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Creating the Future: Conceptualizing a How-to Guide to Creative Problem Solving

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Creating the Future:
Conceptualizing a How-to Guide to Creative Problem Solving
by

Paul D. Reali

An Abstract of a Project
in
Creative Studies

Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Master of Science

December 2008

Buffalo State College
State University of New York
International Center for Studies in Creativity

ABSTRACT OF PROJECT

Creating the Future:
Conceptualizing a How-to Guide to Creative Problem Solving

This project conceptualized a business-market book that would serve as a how-to guide to Creative Problem Solving (CPS), filling a perceived gap in the current literature. The conceptualization is culminated in a formal book proposal created to publishing industry standards, which includes an annotated outline of the entire work and sample chapters. While conceptualizing the book, current CPS models were re-conceptualized as well, resulting in a proposed new approach to CPS which describes each process stage as a competency, to be called the Creative Problem Solving: Competencies Model. The competencies are briefly described, in anticipation of future research. The model's visual aspect is presented as a flexible structure that each problem-solver can configure to the situation at hand. The author's process and key learnings are also presented.

_____
Paul D. Reali

_____
Date

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Dates of Approval:

_____   _____
                                Dr. Susan Keller-Mathers
                                Assistant Professor

_____   _____
                                Paul D. Reali
                                Student

ACKNOWLEDGEMENTS

I believe in luck. I believe that for the most part we make our own luck. Serendipity, a kind of luck, happens when we keep our eyes open. Two of the most important things that happened in my life were serendipitous, times when I was fortunate to have my eyes open, and both involved my friend Keller. Twenty-five years apart.

In 1981, although not nearly ready for the responsibility, I interviewed to become a Resident Assistant for my sophomore year at Buffalo State College. Around that same time, I saw a hand-drawn recruiting poster for the Buffalo State cross country team. ("Give Blood: Run Cross Country in Spikes," or something to that effect.) I had run in high school, and decided that if I were not selected to become an RA, I would join the cross country team. The RAs had the good sense not to select me, but the team welcomed everyone, including a second-team runner like me. There is not a thing that happened during my undergraduate years that is more important than the time I spent on that team and with those people, one of whom is Keller. My college experience *is* that cross country team, and it was there that a kid from Schenectady first discovered himself.

Flash forward 25 years. One day in 2006, lost in the fog of staying at home with two young daughters and not doing anything that I recognized as a part of myself, I got the notion to look up my friend Keller on the Buffalo State web site and see her new bio, as she was now *Dr.* Susan Keller-Mathers. Then, wandering on the site, I discovered the distance version of the Master of Science degree program, and knew immediately that I had just discovered the path to my future. What I did not understand at the time was how truly formative an experience this program would be, that by being here I would

rediscover my identity, the parts of myself that had been subsumed by full-time parenting. Because I could now recognize the past me and imagine the future me, the present me became clear. This helped me to be, among other things, a better parent. (I don't know yet if I am a *creative* parent; that journey continues.)

We learn here to separate correlation from causality, and as I would not want her to feel *responsible* for any of this, I will simply acknowledge with gratitude this correlation between my friend Keller (as I'll always know her) and these pieces of luck.

It should be noted here that my friend did not think to *tell me* about the distance program ("Do you think I *want* my friends in this program," she has reasoned), yet I am grateful for that, too. Had she told me, I might have come here too early, before I was ready, and before the arrival of the seventh distance cohort. What happened to me on that cross country team happened because of those people, and what happened to me here 25 years later happened because of the Lucky 7s, my cohort, my people: Alicia Arnold, Ami Henriques, Carol Yeager, Chris Comparetta, Courtney Belluccio, Deirdre Pocase, John Yeo, Michele Lenhart, Nina Sacoor, Tañia Plasencia, Tara Bissett, Randah Taher, and Vincenzo Piscopo. Sevens, I didn't know how much I needed you, and if I have given you 1/100th of what you have given me, then you are rich indeed. As I said at the end of the first week: I wouldn't have wanted to do this without you. Thank you for being there, then and now and ever. Yes, you're stuck with me.

On this project in particular, special thanks go to Tara Bissett, who provided a breakthrough insight; and deep gratitude to Deirdre Pocase, my sounding-board partner, Skype buddy, and storyteller, who helped me far more than she thinks she did, being ever-ready with a hilarious rant, a vexing problem, or a dead-on insight. This project is by

its nature a solo venture, but it doesn't feel that way when a friend has your back. Thank you, dp.

