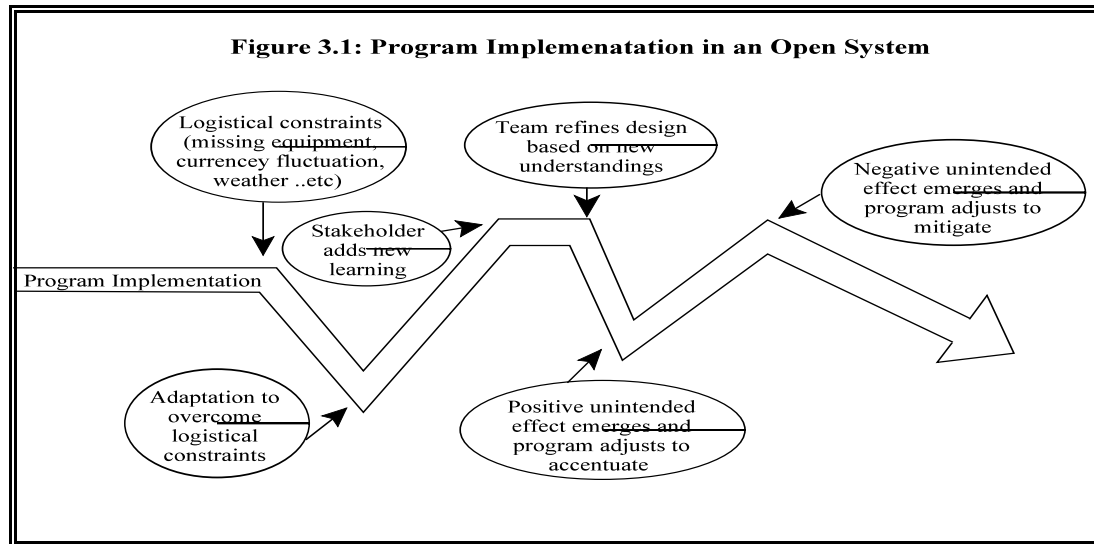
useful for providing a quick administrative overview, they have been highly criticised for presenting a closed system image which rarely occurs in practice.

3.2.2 Open Systems

Ludwig von Bertalanffy's distinction between closed and open systems sparked the development of a more organic view of systems as a continual process accessible to outside influences (Checkland, 1981). An open systems view creates a more dynamic and complex understanding of systems that better reflects the program and project implementation process. Open systems contain several key elements summarized by Carden:

The process in a system is copoetic; order is created out of chaos through a collective process of interaction. The structure is dissipative; that is, order is achieved through fluctuation; stability is long-term not short-term and in the short term structures may appear highly unstable and uncertain. Evolution is self-transcendent. That is, the evolution of a system is through its changing its own consciousness and breaking the symmetry in which it exists. (Carden, 1990)

Figure 3.1 illustrates how the program progress in an ongoing dialogue with complex external factors. Program design should change as the program adapts to a sometimes chaotic environment, unintended effects emerge, or program assumptions are undermined. From this perspective, program management corresponds with Schon's critique of the technical rational in support of the reflective practitioner described in the next section.



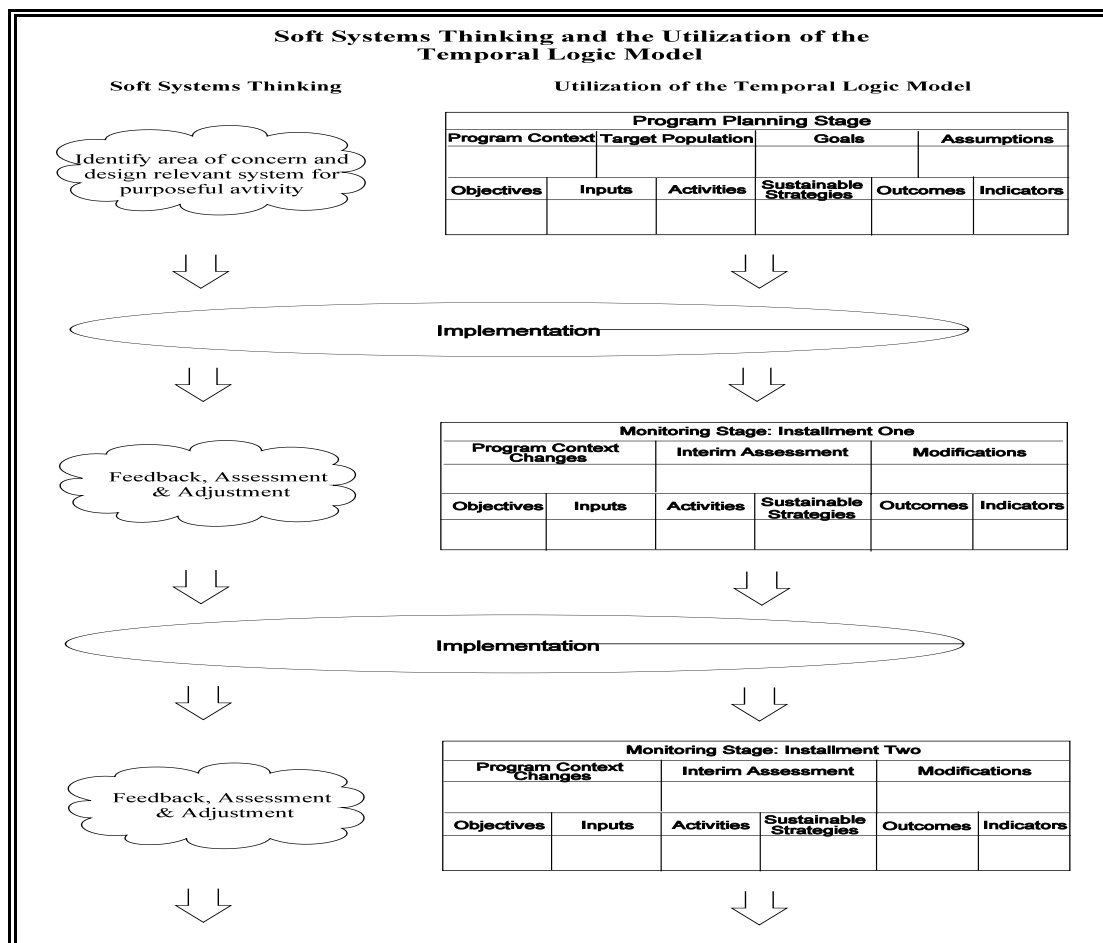
3.2.3 Soft Systems

Soft systems are unique in General Systems Theory because they identify a method of interpreting systems rather than describing characteristics and rules surrounding the system itself. According to Checkland and Scholes:

The basic shape of the approach is to formulate some models which it is hoped will be relevant to the real-world situation, and use them by setting them against perceptions of the real world in a process of comparison. That comparison could then initiate debate leading to a decision to take purposeful action to improve the part of the real life which is under scrutiny. (1990, p.6)

They further describe how the model moves through a continuous process of feedback, assessment, and adjustment. Throughout this cycle the stakeholders are continually trying to incorporate more and more complexity to gain a better representation of our immense reality.

