

**Creativity and
General Systems Theory**

by

William G. Covington, Jr.

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Dedicated to my brother,
Gary Wayne Covington, MBA, CPA

Acknowledgements

Creativity is a rewarding experience and as this book points out there are systemic aspects of the process of creativity. An individual creator has various support systems in any creative endeavor. In a previous book I have made mention of these systems in the acknowledgement section. The people in my support systems largely remain the same in this latest project.

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Chapter 1: General Systems Theory

Theory is a map for observing a phenomenon. Like any other analytical tool it has advantages and limitations. It can help focus a writer's attention on an important component that might otherwise go unnoticed. General Systems Theory is one such tool. This chapter discusses its strengths and limitations.

Ancient Roots

General Systems Theory has been around since the days of ancient writers. Dionysius, the early Christian scholar described a hierarchy of order in his writings centuries ago (Bertalanffy, 1972). Another one of the ancient writers to describe phenomena using a systems approach was Nicholas of Cusa. His writings, in the Fifteenth Century described what he called coincidentia oppositorum, the fact that a struggle exists between various system components (Bertalanffy, 1972).

Logically it makes sense to consider systems consisting of many parts which make up the whole. Taken separately these individuals parts are not as effective as when they are assembled into a working system. Such is the observation found among early writers using a systems approach. The old adage, “a system is greater than the sum of its parts” grew out of this observation.

The Basics of GST

Systems theory is general in that it takes into account numerous systems that interact with other systems. It can be used as a research tool to study biology, mathematics, medicine, social science, or virtually any other topic. In fact, some of the

critics of systems theory have faulted proponents of GST (General Systems Theory) saying it was too broad in scope. Those charges have not held, however, as systems theory has become an effective analytical tool in myriad academic arenas.

Systems theorists seek to gain a holistic view of an area of human activity. The environment in which a phenomenon is observed is part of this holistic approach. Another factor are the various subsystems which interact within the larger system.

Talcott Parsons' Foundation

One of the earliest writers to apply systems thinking to the study of society was Talcott Parsons. He wrote from the premise that the complexity of human activity could not be understood apart from the social structure in which it was found (Morse, 1961). Other writers have built upon Parsons' system wide examination of why some cultures are more productive or creative than others. Some of these explanations have been more accurate than others and on still others the jury is out.

David C. McClelland (1961) was one of the writers in this tradition. He attempted to study achievement on a global basis with a broad sweep of the theoretical brush. He looked at societies in very general, systemic type ways for his comparison study. Similarly, Mihaly Csikszentmihalyi (1996) used a systems approach to study creativity in the Italian Renaissance.

Csikszentmihalyi (1996) describes how being open in the right environment can enhance creativity. He notes, "without a good dose of curiosity, wonder, and interest in what things are like and in how they work, it is difficult to recognize an interesting problem. Openness to experience, a fluid attention that constantly processes events in the environment, is a great advantage for recognizing potential novelty." He doesn't stop there. He goes on to add, "every creative person is more than amply endowed with these traits."

The second chapter of this book will explore in more depth this relationship between the environment and creativity in a

system. Understanding from the outset the importance of openness is important to applying systems theory to a given context or set of circumstances.

This first chapter views the basic assumptions and premises of systems theory and the key terms used by its proponents. It is necessary to establish this groundwork before applying the theory to a setting such as creativity. Systems theory is suitable for such an inquiry because it is applicable in numerous settings.

General Terms

Some of the most important terms in systems theory focus on the relationships between the various units and the system's interaction with its environment. Take one that has already been mentioned, **openness**. This systems concept is a fundamental one that is essential to systems thinking. A system must be open to changes in its environment if it is to stay vital, active, and relevant. Changes in the environment mean that the system will change in some way to adapt to the new realities.

Homeostasis is another important systems concept useful for understanding how the theory relates to a given situation. It is concerned with the feedback process. After a change in the environment takes place, the system adjusts in a self-regulating way seeking to achieve equilibrium. This is homeostasis (Infante, et al., 1993). A system does not randomly interact with the environment. It exists for a purpose or more than purpose. A system is goal-directed.