I'm not good as an employee, but there is perhaps one place in the world that makes me want to be one, the International Center for Studies in Creativity. A place is its people, so I offer special thanks to those who helped on this journey: Dr. Gerard Puccio, the fearless leader; Dr. Mary Murdock, a wellspring and an inspiration (and a fellow North Carolinian); Cyndi Burnett, about whom there are no words (or, no words that would not add to the string of foolish things I've said to her); Blair Miller, who got us started and kept wondering when the 7s were going to get to the storming part (not yet, Blair); Russ Schoen and Jonathan Vehar, a great team who put together an incredible class with about two weeks notice; and Debi Johnson, who just keeps it all together.

And, of course, Eleanor. I could diverge for a good long time now to make a list of all that my wife has given me over these two years – love, support, time, interest, inspiration – and the list would be ever incomplete. Thank you, El. This does not happen without you.

And no list is complete without those two other things, Thing One and Thing Two, our daughters, Antonia and Juliana, who help me (when I am willing to keep my eyes open) to see the world through a child's eyes, and who I hope to help become creative beings of their own. Go, girls: create the future. Daddy's here to help, every step of the way.

TABLE OF CONTENTS

TABLE OF TABLES

TABLE OF FIGURES

SECTION ONE: BACKGROUND TO THE PROJECT

Purpose

The purpose of this project is to conceptualize the writing, packaging, and selling of a

how-to guide to Creative Problem Solving (CPS). The business/trade book, to be called

Creating the Future, will be written after the completion of this project (hereinafter:

Concept Project), building on the foundational work done here. The Concept Project,

therefore, must provide all the preliminary work required to support this effort.

Description

What is required to write a book for publication, a book which intends to draw on

one's experience and knowledge, and which must find a niche in the marketplace? This

Concept Project answers those questions for a specific book, a CPS how-to guide called

Creating the Future. (In this conception, I am using the term "how-to guide" to represent

a book that focuses on guiding the reader through the process, rather than delving too

deeply into the thinking and theory behind the process. The reader should be able to use

the book to solve a problem or seize an opportunity, always being able to answer the

questions "what do I do now" and "what do I do next.") Specifically, this Concept Project

involves the exploration, research, planning, and problem-solving required to

conceptualize the book.

The Concept Project includes three primary components: a literature review of

existing books with a similar purpose, and other books that can contribute to my

knowledge and understanding of creative processes; a personal reconsideration of the

current CPS models; and a book proposal ready for submission to a literary agent or

publisher. The book proposal has several facets. It includes: a title page; a synopsis and pitch; my qualifications as an author (my expertise in creativity, my publications, and my unique voice); promotional considerations (who would be interested in the work, and how I would assist in reaching them); an annotated list of competitive works (which is a direct descendent of the literature review); an annotated outline; and two sample chapters.

Rationale & Creative Contributions

This logical basis for this Concept Project can be viewed through two lenses: through that of the creativity domain, and through that of my personal and career development. These lenses are summarized here, then discussed in detail.

Creativity Domain

1. There is a long history of using published books to advance CPS and creativity.

2. There is a gap in the creative process literature than can be filled.

3. This reconsideration of the current CPS models might provide a path for further research and inquiry, leading to an enhancement of our understanding of CPS.

Personal and Career Development

1. Researching and writing the book will help to shape my conception of CPS.

2. Research, writing and publication builds on a 15-year career as a creative leader, entrepreneur, trainer and facilitator.

3. Publication of the book that is conceived here will create professional opportunities, leading to my ability to dedicate my career to the advancement of the field.

A History of Using Publication to Advance CPS and Creativity

In the academic world, the phrase is well known: publish or perish. Much of the early modern American research on creativity came from the field of psychology. In his 1950 president's address to the American Psychological Association, Guilford (1987) noted the dearth of academic publications on creativity, and challenged his colleagues to increase the study of creativity. Guilford got his wish, and the result was a flood of journal articles and books (see Figure 1) on creativity and related topics.

In the business world, publication is also a route to success. David Allen (2001), Stephen Covey (1989), and Malcolm Gladwell (2000), for example, would not be household names had they not written best-selling books. But in the business world, publication has another route to success beyond the best-seller: the cachet associated with the words "author of." Thus, as creativity entered the American consciousness, creativity authors wrote for the trade press in addition to their academic publications.