Given this analysis, traditional logic models illustrate a hard systems perspective of international development programs. In contrast, the alternative logic model (TLM) proposed in the next chapter seeks to be a soft systems method that could assist stakeholders to understand the program as an open system. These concepts are illustrated by Figure 3.1, which depicts program implementation in an open system, and Figure 3.2, which correlates soft systems thinking with the implementation of the TLM described in Chapter IV.



3.2.4 Systems and the Learning Approach

Although Senge does not recognize his predecessors' work in General Systems Theory, he makes a key connection between organizational learning and systems thinking. He describes the systems perspective as “a sensibility - for the subtle interconnectedness that gives systems their unique character” (1994, p.73). The key to systems thinking lies in two aspects: “seeing interrelationships rather than linear cause-effect chains, and seeing processes of change rather than snapshots” (1994, p.73). In this way, the complexity of reality can be dealt with by examining the cause, structure and behaviour underlying the issues.

In this argument, Senge makes the distinction between detailed and dynamic complexity. While detailed complexity focuses on a linear causation surrounded by unlimited variables and factors, dynamic complexity describes “situations where cause and effect are subtle, and where the effects over time of interventions are not obvious”(1994, p.71). Senge also moves away from linear causation towards circular cause and effect by examining feedback loops.

The feedback loops are enriched by the learners, who are active parts of the system. Senge states: “From the systems perspective, the human actor is part of the feedback process, not standing apart from it”(1994, p.78). From this vantage point, actors can constantly reflect on and adjust their behaviour to balance or reinforce stability within the system. Senge's description corresponds to the learning approach by having actors adjust the program during implementation, based on increasing knowledge of the program.

3.3 Social Learning Paradigm

Planning emerged in the later half of the 19th century and the beginning of the 20th with scholars such as St. Simon, Frederick W. Taylor, Max Weber, and Rexford G. Tugwell, who applied the principles of science, logical positivism, and rationalism to social organization (Friedmann, 1987). Systems planning was formulated as a rational means/ends analysis in this early planning era. The original and most rigid form of systems planning is referred to as the ‘blueprint’ approach. Two of the core assumptions are that the expert planner can acquire comprehensive knowledge of the situation which can be applied in a rational process, and that the problem being addressed is static (Friedmann, 1987). The social learning paradigm slowly emerged in the 20th century to challenge the assumption of comprehensive knowledge and the lack of reflection on practice.

Social learning claims that comprehensive knowledge of a situation is virtually impossible, and that program stakeholders are continuously learning from their interactions with each other and the program environment. It recognizes that individuals and groups gain wisdom through their practices and experience. For this reason, plans must remain flexible and responsive to their environment in order for the participants to benefit from program learning.

3.3.1 Learning Through Action

Friedmann traces the origins of the social learning paradigm to John Dewey and his focus on action and ‘learning by doing.’ He professed that humans actualize their

destiny through learning from their successes and failures, and that the knowledge gained through experience formed the basis of our perceptions of the world (Friedmann, 1987). Friedmann expands the concept of action to include “transactive learning which is mutual learning through a relationship of dialogue” (1987, p.216). Michael Polanyi identifies a third type of knowledge referred to as “tacit knowledge”, which Schon defines as “essentially the acquisition of a skill; the feelings of which we are initially aware become internalized in our tacit knowing” (1983, p.52). All of these definitions tie the concept of ‘knowing’ and ‘knowledge’ to life experiences.

3.3.2 The Reflective Practitioner

Schon’s popular book *The Reflective Practitioner* (1983) attacks technical rationality for its focus on problem-solving rather than problem-context and the assumption of consensus on what the ‘ends’ of a plan should be. He examines the modern professional as an artisan rather than a technical rational scientist. In his view, the professional artisan utilizes two types of action: “knowledge-in-action” and “reflection-in-action”.

Knowledge-in-action refers to a practitioner’s conscious and unconscious “know-how”. With this kind of knowledge, strategies, plans or procedures are designed before the action takes place. The ‘know-how’ can become so routine that the professional may not be aware of its structure.

Schon further describes “reflection-in-action” as:

When someone reflects-in-action, he becomes a researcher in the practice contexts. He is not dependent on the categories of established theory and technique, but constructs a new theory of the unique case. His inquiry is not limited to a deliberation about means which depends on a prior agreement about ends. He does not keep means and ends separate, but defines them interactively as he frames a problematic situation. He does not separate thinking from doing, ratiocinating his way to a decision which must be later converted to action. Because his experiment is a kind of action, implementation is built into his inquiry. Thus reflection-in-action can proceed, even in situations of uncertainty or uniqueness, because it is not bound by the dichotomies of Technical Rationality. (Schon, 1983, p.68)

3.3.3 Responding to the Environment

The learning paradigm grew from this initial description of experiential learning to include an emphasis on the context in which humans organize, plan, and learn. Lewis Mumford stated that regional planning needed the involvement of the various aspects of the community in a plan based on “renewal: flexibility: adjustment: these are essential attributes of all organic plans” (Mumford in Friedmann, 1987, p.198). In 1965 Emery and Trist examined “zones of turbulence” in the planning context. This type of emphasis on learning and growing within a changing context is also seen in Argyris and Schon’s description of how “a new organization format takes shape, one that is characterized by temporality and fluidity and requires continual redesign and adjustment” (Friedmann, 1987, p.214).

3.3.4 Learning Loops

Argyris and Schon embedded the ideas of learning through action in the ‘learning loop’, which refers to a continuous cycle of action, reflection, adaptation, and further

action. These learning loops occur (often spontaneously) on a variety of different subjects, stages, and timings, depending on the challenges of the group. One group could go through this learning process several times in any given activity. Argyris and Schon argued that it was important to “shift organizations from an existing capacity for ‘single-loop’ learning to a new and a more sophisticated capacity for ‘double-loop learning’” (Friedmann, 1987, p.185).