Finality is the term used to describe the goal-seeking nature of systems. Other writers refer to this as a system being **teleological**, meaning a system is designed to reach certain end points or destinations (Infante, et al., 1997). The concept is more complex in a living system because a system has more than one way available to reach its goal. This ability to reach a goal from myriad ways and beginning at various locations is called **equifinality** (Littlejohn, 1989).

Other Terms

It is necessary for systems to regulate feedback as it comes to the system. A system's survival may depend on this regulatory ability. **Cybernetics** is the term used in systems theory to describe this element of control and regulation found within a system (Littlejohn, 1989). The term was taken from the Greek word having the same root as "steersmanship," which underscores the necessity of control found in a working system.

In a complex system, generalization is not the common feature to be found. In fact the opposite is true, i.e., **specialization** is the term used to describe the fact that system components have narrowly defined functions to perform to keep the system operating as it should to survive and/or grow (Laszlo, 1972). **Necessity** is a term that applies to all theories, not just systems theory. It relates to the fact that a theory must relate what it claims to relate in knowable and specific ways (Tucker, et al., 1981). In other words, the theory must provide a reasonable explanation if it is to serve as a source of insight. **Face validity** is another term academics sometimes use in making preliminary inquiries into an area of study. The question asked is simply: "does this look valid on its face?" A cursory look should provide reasonable assurance that the study appears as one would expect.

Strengths of Using Systems Theory

Anytime a decision is made to use a theoretical approach the issue of appropriateness must be addressed. Systems theory is approach when one wants to study in a complex, opened setting, where there are many unpredictable variables at work. Systems theory is widely used for this reason.

A second reason for using systems theory is that it is useful in providing a framework in which to study complex variables influencing one another. Some phenomena are beyond a cause-and-effect explanation. Systems theory is suitable for describing situations as they exist.

The specialization component of the system elements is inte-

gral to understanding how a complex open-system functions. A third advantage of systems theory is its ability to show the complex web of relationships in operation as a system moves toward its goal or goals.

Systems theory is not limited historically. It can be used to help make meaningful predictions about what can be reasonably expected in the future. This fourth advantage goes both ways as far as time is concerned. Historically, a writer can trace the elements of a system to see how what was done in the past influences the present. Predictability is important in a theory's usefulness.

A fifth advantage of systems theory is that it has survived the test of time. It has faced its critics and remains a viable theory used by a cross section of academe. If the theory lacked credibility, it would eventually die out. Systems theory remains viable.

Limits to Systems Theory

Regardless of the theory chosen for a study, there are drawbacks to be found. This holds true for systems theory. So the first limit to using systems theory could be said for any other theory that was chosen, i.e., that it is only a map of reality and not the reality itself. Like most analogies, it is imperfect and exactness is not always to be found in some explanations.

A second criticism of systems theory is that it has been said to have been over utilized, i.e., critics charged that the theory attempts to explain too much. The issue is that systems theorists have such a generalizable framework that its explanatory value is decreased.

Systems theory has been criticized because of its emphasis on the relationship components (Infante, et al., 1997). Critics using this argument charge that systems theorists' framework is inadequate in that it gives too much emphasis on the relationship components of the various subsystems and other elements of the larger system.

Using Systems Theory in A Research Setting

Singleton and his colleagues (1988) identify seven stages of social research which can be used to demonstrate how systems theory can be applied to a research project.

The first step in the process is to ask the question what is to be studied. This is not as easy as it may seem. Researchers will be called upon to defend their work and the inevitable question becomes: “so what?” In the reflective period which comes before a project is launched, a research should develop an answer for the “so what?” question. Who will want to know the results? Are there potential consequences? Is the project worth doing? Has anyone else already done a project of this nature or one that is closely related?

The second step involves preparing the research design, which is necessary to setting the parameters of the study. Frequently this part of the process means a researcher narrows the focus as he or she moves along in the implementation of it. Like brainstorming, there is a lot of revision work to do along the way, but as the bugs are worked out of the plan, the more relevant variables begin to gain a sharper focus.

The third step as the project proceeds is measurement. In a traditional quantitative study this is an easy step to assess than in a qualitative systems study focusing on description. The same will be said of the next step, sampling. The issue is one of how to frame a study. Quantitative research is more compartmentalized, while qualitative research is more open-ended. The argument made by defenders of qualitative, descriptive research is that life is complex and messy and does not always lend itself to neat compartmentalization.