One measure of this growth is the number of books that are cataloged using the keywords "creative" or "creativity." The Creative Studies Library at Buffalo State College has more than 3,700 books in its collection, but just three were published before 1950 containing those keywords. From 1950 to 1959, the collection contains 40 titles. From 1960-1969, 277 titles. From 1970-1979, 304 titles. From 1980-1989, 358 titles. From 1990-1999, 532 titles. From 2000-2008 (recent acquisitions lagging publication), 383 titles. Plotted on a curve (excluding the incomplete last decade) in Figure 1, the growth can be clearly seen as dramatic.
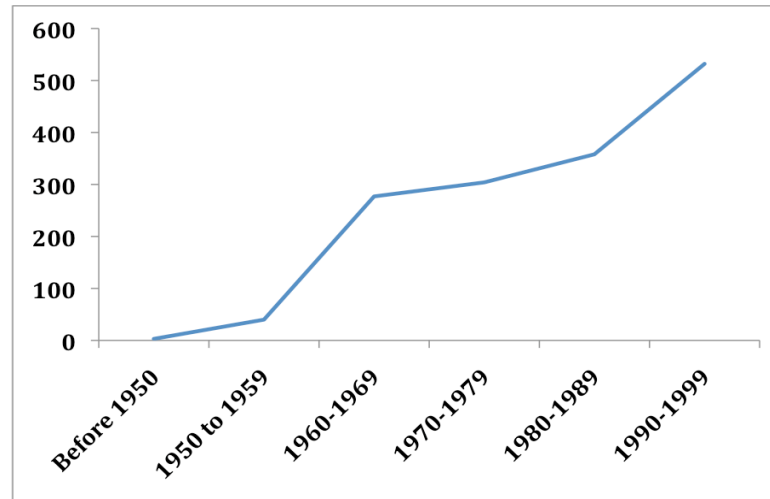
Figure 1. Books in the Creative Studies Library by year of publication

It would be difficult to find a notable name in creativity who has not published one or more books on the subject, including (to name just a few) the academically-oriented Adams, Amabile, Csikszentmihalyi, Firestien, Gardner, Isaksen, Noller, Parnes, Rickards, Runco, Sternberg, Torrance, and VanGundy; and the populist-oriented Cameron, de Bono, Buzan, Fraley, Fritz, Hall, Hurson, Land, Michalko, Osborn, Smith, and Thompson.

Filling a Gap in the Creative Process Literature

The literature review uncovered many hundreds of books about creativity, creative process, and creative thinking tools, from Osborn (1942) to Hurson (2008). What was not revealed was a dedicated how-to guide to using the process, in a book intended for the business/trade market. Most of the works were an explication of creativity with a nod to process or, more frequently, tools for idea generation; few of the works were dedicated to a description of creative process, and those that did describe a process were not written

such that the reader could easily apply the process. Specifically, the reader would have to *extract* the process from the detailed description of it.

The literature review included three books intended for use as textbooks, and not generally available to the business/trade audience. Of these titles, two were solidly theoretical; for the problem-solver intending to use the process, the same *extraction* issue would apply. Just one title (Miller, Vehar & Firestien, 1997/2001), it seemed, could be easily used by a problem-solver wishing to be guided through the process itself, rather than being immersed in the thinking and theory behind the process.

The intent of *Creating the Future* is a book that, for the reader, is large on process and small on theory. The book will not attempt to convince the reader of the value of creativity or creative thinking or Creative Problem Solving; rather, the intent will be for the reader to use the book as a guide to solving problems and seize opportunities – the create the future rather than wait for it to show up. This focus does not discount the need for the book – and the author – to have a strong theoretical background. On the contrary, the principles, processes and tools in *Creating the Future* will be strongly grounded in scholarly research and academic rigor, obtained during two years in which I immersed myself in the domain. *Creating the Future*, then, is not a scholarly work, but will make the scholarly accessible.

A Reconsideration of CPS Might Lead to Further Research, Inquiry, and Enhancement

For more than 50 years, CPS has been prodded and poked, used and researched, scrutinized and strengthened. The version of CPS I learned as a freshman at Buffalo State College in 1980 (the Osborn-Parnes "finding" model) was different than the one

presented in the first course of my Master's degree program in 2007 (the Plain Language model; Miller et. al., 1997/2001), which was different from the one presented in later courses (CPS: The Thinking Skills Model; Puccio, Murdock & Mance, 2005, 2007). Clearly, development of the model continues.