The concept of learning loops was later expanded by the idea of triple-loop (which examines deeper paradigm shifts) and Bateson’s Deutro-learning. Deutro-learning refers to an individual/group’s ability to sustain the process of double and triple-loop learning, thus incorporating the learning processes into the organizational culture. The levels of learning-loops are defined as follows:

<i>Single-loop learning</i>	When a problem arises, the individual/group attempts to fix the problem within the system. Analysis is limited to problems within the defined program parameters, and answering questions of how to fix the problem.
<i>Double-loop learning</i>	When a problem arises the individual/group reflects on the whole system. Analysing the problem and the systems in which it operates, answering questions about why the problems occurs in the system and asking critical questions of whether the structure needs to be changed.
<i>Triple-loop Learning</i>	When a problem arises the individual/group reflects on the systems and the theories and assumptions which created the

system. Critical questions are focussed on paradigm shifts and radical transition.

Deutro-learning

When an individual/group learns how to learn, essentially they incorporate this deeper critical thinking of double and triple loop learning into daily operations.

It is interesting to note that the learning-loop is problem-based learning connected to life experiences. It is inevitable that problems will arise in program implementation that will require the practitioner to analyse and adapt the design. This learning process can create opportunities for constructing new knowledge in a number of areas.

3.3.5 Organizational Learning

Gavin defines a learning organization as “an organization skilled at creating, acquiring, and transferring knowledge, and at modifying its behaviour to reflect new knowledge and insights” (Seita, Alie and Crumm, 1996, p.53). A learning organization will gain knowledge from its past activities, have new insights, and observe any changes in the program’s context. Based on the resulting analysis, the program can adapt and grow. While the learning approach focuses on growth, process, and responsiveness, program accountability remains an underlying theme. Through the learning process we can improve on the efficient use of funds, deliverable results, and wise management.

Bovin, discussing the dynamic between the individual and group, states: “There is emphasis on two aspects: The learning done by individuals and the learning done by the organization” (Bovin in Prokopenko, 1998, p.363). These two elements are intricately

interconnected - as the individual's learning grows and gains momentum, organizational learning is initiated. The organization can create conditions for such learning by introducing policies of training, sharing knowledge, and rotating positions within organization.

Bainbridge, Foerster, Pasteur, Pimbert, Pratt and Arroyo's thorough literature review and an annotated bibliography provide the following comprehensive list of characteristics of learning organizations:

- the leaders calculate risk-taking and experimentation
- decentralised decision making and employee empowerment
- skill inventories and audits of learning capacity
- systems of sharing learning and using it in the business
- rewards and structures of employee initiative
- consideration of long term consequences and impact on the work of others
- frequent use of cross-functional work teams
- opportunities to learn from experience on a daily basis
- a culture of feedback and disclosure
- continual learning and self-transformation (2000, p.11)

These qualities correspond with the characteristics in the competing alternative category in Patton's evaluation taxonomy discussed in the next section.

In recent years the new catch phrase 'organizational learning' has taken root. With heavy backing from large corporations, MIT's Micheal Senge and the Center for Organizational Learning produce numerous publications available on their website. This growing management trend is modelled after successful companies such as 3M, which has created a number of policies to support organizational learning. The policies include marketing within the company, guaranteed time and space for employees to experiment with their ideas, and critical reflection on the activities.

3.4 Monitoring and Evaluation

It is easier to select a method for madness than a single best method for evaluation, though attempting the latter is an excellent way of achieving the former.
(Patton, Utilization-Focussed Evaluation)

In general, program monitoring and evaluation is a set of activities that systematically gathers information on the program and determines value for accountability and learning. As a subset of management, evaluation is the overall assessment of the program, while monitoring is an incremental collection of data and preliminary analyses which may result in adjustments during program implementation. Despite these definitions, the concepts are often used interchangeably or monitoring is dropped to a secondary position. Although in this paper the author uses monitoring and evaluation as a single term in order to emphasize the continuous aspects of the activity, the literature tends to refer to the duo as simple evaluation.

While it is certain that monitoring and evaluating one's surroundings has been a natural part of the human cognitive process for centuries, formal program evaluation did not emerge until the last half of the 20th century. Roosevelt's New Deal triggered a rise in government-sponsored social programs which in turn saw the rise in questions of program effectiveness, efficiency, impact, and rationale (Chelimsky & Shadish, 1997). In those early days, experts from the program's subject area were enlisted for the review. As a result, educators, psychologists, policy analysts, and economists all developed different evaluation theories and methodologies based on their respective disciplines.

The optimism of the modern era was reflected in the evaluation literature, particularly in ideas such as Donald Campbell's "experimental society". Based on

Darwin's concept of natural selection, evaluation would be used as a tool to select successful social programs for replication and to cancel those which were deemed unsuccessful. In this environment, innovative social programs would be tested as pilot projects in an apolitical and objective manner (Shadish, Cook & Leviton, 1991). It was naively hoped that the evaluation process would increase the government's capacity to implement programs and resolve social problems.

The modern era of evaluation was soon challenged by an array of alternative concepts. Questions about scientific knowledge construction and social programming would give rise to numerous competing theories. Unfortunately, the resulting academic debates did not evolve into resolution or even a cohesive typology. Instead, exhausted practitioners refocused on evaluative practice, relying on selected theoretical components as needed.

Given this history, the evaluation field today can be characterised as multi-disciplinary, methodologically-driven, and having practical roots. This legacy, which leaves the field without consensus on a particular theory or taxonomy, was recognized by the American Council of Voluntary Agencies for Foreign Services when they stated:

In our examination of the evaluation field we have found a welter of diverse opinions and conflicting arguments, too often a splitting of hairs argument more commonly associated with the discourse of philosophers and theologians. These differences not only cover issues concerning what is appropriate evaluation practice, but they also include marked differences over the very terms of classification. (Pietro (ed.), 1983, p.3)

In this context, the following section describes Shadish, Cook and Leviton's criteria for a theory of program evaluation and then presents an overlay of six different

taxonomies that reinforce three overriding trends identified by Patton. Issues of ‘marked differences over the very terms of classification’ will emerge as part of the analysis.

3.4.1 Evaluation Theory

The most inclusive attempt to develop an evaluation theory was presented in Shadish, Cook and Leviton’s book *Foundations of Program Evaluation*. The authors abstracted five key components of the literature to describe what an evaluation theory should contain:

The fundamental purpose of evaluation theory is to specify feasible *practices* the evaluators can use to *construct knowledge* of the *value* of *social programs* that can be *used* to ameliorate the social problems to which programs are relevant. (1991, p.36)

Each of the italicized terms represents an area of debate discussed in the works of Scriven, Campbell, Weiss, Wholey, Stake, Cronbach, and Rossi. The five key components embedded in the statement above are further refined as follows:

- (1) social programming: the way that social programs and policies develop, improve, and change, especially in regard to social problems;
- (2) knowledge construction: the researchers learn about social action;
- (3) valuing: the ways value can be attached to program descriptions;
- (4) knowledge use: the ways social science information is used to modify programs and policies;
- (5) evaluative practice: the tactics and strategies evaluators follow in their professional work, especially given constraints they face. (1991, p.32)

Each of these five areas is a rich source of debate. Unfortunately, the confines of this discussion only allow for these brief definitions. However, issues of knowledge construction, knowledge use, social programming, and feasible evaluative practice will resurface in the following section.