Measurement is not to be ignored by qualitative researchers, however. In explaining the results, the researchers will provide details on data collection, what count as data, and how the project moved from one stage to another. A **thick description** of both the process and the findings is expected. That was a term

Clifford Geertz used in his approach to ethnographic research. Geertz (1973) thought it was absolutely necessary for qualitative researchers to go into detail on their findings.

The fourth step concerns selecting a reasonable sample for the project. Again there are distinctions between quantitative and qualitative researchers. In the former selecting a representative sample that represents a larger universe is an issue, however, in qualitative research the issue is more on providing an accurate description of the phenomenon being studied.

The fifth step is where the researcher leaves the office and goes to the point of contact to collect the data to be studied. Different traditions exist for this stage of the process, often a combination of the various methods is used. An experiment is one method of data collection, which is commonly used by researchers seeking to establish a cause/effect relationship between two variables.

Taking a survey is another possible source of gathering data. This can be done through interviews, phone calls, mail, or the internet via email. The use of available data is a third possible data collection technique. And the fourth one is to conduct field research. This is the method used by systems theorists. It involves going to the location, where the action is to observe people as they are in their real-world settings.

A researcher can use any combination of these data collection methods in a project. There is the advantage of seeing things from different perspectives when such an approach is used. Reviewers of such projects tend to see more validity if multiple methods were used to do the research.

The sixth step flows naturally from the previous one, data processing. Raw data mean nothing. The data must be made to make sense and it is up to the researcher to explain its meaning. Before this can be done there must be some form or order.

The seventh step is where the form and order begins to take even more of an orderly arrangement. This is the stage that includes both the analysis and interpretation of the collected data. Decisions have to be made in all research projects, those involving systems theory too. For example, “which subsystems

will be described?”, “which elements of the environment will be discussed?”, and “which key components will be addressed in the writings?”. These are the questions asked by systems theory researchers.

Systems Observations

Systems theory is useful in studies where participate observation is the method used for data collection. As mentioned in the previous section, data collected in natural settings is sometimes to only way to explain the complexity of a situation as it is. A laboratory experiment would fail to answer the type of questions a researcher using participate observation would explore.

Danny L. Jorgensen (1989) identifies some of the most appropriate settings for researchers using a participant observation approach to data collection:

1. Little known. When little is known by people outside the group being studied, participant observation helps open the doors to a more generalized audience.

2. Important Differences. When insiders view themselves as being largely different from those outside their group, a study involving participant observation is useful for helping people to see how the insiders see themselves.

3. Obscured phenomenon. When the observation involves actions that those outside the group would not normally see, the method is a viable way to collect data.

4. Hidden phenomenon. This situation is even more secretive than the third one. It involves areas that are not just obscured from the public, but are hidden. Sometimes secret societies or deviant behavior are included in studies in this category.

Human Instruments

Researchers using participant observation are instruments of

research, according to one writer on the subject (Fetterman, 1989). Writing about **ethnographers**, which is another term for researchers conducting field work, David M. Fetterman notes, “fieldworkers may lose their bearings in the maze of unfamiliar behaviors and situations. Ethnographic methods and techniques help to guide the ethnographer through the wilderness of personal observation and to identify and classify accurately the bewildering variety of events and actions that form a social situation.” So the researcher, based upon training, experience, and observation skills is an instrument in the data collection stage of the project. This same instrument, it might be pointed out, will also be needed in the data processing stage. Training and experience are necessary in that arena also for the successful completion of the study.

Fetterman (1989) advises the best way for an ethnographer to gain access to an inside group is through making contacts with key persons on the inside. For that reason interpersonal communication skills are part of the package of being a human instrument.

Epiphanies in Interpretation

In interpreting the data collected, the hope is that the researcher will learn something about the group and/or phenomenon that was not previously known. In order to share this insight with other people, the researcher must first receive this insight. There are four different types of insight or **epiphanies** that one can expect in doing participant observation such as that done by systems theorists (Denzin, 1989).

These moments of epiphany occur when the researcher encounters the unexpected, i.e., Denzin (1989) calls it a crisis, a trouble spot. It means the researcher is now exposed to something to which he or she was previously unfamiliar.