3.4.2 The Taxonomy of Evaluation

Table 3.2 arranges six taxonomies. The categories are: (1) Preskill & Torres Eras, (2) Patton's Thesis, (3) Aubel's Approaches, (4) Easterly-Smith's Focusses, (5) Program Components, and (6) Evaluation Persuasions. While the different taxonomies emphasize a variety of evaluation issues, they can be fitted into two themes based on knowledge construction and one on knowledge use.

3.4.2.1 Preskills & Torres' Eras

Preskill and Torres' *Evaluative Inquiry for Learning in Organizations* links a societal level transition from the industrial to the knowledge era to the restructuring of organizations. The authors identify characteristics of organizations in the industrial era as:

hierarchical chain of command, competitive advantage, control, managers control and maintain stability, a few performance information system, bureaucratic rules and policies, power over others, information held by a few, emphasis on repetition, risk averse, interest in short-term gains (1999, p.8).

Preskill & Torres argue that the economy is moving away from this factory-type production towards a new era that requires a reshaping of the organizational structure.

Table 3.2: Overlay of the Evaluation Taxonomies

Authors	Taxonomies Based on Knowledge Construction			Taxonomy Based on Knowledge Use
Preskill & Torres’ Eras	Industrial Era		Knowledge Era	
Patton’s Thesis	Thesis (Scientific Paradigm)		Antithesis (Competing Alternative Paradigm)	Synthesis (Utilization-Focussed Evaluation)
Aubel’s Approaches	Blueprint Approach		Learning Process Approach	
Program components	Summative (Outcome Assessment Evaluation & Process Assessment Evaluation)		Formative (Outcome-Improvement Evaluation & Process-Improvement Evaluation)	
Easterly-Smith’s Focusses	Scientific	Systems	Illuminative	Interventionists
Persuasions	►Academic Research	►System Analysis ►Goal-Based Evaluation ►Logical Framework Analysis (LFA) ►Results-Based Management (RBM)	►Goal-free Evaluation ►Naturalistic ►Process Focussed Evaluation ►Professional Review	►Responsive Evaluation ►Utilization-Focussed Evaluation

Accordingly, the organizational structures in the knowledge era would entail:

self-governing teams and networks, collaborative advantage, commitment, managers coach and lead, proliferation of performance information systems, fewer rules and policies, sharing power with others, information disseminated and available to all, emphasis on problem solving, risk tolerant, interest in continuous improvement and long-term gains. (Preskills and Torres,1999, p.8)

This argument includes an emphasis on intellectual capital, organization change, adaptation, and responsiveness to the environment.

The societal transition from industrial to knowledge era forms the foundation for Preskills and Torres' presentation of the evaluation approach in *Evaluative Inquiry*. In this work, they draw on a rich history of adult education, organizational development theory, and change theory to describe alternative methods of monitoring and evaluation that correspond with new perspectives on organizational structure.

3.4.2.2 Patton's Thesis

Patton also identifies two competing paradigms in the literature. His taxonomy is composed of the thesis of the scientific paradigm (industrial era), an antithesis or competing alternative (knowledge era), and a synthesis in the form of his own utilization-focussed evaluation. As apparent in Table 3.3, Patton identifies the two paradigms based on knowledge construction, while his proposed synthesis is based on knowledge use.

Table 3.3: Patton's Evaluation Methods Paradigms Debate Summary of Emphasis: Thesis, Antithesis, Synthesis (Patton, 1997, p.299)			
	Thesis: Originally Dominant "Scientific" Paradigm	Antithesis: Originally Competing Alternative Paradigm	Synthesis: Utilization-Focussed Evaluation, A Paradigm of Choices
Purpose	Summative	Formative	Intended use for intended users
Measurement	Quantitative data	Qualitative data	Appropriate, credible, useful data
Design	Experimental designs	Naturalistic inquiry	Creative, practical, situationally responsive designs
Researcher's Stance	Objectivity	Subjectivity	Fairness and balance
Inquiry Mode	Deduction	Induction	Either or both
Conceptualization	Independent and dependent variables	Holistic interdependent system	Stakeholder questions and issues
Relationships	Distance, detachment	Closeness, involvement	Collaboration, consultative
Approach to Study of Change	Pre-post measures, time series, static portrayals at discrete points in time	Process-oriented evolving, capturing ongoing dynamism	Development, action-oriented: What needs to be known to get program from where it is to where it wants to be?
Relationship to Prior Knowledge	Confirmatory, hypothesis testing	Exploratory, hypothesis generating	Either or both
Sampling	Random, probabilistic	Purposeful, key informants	Combination, depending on what information is needed
Primary Approaches to Variations	Quantitative differences on uniform, standardized variables	Qualitative differences, uniqueness	Flexible: Focus on comparisons most relevant to intended users and evaluation questions
Analysis	Descriptive and inferential statistics	Case Studies, content and pattern analysis	Answers to stakeholders' questions
Types of Statements	Generalizations	Context-Bound	Extrapolations
Contribution to Theory	Validating theoretical propositions from scientific literature	Grounded theory	Describing, exploring, and testing stakeholders' and program's theory of action
Goals	Truth, scientific acceptance	Understanding, perspective	Utility, relevance: Acceptance by intended users

The thesis and antithesis can be characterized by the quantitative/qualitative debate which dominated early evaluation literature. In the quantitative camp, Berstien and Freeman's 1975 assessment of the quality of evaluation research ranked experimental or quasi-experimental randomization and control groups as the highest form of evaluation design. Their recommendations were taken into consideration for U.S. Federal support. This nominal use of ordinal data outraged many in the field (Patton, 1997) and serves to illustrate the depth of polarization of the debate during this period.

The competing alternative paradigm focussed on qualitative techniques. This side of the debate was informed by academics such as Kenneth Strike and his 1972 introduction of *verstehen*. He explains:

The tradition of *verstehen* places emphasis on the human capacity to know and understand others through sympathetic introspection and reflection based on detailed description gathered through direct observation, in-depth open-ended interviews, and case studies." (1982, p.44)

The emphasis on contexts and understanding the stakeholder's perspective was further explored by participatory and naturistic approaches.

The debate over quantitative data versus qualitative data goes beyond the methods to the understanding of truth. Guba and Lincoln's *Fourth Generation Evaluation* (1989) was aimed at debunking scientific positivism and evaluation's reliance on quantitative data. They provided a cohesive argument for a constructivist or a post-positivist conception of knowledge that entails accepting that there may be more than one 'truth'. If it is accepted that there is more than one truth or legitimate perspectives of that truth, then this radically changes how the evaluation is conducted. The evaluation should seek

out individual stakeholders' perspectives and incorporate them into the analysis. The objective is not to say what happened or what did not happen, but to form a consensus on the past, present, and future of the program if possible (Guba and Lincoln, 1989).

Patton by-passes the debates between the two paradigms by offering his own synthesis. Instead of starting with knowledge construction, he begins with knowledge use. As Patton defines his approach, "Utilization program evaluation (as opposed to program evaluation in general) is evaluation done for and with specific, intended primary users for specific, intended uses" (1997, p.24). He emphasises producing useful program information for the primary users. In this manner, the evaluation can borrow from both paradigms, depending on the situation.

3.4.2.3 Aubel's Approaches

Judi Aubel begins her *Participatory Program Evaluation Manual* by stating: "Many evaluations provide information for accountability purposes but do not generate lessons for the future"(1999, p.7). In setting up her argument for learning, she simply juxtaposes the two approaches known as the blueprint and the learning process approach.

The blueprint approach is defined as a "top-down approach to evaluation, which measures program accomplishments against program objectives, defined in the original blueprint"(Aubel, 1999, p.4). Korten and Klauss (1984) more thoroughly describe this classic approach as following three steps: (1) the planner designs a program based on all necessary and reliable information; (2) s/he then administers the plan to the participants; and (3) an evaluation is conducted to judge performance and inform the next program.

The plan or 'blueprint' acts as an overall reference throughout the program life cycle.

Aubel also attaches the descriptions of "setting targets, objectivity, quantitative methods, and external evaluators" (1999, p. 4) to this style of planning.

In contrast to the Blueprint approach, Aubel defines the "Learning Process Approach: An approach to evaluation which focusses on developing lessons for future program implementation based on the analysis of the program and constraints" (1999, p.5). This approach expands the analysis from an end-of-program comparison of the ideal model with what really happened, to include the monitoring of the learning cycle (action, reflection and adaptation) throughout the programs' implementation, and thereby subjecting the blueprint to periodical critiques and amendments. Aubel attaches the characteristics of "holistic analysis, use of qualitative and quantitative methods, subjective judgement, involvement of stakeholders" (1999, p.5).

In the industrial era, knowledge construction was based on scientific positivism. From the program perspective, this meant that once a problem was identified, a rational comprehensive system was constructed and problems were solved or outcomes achieved (Friedmann, 1987). In contrast, the learning approach to programs expands beyond the bounds of Shadish's program black box. It views the program as being in continual interaction with its context. Emphasis is placed on the process of cause and effect and the process of implementation. It is through the implementation process that lessons can be learned. In essence, the competing alternative approach has challenged and expanded how the development field views social programs.

3.4.2.4 Program Components

Scriven and Chen both focus on evaluation by breaking down the program microtheory, in essence cracking open Shadish's black box and identifying the components within. By evaluating different components in the program (not just the inputs and outputs of the box) they have made a distinction between the two evaluation focusses, process and outcomes.

Scriven's simple distinction between formative and summative evaluation is one of the most widely used taxonomies. Formative refers to an evaluation which occurs during the program as a means of improvement, while summative is an ex-ante evaluation that judges the program and determines value (Scriven, 1991). In Robert Stake's words: "When the cook tastes the soup, that's formative evaluation; when the guest tastes it, that's summative evaluation" (Chen, 1996, p.122). Patton places Scriven's typology of summative in the "scientific category" and formative in the "competing alternative category".

In his 1996 article "Evaluation Practice", Chen argues against the distinction between formative and summative. The underlying theme of his case is that determining value and improving the

program can happen in both formative and summative approaches. To address these ambiguities, Chen put forth an expanded definition. He

Table 3.4: Chen's Cube			
Program stages	Improvement		Assessment
	Process	Process-Improvement Evaluation	Process-Assessment Evaluation
	Outcome	Outcome-Improvement Evaluation	Outcome-Assessment Evaluation

proposes the cross-referencing of program evaluation functions (improvement and assessment) with program stages (process and outcome). The result is the formation of four categories:

1. Process-Improvement Evaluation - “refers to providing information on relative strengths/weaknesses in program structure or implementation processes for the purpose of improving the program”
2. Outcome-Improvement Evaluation - “assesses the relative strengths and/or weaknesses of program elements of implementation processes as they affect program outcomes, in both the instrumental or conceptual sense.”
3. Process Assessment Evaluation - “is conducted for the purpose of judging the merits of the implementation process.”
4. Outcome Assessment Evaluation - “is to provide an overall judgement of a program in terms of its merit or worth.” (Chen, 1996, p.124)

Both Scriven’s and Chen’s typology describe when and for what purposes an evaluation may be conducted from an administrative perspective. Further, the typologies highlight the program and evaluation distinction between outcomes and process, and improvement and assessment.

3.4.2.5 Easterly-Smith’s Focusses

Easterly-Smith (Prokopenko, 1998) takes the focus further in addressing how the evaluation is conducted, methods/features, usage, and weaknesses. The four areas he identifies – Scientific, Systems, Illuminative, and Interventionist – correspond with earlier divisions in the field of scientific, competing alternative, and utilization.

Table 3.5: Easterly-Smith's General Models of Evaluation				
	Scientific	Systems	Illuminative	Interventionist
Main purposes	Proving	Controlling; improving	Proving ; improving	Improving and learning
Methods/features	Measure/pre-post tests; control groups; statistics	Rating scales; outcomes compared to objectives	Observation; progressive focussing; discussion	Short questionnaires and interviews; focus on stakeholders' questions
Usage	Very rarely used; largely myth	Most common model for training evaluation	useful for new programs; inside stories	Adopted by consultants; effective lever for changing things
Weaknesses	Usually inconclusive; complex and expensive; often irrelevant	Picks up trivial outcomes; assumes objectives are real	Costly; difficult to use results	May be seen as bias

The scientific approach is rarely used in the field. It requires close adherence to quantitative and academic guidelines. The systems¹ approach defined by Easterly-Smith views social programs from the blueprint or closed system perspective, and is organized around a process of causation where inputs, outputs, and results can be measured.