The minor epiphany is an illuminating trouble spot that centers around the revelation of underlying tensions and problems in a relationship. As a researcher spends time with

the data, these minor revelations unfold.

The major epiphany is one that results in the observer never being able to see from the previous perspective again. It is so revealing that the new insight causes a shift in perception. Again, time is a relevant variable in reaching these insights, for that reason qualitative studies require a substantial amount of time for data collection and interpretation.

The relived epiphany is experienced when a person goes through a major turning point in his or her life again. It is just what it is described as being, an epiphany experienced for the second time, relived.

The cumulative epiphany occurs when an individual goes through a series of events in his or her life that lead to a cumulative moment of insight. Perhaps it took the person quite a while before fresh insight on a given situation or lifestyle resulted. When it does, a cumulative epiphany has taken place. A participant observer who fails to show something new from a situation has neglected his responsibility as a researcher. "What can be learned from this study?" is the question to be addressed. Sometimes in the preliminary stages one does not know what will be learned, but the framework is there for learning to occur. The whole point of doing research is to add to knowledge.

Systems Theory's Practical Applications

If a theory actually helps in the understanding of a set of circumstances or the human condition, then it can be applied to specific contexts. Systems theory meets that criteria.

As mentioned previously, systems theory has been applied to a number of different content areas and it has successfully served its mapping function in applied settings. A random sampling of its applicability can be found in virtually any academic arena.

For example, Linda Putnam (1982) proposed using systems theory to study organizational communication. Albrecht and Ropp (1982) studied networking structures in organizations

with a systems approach. King (1969) used systems theory to study marketing in the public and private sectors. In a study published a year later, Sporleder (1970) looked at marketing functions through systemic lenses.

Ramocki (1982) advocated using systems theory as a model for helping students learn about information systems in the age of increased supplies of content. Monge (1982) discussed organizational problems, contrasting traditional research with systems thinking.

In other research, Parker (1991) studied responses to governmental centralization in Nepal using concepts from systems theory. And Farrell and Case (1992) used systems theory to study relationships among people with deviant behavior.

The citations could go on without end because systems theory has wide application in a number of diverse settings. As discussed earlier proponents see that as a strength, while critics see that as a weakness of the theory.

Summary

Systems theory is a method of research that has been around in rudimentary form since ancient writers started describing structures of organizations and the functions of their component parts. It is a theory that helps observers gain an understanding of situations in a variety of settings.

Talcott Parsons applied systems thinking to the study of social units. This resulted in other writers building on the foundation he established. Since his day, numerous scholars have added to the literature of their subject areas by the use of systems theory as the framework of analysis.

It is necessary to understand the key terms of any theory if it is to be useful in explaining a situation or set of circumstances. Openness is a vital part of understanding systems theory as being open to the environment is necessary to keep the system alive and functioning properly. Homeostasis is the system concept that relates to the system interacting with its environment.

The system is goal-oriented, the term teleology is used to describe this aspect of the theory. Equifinality means there are several starting points and varied ways of reaching the desired goals of a system.

Cybernetics is a word borrowed from ancient Greek relating to steersmanship used to point out that systems are to be controlled or regulated. Each unit in the system has a specialization which helps the system in attaining its goals.

A study or theory must have face validity to pass muster in an academic setting, that is it must appear to address the questions before it. This is also referred to as necessity.

Systems theory has both strengths and weaknesses associated with it. The theory is effective for studying complex situations that are open to myriad options. It can be used to describe things as they really are. Specialization is a primary reason for using systems theory to look at the particular features of a unit of operation. Complex sets of relationships can be analyzed using the approach also.

Systems theorists view things holistically, which is also an advantage. Rather than neglecting relationships, advocates see these intangibles as being necessary for understanding how a system truly functions. And finally, systems theory has survived the test of time. It has been widely used as a theoretical tool in many arenas.

Like any theory, GST is limited in that it is merely a map and not the actual organization or event. Other criticisms have suggested that systems theory attempts to cover too much territory. Emphasizing relationships has been another point of contention for some writers.

Singleton and his colleagues identified seven steps for a research project. Systems theory was related to these seven steps and it was shown that the approach can meet each of the criteria if applied properly.

Jorgensen identified four settings for participant observation researchers. This is a method that works well with systems thinking. Fetterman described persons doing field work as their data collection method as human instruments and pointed out

the necessity of proper training for the instruments to work as they should in acquiring accurate findings.