The concept of illuminative evaluation was first introduced by Parlett and Hamilton in 1976:

Illuminative evaluation takes account of the wider contexts in which education programs function. Its primary concern is with description and interpretation rather than measurement and predictions. It stands unambiguously within the alternative anthropological paradigm. The aims of illuminative evaluation are to study the innovatory program: how it operates; how it is influenced by the various school

1. There is a tendency in the evaluation field to equate hard systems with one systems approach, ignoring the more organic open systems and the flexible modelling found in soft systems. The discrepancy can stand for the purposes of this discussion.

situations in which it is applied; what those directly concerned regard as its advantages and disadvantages; and how students' intellectual tasks and academic experiences are most affected. It aims to discover and document what it is like to be participating in the scheme, whether as teacher or pupil, and, in addition, to discern and discuss that innovation's most significant features, recurring concomitants, and critical processes. In short, it seeks to address and illuminate a complex array of questions. (Parlett & Hamilton in Patton, 1997, p.55)

In this manner illuminative evaluation relies on qualitative data to describe program issues, and fits into Patton's alternative competing paradigm.

Easterly-Smith's fourth category parallels Patton's synthesis. The Interventionist category is described as "geared more towards the questions of stakeholders and producing information which can lead to changes taking place"(Easterly-Smith in Prokopenko, 1998, p.162). The emphasis is placed on the situation of the program, usefulness, and cost effectiveness. These characteristics correspond with Patton's utilization-focussed evaluation.

3.4.2.6 Evaluation Persuasions

The combination of Shadish, Cook and Leviton's five theoretical variables, an atmosphere of changing paradigms, and a variety of program perspectives, has fostered a plethora of frameworks in evaluation practice. The literature review found that the majority of evaluation literature focussed on the 'how-to manuals'. In his 1997 *Utilization-Focussed Evaluation*, Patton provides a three-page menu listing possible types of evaluation frameworks. The list ranges from his own utilization-focussed evaluation, to participatory, process focus, outcomes evaluation, and diversity focus, to

evaluability assessment. He himself admits that this is by no means an exhaustive list. It is striking that at the methodological level all one needs to do is add an adjective to describe a type of evaluation and a new methodology or framework emerges.

Given this context, House provides a rich schema in his 1980 publication *Evaluating with Validity*. He lists eight models or approach-based schemas presented by Stake (1976), Popham (1975) and Worthen and Sanders (1973): systems analysis, behavioural objectives, decision-making, goal-free, art-criticism, professional review, quasi-legal, and case study. The American Council for Voluntary Agencies for Foreign Services identifies five primary persuasions in the evaluation field. They are similar to House's and include goal-based, decision-making, goal free, expert judgement, and naturalistic.

These frameworks were correlated within the taxonomy illustrated in Table 3.1. The process substantiates four main themes already found in the literature: (1) Academic Research, (2) Goal-Based Evaluation, (3) Emergent Evaluation, and (4) Decision-Making.

(1) Academic Research: This category is a small but valuable portion of the evaluation field. The investigation is targeted towards furthering academic knowledge about social programs and/or the evaluation field, rather than developing relevant information for management. It tends to be less constrained by cost and time concerns. As a result, the standards for validity tend to be much higher.

(2) Goal-Based Evaluation: This category includes concepts such as results-based management, the blueprint approach, logical framework analysis, and scientific approaches. The focus is on determining if the program achieved what it set out to do. It entails comprehensive knowledge of the subject, a clear blueprint of the program, and summative evaluation.

(3) Emergent Evaluation: This category includes Scriven's goal-free evaluation and Guba and Lincoln's naturalistic inquiry. The emphasis is on examining the reality of the program in the absence of, or with slight reference to, the original plans. This field also focusses on the program's process of cause and effect as well as the process of implementation. Although not exclusively, emergent evaluation tends to rely on qualitative data gathered from the program stakeholders.

(4) Decision-Making: This category includes Robert Stake's responsive evaluation and Michael Quinn Patton's utilization-focus evaluation. Although these frameworks have various emphases, they provide useful information about the program to decision-makers, who may represent stakeholders, participants in the program, or bureaucrats. The emphasis is on finding and disseminating relevant information for intended users. In this framework the intended user's needs may vary from information about results achieved, to stakeholder interpretation of program, and/or an analysis of the implementation process. In this manner the category can complement other evaluation strategies found in academic research, goal-based evaluation, and emergent evaluation, but the starting point is always with knowledge use rather than construction.

3.4.3 Evaluation Litmus Test: Accountability and Learning

Underlying the competition between the two main paradigms of knowledge construction is an inherent tension between learning and accountability. The question remains: Is evaluation for accountability, for learning, or should there be a balance struck between them? Depending on the answer, the evaluation exercise can have very different results. While most evaluation frameworks contain both accountability and learning, the portion of each will vary based on the actors and their context. One could think of the evaluation as containing both learning and accountability, but being weighted towards one or the other, much like pH levels in the litmus test.

The primary purpose of a large number of evaluation activities is to insure that the proposed plans and budgets are implemented to the satisfaction of the donors (whether they be taxpayers, NGOs, or investors). Accountability evaluation focusses on auditing and results achieved. The monitoring and evaluation questions include, Have they achieved what they set out to do? and Did they do it efficiently? (Mathie, 1996).

A learning-focussed evaluation examines the process, the program context, and lessons learnt throughout implementation for continuous improvement within the program. The documentation of social learning requires a more flexible vision of the program that allows for continuous reflection and responsiveness to the program context. It also requires program staff to openly discuss what works and what does not work in order to improve daily operations. Questions that emerge are, Has the program achieved what it set out to do? Was it done efficiently? Was it effective? Were there any

unintended effects? Was there another way to do it better? What are the lessons learnt?
(Mathie, 1996).

While the literature contains no direct attack on either learning or accountability, bias towards one or the other is apparent. It is common for the evaluation practitioner to frame their work in opposition to either learning or accountability. For example, Scriven's *Evaluation Thesaurus* (1991) contains a two-page description of accountability, but learning is conspicuously absent.

3.5 The Logic Model

The evaluation logic model is commonly understood to be a “pictorial representation of the logical relationship among four program components: program activities, service delivery outcomes, intermediate results, and ultimate result” (Wong-Rieger & David in Cummings, 1997, p.589). As an illustration, the logic model maps out the shape and logical linkages of the program.

The evaluation logic model is most often used at the program level to foster a common understanding of the program; help design the program; test its logical linkages and objectives; explain the placement of activities in the larger program hierarchy; and assist in the structuring of the evaluation (McLaughlin & Jordon, 1999). The logic model’s connection to evaluation was highlighted in the definition provided by one of the original designers of the LFA: “[This model is] a set of interlocking concepts which must be used together in a dynamic fashion to permit the elaboration of a well-designed, objectively described and evaluable project” (PCI in Coleman, 1987, p.252)

3.5.1 Logical Linkages

Logic models contain two forms of inquiry. Firstly, the individual components ask for specific information. Secondly, the components should link together to form a logical statement. Gilroy Coleman (1987) describes how the logic models are constructed to express program rationale. The underpinnings of the model are stated in a series of ‘if-and-then’ statements. If the linkages are not tested, then the model is limited to what Gasper (1997) refers to as a “box-filling” exercise. This reduces the model to the

questions asked by each component, essentially overlooking the opportunity to test how the components fit together to form the program rationale.

3.5.2 Variations of Logic Models

Over the last thirty years, the development community has seen a multitude of variations of the logic model. Currently, there are three mainstream structures: Logical Framework Analysis (LFA), Program Logic Model (PLM), and the Results Chain. They all consist of a series of boxes and arrows logically linking the various components of a program. They have become tools for measuring program results against predetermined goals and objectives, and for fiscal accountability. The *W.K. Kellogg Foundation Evaluation Handbook* (1998) categorizes logic models as theory models, activities models, and outcomes models, depending of what part of the program that the structure of model emphasizes. These categories correspond with the logical framework analysis, program logic model, and results chains described in the next section.

3.5.2.1 Logical Framework Analysis

The first logic model was developed by a team of consultants led by Leon Rosenberg. Working with both the Fry Associates and Practical Concepts Incorporated of the United States, they developed the first and most commonly used type of logic model, the Logical Framework Analysis (LFA) (Soleman in Gasper, 1997). Adopted by USAID in 1973 (Cummings, 1997) the LFA then spread throughout the international field, to be taken up by organizations such as the British Overseas Development

Figure 3.3 Standard Logical Framework Analysis (LFA)				
	Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Assumptions
Goals				
Purpose				
Output				
Input				

(Cummings, 1997)

Administration (ODA) now the Department for International Development (DFID), the Norwegian Agency for Development (NORAD), the Danish International Development Agency (DANIDA), the Canadian International Development Agency (CIDA), the Swedish International Development Agency (SIDA), and the German Agency for Technical Cooperation (GTZ) (Gasper, 1997).

Logical Framework Analysis (LFA) has become the standard framework in the management and evaluation of international development programs. It is a 4x4-chart that provides a full description of the program design as well as methods of verification. The vertical logic, representing the hierarchy of objectives, is cross-referenced with the horizontal logic, which tracks indicators, data sources, and assumptions (Carden, 1999).

In Simon Bell's reply to Gasper's attack on the Logical Frame Analysis in the journal of *Publication Administration and Development*, he compares the horizontal logic of an LFA to Aristotle's *Metaphysics*. He explains:

Material questions would relate to: 'What is the statue made of?' (answer might include e.g. bronze and labour). Formal questions would ask: 'What is the bronze statue supposed to be?' (e.g. a statue of the leader of the Gods, Zeus). Efficient questions might relate to: 'What was the statue expected to be for?' (e.g. as an object of reverence). Final questions might relate to: 'Why is the statue made at all?' (e.g. to assist in maintaining the moral and ethical structure of the state). (2000, p.29)

Bell further explains that these types of questions are essential to understanding any program or project.

When the various donor agencies adopted the logical framework approach, they adjusted the terminology and made small revisions to the structure. Jim Woodhill's (2000) working draft of *Planning, Monitoring and Evaluating Programmes and Projects: Introduction to Key Concepts, Approaches and Terms* addresses the various perceptions, competing terminologies, and diverse structures of LFAs used by the international development donor community. Changing the types of the components often affects the types of logical linkages embedded in the model and can result in very different uses of the tool.

The GTZ uses the project matrix as only one component in a larger planning process. Through a series of facilitated workshops, stakeholders develop problem trees, analyse the issues, develop objective trees, and devise action plans based on their discussions. The final result is consensus on a plan that is expressed through a project matrix (Jackson, 1998). English language forms of this type of analysis include Social Gender Analysis (SGA), developed at the Coady International Institute, and Participatory Rural Appraisal, stemming from the Institute of Development Studies (Jackson, 1998).

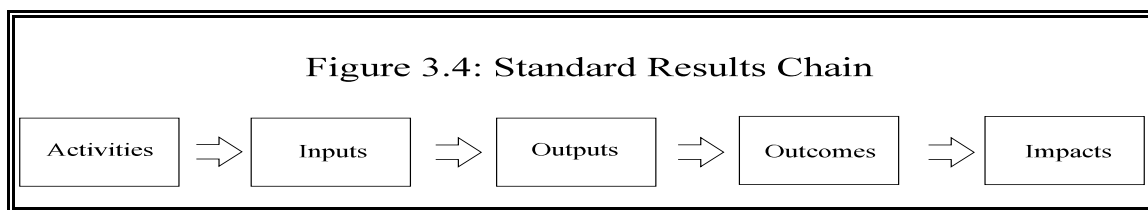
3.5.2.2 Results Chains

Corresponding with a domestic demand for greater government fiscal accountability and cutbacks in international aid, a number of governments and donor agencies have shifted to a result-oriented approach. In 1991 CIDA's Strategic

Management Review recommended changes to increase its accountability and to focus on results (Rondinelli, 1993). The Auditor General reiterated this emphasis in 1996 when he recommended that CIDA and executing agencies focus on “inputs and immediate outputs” (Cummings, 1997). In the United States the Government Performance and Results Act (GPRA) was passed in 1993, forcing all government agencies, including USAID, to take a more result-oriented approach (Wholey, 1999).

The Results-Based Management focus, originally taken from the North American business community, reoriented the evaluation to “encourage staff to emphasize causal linkages of differing levels of importance and focus on concrete results to be achieved, not just activities to be accomplished” (Toffolin-Weiss, 1999, p.357). CIDA’s 1996 RBM Policy defines result as “a describable or measurable change in state that is derived from a cause and effect relationship”(1999, p.3). Later clarification by the organization includes, “There are two key elements of this definition: 1) the importance of measuring change; and 2) the importance of causality as the logical basis for managing change” (1999, p.3). By concentrating on production, measurability, and adherence to the original program plan, RBM further entrenched managerial concepts and methods found in hard systems analysis described in section 3.2.

The results chain reduces the evaluation logic model to a simple horizontal logic schema depicting the connection between activities, inputs, outcomes, and impacts. Many authors have adapted the Results Chain to include reach, indicators, and outputs. Unlike the LFA, the results chain does not include the four levels of inquiry. A number



of organisations compensate for this by creating yet another chart referred to as a performance framework.