Dezin listed four different types of epiphanies a researcher experiences in an ethnographic study. Each of these could potentially be encountered by a researcher using systems theory in a real world setting.

The chapter concluded with some examples of systems theory being used in various applied settings. Its versatility was demonstrated in the different examples given. The sample was limited because it would not be possible or appropriate to cite an extensive list in this introductory chapter.

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Chapter 2: Creativity

Creativity takes many forms and is a necessity if one is to remain productive and useful in the corporate or academic arena. Creativity is essential to making a contributions of significance. Creativity is energizing. It is a dynamic that can be exciting when a person is in an element in which talents are being used and progress is the result.

Creativity is Unpredictable

Creativity cannot always be attained at will. There are fluctuations that occur in the process. A certain amount of down time is necessary for the creative process to run its course. Putting the right things into the brain is preparation so that once those down times take place, the intuitive part of the brain has something to draw on for inspiration and content.

There are a number of writers and speakers who have addressed the topic of creativity in its various expressions. Some are popular communicators, others are more academic. Regardless of the source, if the information is valid, it is worth considering in any discussion of creativity.

This unpredictability factor is a common tread one sees in the literature on motivation and creativity. It is the point at which the intuitive right hemisphere of the brain manifests its insights. It cannot be forced, but it can be encouraged.

Food For Thought

Dr. Denis Waitley is one of the most well known motivational speakers on the circuit today. He has been a consultant for corporations, Olympic athletes, astronauts, and has taught at the university level. He encourages his audiences to use known psychological principles to work for them rather than against

them. One such principle is feeding the mind with the right kind of raw material.

Most people are familiar with the idea of a self-fulfilling prophecy. It posits that people will help to create or bring into being that which they believe to be true. Waitley (1992) encourages his readers to see their work as being in progress. In this way, there is no view of failure, corrections can be made and the work will eventually become what it is designed to be.

People neglecting this principle in this situation are destined to be either frustrated or confused when things seem to be at a deadend. Options usually exist, but it takes a fresh dose of creativity to see them. The self-fulfilling prophecy technique is a creative alternative to frustration. Perspective seeking helps the recharge one's batteries.

Creativity And Perspective

In his book, *On Becoming A Leader*, Warren Bennis (1989) points to the fact that leaders know how to reframe situations by reflecting on them. Through a series of interviews with leaders from many different fields, Bennis saw the recurrence of this creative aspect of leadership. He associates reflection with learning, noting, "reflection is a way of making learning conscious. Reflection gets to the heart of the matter, the truth of things."

Changing one's perspective is a creative act itself, which leads to other creative changes. It involves seeing a given situation in a new light. Like epiphanies, described in chapter one, a change in perspective is a prerequisite for changed behavior.

Eliminating stress is a part of the reflection process. Stress reduction techniques vary and it is not the purpose of this book to go into detail in describing those techniques. At this point it is sufficient to say that in attempting to reduce stress, the person realizes his or her wholeness, which is part of thinking of oneself as an open system that needs replenishing periodically. Open systems must receive input from their environments in

order to fight **entropy**. Entropy is a term from systems theory which means a system has a tendency to breakdown unless it is properly maintained (Fisher, 1978). As a living organism, each part of the person must be replenished regularly for this maintenance to take place and for creativity to result.

One of the first to write about humans as systems was Norbert Wiener. He emphasized the importance of fighting entropy as a matter of survival. He compared humans to machines to illustrate his point, writing, “the machine, like the living organism, is, as I have said, a device which locally and temporarily seems to resist the general tendency for the increase of entropy. By its ability to make decisions it can produce around it a local zone of organization in a world whose general tendency is to run down” (Wiener, 1967).

Creativity for Survival

Another writer who expanded upon the Wiener thought is Mihaly Csikszentmihalyi. He also approaches his subject, human beings, from a systems perspective and like others writing from that framework sees a link between a person interacting successfully with the environment and survival.

Csikszentmihalyi (1990) puts it this way: “There is no question that to survive, and especially to survive in a complex society, it is necessary to work for external goals and to postpone immediate gratifications. But a person does not have to be turned into a puppet jerked about by social controls. The solution is to gradually become free of societal rewards and learn how to substitute for them rewards that are under one's own powers.”