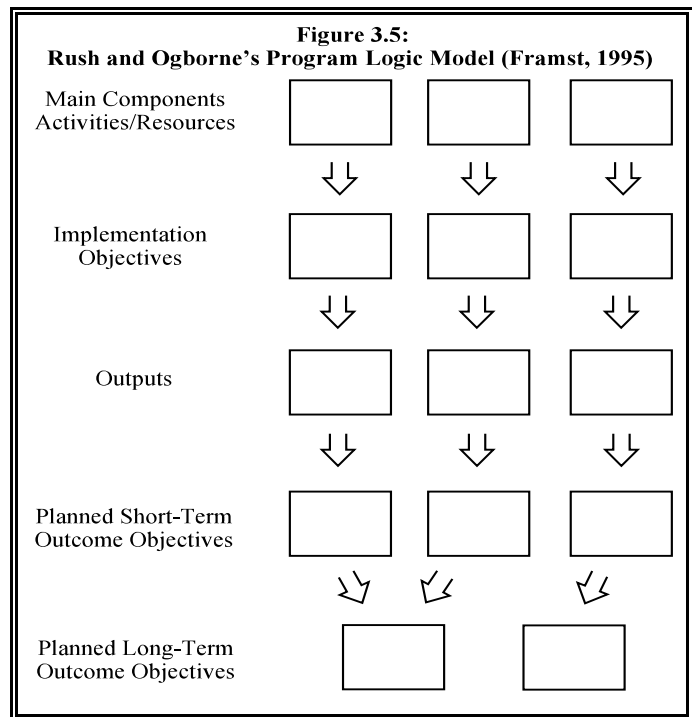
In accordance with RBM, a number of organizations have started to use the Results Chain. Notably, CIDA maintains an option of a results chain and performance framework or a ‘results-oriented LFA’.

3.5.2.3 Program Logic Models

The Program Logic Model (PLM) is used mainly in the health profession. As seen in Figure 3.5, it illustrates several sets of activities in a downward flow. The model can best be described as an in-depth organizational chart which emphasizes organizational activities and the division of responsibilities (McLaughlin & Jordan, 1999). The focus is on activities, which causes some versions to de-emphasize or even omit outcomes, impacts, or indicators. Although there have been some attempts to address this criticism, they have not been widely utilized.

In his 1995 article “Application of Program Logic Model to Agricultural Technology” Framst describes Rush and Ogborne’s invention of a results-oriented Program Logic Model and discusses their chart (figure 3.5) which marries the horizontal

logic of a results chain with the downward flow of a program logic model. This transformation has taken the emphasis away from the organizational structure and interlinking activities towards the achievement of results. It also provides an interesting case for results-based management in the health field. The model takes the focus away from services and places it on production.



3.5.2.5 Critiques

Criticisms of the logic models have included claims that frameworks reinforce hierarchies; can be used as a tool to control programs; reduce program vision to achievable results, negatively affecting motivation; impose the blueprint approach which focuses on results, ignoring the social learning process; and do not capture unintended results. A 1999 article, *Evaluating The Logical Framework Approach*, Gasper groups these criticisms in three categories cleverly referred to as “logic-less frames”, “lack-frames”, and “lock-frames”.

Gasper uses the term “logic-less frames” to refer to a tendency to develop the logic model after the program has been designed and often completed. This artificial fit is

often performed to satisfy the donor organizations and evaluators. Squeezing a program that is partially or fully completed into an evaluation logic model can accentuate conflicting program visions and/or flaws in the original program design. In some cases, the logic model is distorted to fit the existing program reality and/or to appease vested interests. Although these problems are constantly present in the program environment, the stakes are raised after the program activities have commenced.

While this can be seen as a criticism, other professionals view a late logic model as an opportunity to bring together the program stakeholders through a facilitated process. The Kellogg Foundation found that “there is a value in the process of developing a logic model. The process is an iterative one that requires stakeholders to work together to clarify the underlying rationale for the program and the conditions under which success is most likely to be achieved” (1998, p.36).

The second criticism, “lack-frames”, points to missing information about the program or reliance on the logic model as the only program description. As mentioned above, logic models were originally designed to be part of a larger planning process. Depending on the version of the model, there will be missing components, for it is logistically impossible to illustrate the complexity of program design in a one-page chart. Such charts are intended to supplement larger program documents.

Both the “logic-less frames” and “lack-frames” criticisms stem from misuse of the models rather than the logic models themselves. Evaluation logic models are supposed to be designed at the beginning of the program to insure that questions of logical linkages are addressed, and they should be framed by other program documents to fill in the

details. Few defenders of the evaluation logic models would recommend otherwise.

Misuse and bureaucratization will be further discussed in Chapter XI.

Gaspar uses the term “lock-frames” to describe how logic models trap the program’s implementation and evaluation process in a predetermined plan that is often designed months before the program start date. During program implementation, strict adherence to the logic model reduces a program’s ability to respond and adapt to the fluid program environment.

The current evaluation logic models also fix the focus of the monitoring and evaluation process into a pre-set cause and effect relationship. Unintended results (having a positive or negative effect on the program) are de-emphasized, if not ignored. Scriven refers to this tendency as “tunnel-vision”. Addressing this issue in the 70s, he proposed goal-free evaluation. This would allow the evaluator to perceive the reality of the program’s cause and effect relationships without being biased by program documents. The result of a goal-free evaluation is the stakeholders’ ability to emphasize what is working (even if it was not intended) and minimize activities which produce negative results (Shadish, Cook, and Leviton, 1991).

In contrast, Toffolon-Weiss views the logic model’s inflexibility as a benefit. She writes: “When the results-framework approach is employed, the program manager is cognizant that the entire program evaluation and, potentially, continued funding are dependent on reaching the stated targets. Therefore, there is a strong impetus to maintain the original program goals”(1999, p.354). This view serves to strengthen accountability over learning as discussed earlier in the chapter.

3.5.3 Alternative Logic Models

In an attempt to address the ‘lock-frame’ criticism, advocates of the logic models have re-invented them through a variety of structures using different methodologies. While these innovations can be viewed as ‘building a better mouse trap’, they nevertheless present an opportunity to re-think and develop innovative ideas which address the criticisms.

The alternative approaches uncovered by the literature review include a variety of authors. Dunlop and Sawadogo (1997) advocated that managers should simply reuse the LFA throughout the project cycle to include changes. This method allows for changes in the program design but does not record them as possible lessons or explanations for the future. Cummings (1999) incorporates the elements of time into the Results Chain by encouraging workshop participants to perceive the results chain as a continuous loop following the stages of the project cycle. This too is not tied to a documentation process.

In addition, GTZ held a workshop with IDS entitled “ZOPP marries PRA?”. The workshop examined whether ZOPP (the German planning technique which includes a LFA) could be integrated with participatory rural appraisal. From all accounts, the workshop was enlightening but failed to come up with an integrated approach (Gasper, 1999).

Many of the innovations have remained within the three basic formats of the LFA, results chain, or PLM. They do not explicitly illustrate the need to capture change over time in the structure of the models. Current logic models tend to be closed to unintended effects and lack the flexibility to record a program that responds to learning and changing environments. The TLM attempts to address this in the next chapter.

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