So what these writers argue is that being open to the environment, and gaining a proper perspective on one's place in that environment is not a luxury. It is at the heart of survival. Finding one's niche, belonging, and interacting with others is part of the human experience and a very necessary part.

Creative People Know Change Is Inevitable

There is a solid reason for this reflection in the life of creative people. That's the simple fact that the environment is constantly changing. Change cannot be avoided or ignored without negative consequences. People anticipating change can help shape it and be prepared for the changes as they occur. Those who do not might fall victim to the new realities.

Jeremy Campbell (1982) says of change, "Jainan logic assumes that the complexity of the world is unlimited, and that parts of it are always changing. Nothing we say about it at a given moment is entirely true." Our knowledge of reality is limited, Campbell points out. Learning opens us up to new realities about our environment which have direct relevance to us. Sometimes we do not know the relevance until after learning has taken place.

"Truly creative people use the gap between vision and current reality to generate energy for change," writes another systems advocate, Peter M. Senge (1990). In other words, these people know that change is inevitable, they see possibilities in change and they help create that change. The opposite is true for persons fearing change. Resentment sets in. They feel overwhelmed and victimized by impending changes. This leads to paralysis too frequently, which keeps them from attempting to participate in the changes that will become part of their future.

Creative People Channel Their Energy

The world is much too complex for a person to engage in every activity. This applies at the individual level. Selecting one's level of participation is a conscious choice creative people make. They do not let others impose their agendas on them, rather they select the battles in which they will become active.

Meekness has been described as focus power, i.e., by this viewpoint, a meek person is not one who submits arbitrarily to anyone, rather it is a person who is focused enough to channel

energy when necessary so that the mind subordinates the body to its (i.e., the mind's) intend. Rather than “flying off the handle” in an emotional outburst, the meek person keeps a lock on emotions. When the appropriate time and conditions are present the person acts in a desired way to achieve the outcome he or she wanted.

Selectivity In Creativity

Three closely related psychological categories entered into this element of focus on the part of creative people. Before describing how they do so, it is helpful to first identify and define them.

In the early days of mass communication research, the assumption was that all audience members would perceive a message transmitted over radio or through film in the same way. The theory was called hypodermic needle or bullet theory. It viewed the media as being all powerful and individuals having very little defense in whatever the media wanted to disseminate. Those assumptions were negated by the three psychological categories that were discovered as subsequent research was done (Black and Whitney, 1988).

Selective attention is the first of these categories. It describes the fact that people tend to be attracted to media that reinforce their existing beliefs. They intentionally select media offerings that confirm their biases. The exposure or attention given to the media by an active audience member is purposeful on the part of that person.

Selective perception is the second category to point out individual differences. It says that after people have made a choice to read a newspaper or watch a television program, they “read into” that media product their own set of biases and interpretations. People see different things in the same media content based upon their own worldview.

Selective retention is the last category and it is concerned with the lasting impact the media content had on the individual.

It again relates to a person's unique interpretation of a media message and emphasizes the reality that people remember different things from the same media product. Based upon a person's own perspective one audience member would recall a program was about one thing, while another would recall some other part of the identical program.

These categories relate to the creative person because such a person first realizes the way human nature is. That has consequences for the individual, as he or she sometimes struggles to gain a broader perspective on an issue or situation. It also has consequences for the person to try to see things from others' perspectives. So both internally and externally, being conscious of these three categories helps a person expand and grow.

Creativity Confronts Jealousy

Creative people are sometimes the target of unjust criticism from colleagues who are less motivated, not as productive, and are jealous of the success they see in the career of the creative person who is moving ahead in his or her career. Often these attacks are sudden, totally unexpected. Creative people would prefer to not have to deal with such pettiness, but the world in which reality exists makes it unavoidable.

Since it is another challenge in life, handling these unpleasant situations is a task creative people can expect. It is just another step on the journey toward one's goals. A creative approach to this problem is needed to get on with productive and to avoid being slowed in the quagmire of emotionally draining unpleasanties.

Alan Loy McGinnis (1997) says of these challenges, "...the higher you climb up the ladder, the more of your backside is exposed to others, so be prepared for the rocks that will be hurled up at you."The colleagues you have left behind feel understandably jealous and begin sharpening their knives, finding reasons to spread negative stories about you."

So now that the problem has been identified, how is it to be

tackled successfully? There are no easy answers, but various motivational writers offer some practical information on how the problems can be addressed.

McGinnis (1992) says it is important to reconcile oneself to living with human nature as it is. That is a good starting point. Like other aspects of human nature, to ignore reality will not make it go away or alter it. Acceptance is the first step in dealing successfully with the problem.

Arthur Caliendo (1990) uses the teachings of Jesus in a Christian perspective, as he strongly encourages victims in such situations to forgive those who have done them wrong. He writes, "growth and forgiveness are inseparable. Certainly no relationship can grow or even survive without a forgiving attitude." Caliendo (1990) goes on to add, "nothing can bring two people closer together than to experience genuine forgiveness."

Forgiveness is not easy. It does not come from an undisciplined mind. Returning to the issue of meekness being a focus of one's emotions, forgiveness requires an extremely focused will. Energy, decision-making, and desire all enter into the process of forgiveness. The easiest thing to do would be to respond as the vast majority of people would. The most difficult thing to do is to resolve to overcome human nature and forgive.

Creative Visualization

Seeing an external object, one can imagine reproducing an object similar to the one being observed. Seeing internally, i.e., "seeing with the mind's eye" things that do not exist is a different form of visualization. Through such visualization, a creator can produce an object that does not yet exist in physical form, only in the mental image within.

"Images soon constitute the foundation of the inner reality, which in human psychology is as important as (and in some respects more important than) external reality. Imagery not only helps the individual to understand the world better, it also helps him to create a surrogate for the world" (Arieti, 1976). Through

this imaging, this insight into what does not yet exist in physical form, the creator conceives of what he or she plans to bring to fruition.

The mind's eye does not operate in a vacuum, however. It must have something to work with. Raw material must be provided for the brain to function when called upon to produce. That is why it is essential for creative minds to be active before those times of epiphanies. An incubation period precedes inspiration. Through synthesis the pieces of the puzzle come together.

Creativity Through The Environment

Input can be transformed into outputs in a creative interaction with elements of the environment. That is, the person, as an open system takes inputs from the environment and uses those inputs in such a way that creatively outputs are produced through the transformation.

One resource that is available in the environment is other knowledgeable people. One's colleagues are a valuable source of information that can be tapped through daily interaction, professional conferences, email and various other ways. Staying aware of the latest developments in the field is a significant way to creatively use information that others possess.

A second similar way to stay connected to the environment is through reading. Reading professional and scholarly journals provides one type of data. Technical and industry periodicals contains information of a different kind. Still a third type of reading is popular writings on management and interpersonal relationships. Being well-read in a variety of topics not only keeps a person current on the different issues, but causes them to be a credible source for other people interesting in exploring the larger world of ideas.

New technologies have opened another way of communication that did not exist just a few years ago. This third category has been mentioned in the context of communicating with one's

professional peers, but other information sources are also part of the internet. The internet can be used to attain the most current information as it is unfolding. Source credibility varies on the net and this is a consideration in browsing for the latest developments of a story as it is being played out.

More will be said on this in the next chapter when the discussion will center on applying systems concepts in a creative setting. This one illustration indicates how the two are compatible. Systems thinking easily fits into a creative context. It is open-ended and adaptable which means it can be used in many varied contexts.

Reinforcing Creative Behavior

Role models are usually associated with young children and teenagers, yet role models are important regardless of age. Creativity is an area where proper role models can increase the activities leading to desired output. Role models are useful for reinforcing creative desires and actions. William Coleman (1983) writes, “people with less skills than you have are doing amazingly creative things. Their stories and examples can be a tremendous inspiration.”

This goes back to the idea of going outside oneself, i.e., outside the system to interact in a meaningful way with relevant elements of the environment. Being aware of these role models requires the investment of time and effort. Finding out how other creative individuals do what they do in a learning experience itself. It is an extended learning experience when it serves as a model for future creativity on the part of the observer.

Tapping An Internal Creative Resource

Creative people often know how to use both the right and left portions of their brains to bring about a synthesis to complexities in life. Stephen R. Covey (1992) offers advice for people