My attempt to further reconsider the CPS model stems from my desire to be a reflective practitioner; from my need to have a model that I am comfortable teaching in corporate and organizational training sessions; from my need to better understand and internalize the model and how it is used; and from a conviction that there is more work to be done, and that I may be able to contribute to the inquiry. My reconsideration of the model here might provide one path for further research and understanding.

Shaping My Conception of CPS

Regardless of whether my reconsideration of CPS furthers the conversation, this inquiry is something I am compelled to do: a reflective practitioner of CPS inevitably questions it. In my two years of formal study, and 20 years of immersion in the business world, I have been exposed to many conceptions of the CPS model, and other problem-solving constructions. These include the following.

- Osborn-Parnes CPS ("finding") model (e.g., Isaksen, Dorvall & Treffinger, 1994)
- CPS Plain Language model (Miller et. al., 1997/2001)
- CPS: the Thinking Skills Model (Puccio et. al., 2005)
- CPS Version 6.1 (e.g., Treffinger, Isaksen & Dorval, 2005)
- Simplex (Basadur, 1994)
- Productive Thinking model (Hurson, 2008)
- TRIZ
- Design thinking
- Synectics (e.g., Gordon, 1961)

There are, perhaps, two approaches for the reflective practitioner: adopt one of the existing models, or build upon them. I chose the latter route. In my reconsideration, I

have done the following: retained CPS as the core process; selected concepts and elements from several CPS models; renamed some process components; redrawn the model in an entirely new way; and proposed a new extension of CPS: The Thinking Skills Model (Puccio et. al., 2005). I felt that this approach was necessary in order to fill gaps I perceived in the current conceptions, and to find a conception that, in my professional experience, would resonate with my particular audience.

This reconsideration happened now because of the depth of inquiry the Concept Project required. Specifically: by conducting a literature review, I increased my knowledge of creativity, CPS, and problem-solving methods and tools; by applying CPS at every stage of the project, I increased my skills at applying CPS; and in researching, applying, and writing, I was able to converge on my preferred language, structure, and depiction of the CPS model. Section Five: Key Learnings, provides more information about the model search and the result.

Building on a Career of Creative Leadership, Entrepreneurship, Writing and Training

Entrepreneurship and creative leadership. My current company, OmniSkills, LLC, is the fourth I have created or co-created in my 20-year working career. Three of those companies, encompassing 18 years, have provided training and related professional development services to business customers. My companies were all run as creative enterprises. Before I had the language of CPS, I practiced its philosophies, and used them in my businesses and with my employees. (I had taken Introduction to Creative Problem Solving as a freshman at Buffalo State College in 1980, and while the terminology did not stick, the foundational thinking did.) Nothing went unquestioned: not how the

industry did things, and not how we did things. We applied creative processes – some natural, some deliberate – to nearly every aspect of the business. When I look back at specific successes, they are the times in which we were best able to be creative. When we were least successful were those times we held our creativity in check. I will draw on my experiences as a creative leader – and, sometimes, a not so creative leader – in writing *Creating the Future*.

Creative training. This creative orientation continues in my current company, which was formed in 2005. While my previous companies always brought creativity into the classroom in how we delivered training, we did not introduce it as an explicit skill except when teaching creativity directly. (Teaching creativity and entrepreneurial thinking was a personal project of mine, and something I was able to do intermittently over the past five years.) Influenced by the Torrance Incubation Model of Teaching and Learning (TIM), OmniSkills now includes creativity skills in all topics, and uses TIM's structure (heightening anticipation, deepening expectations, extending the learning) (Murdock & Keller-Mathers, 2008, p. 12) as a guiding design principle. This will also effect how *Creating the Future* is written.

Creative writing. Writing is at the core of training. Some training organizations purchase courseware from other provides, but not mine. Endlessly dissatisfied with what is available in the marketplace, we create our own courses and materials. My co-workers and I have written many thousands of pages, and we continue to write, always driven to simplify complex topics. This experience is crucial in writing *Creating the Future*, which is a direct descendent of my work as a course designer, and is a natural progression for me, the obvious thing to do next.

Publication Creates Professional Opportunities and Career Dedication

I came to the Master's degree program at the International Center for Studies in Creativity (ICSC) at Buffalo State College with two conscious goals: to focus my career on being a specialist in creativity, Creative Problem Solving, and related disciplines; and, by having and maintaining this focus, to acquire the necessary domain knowledge and experience to contribute to the field.

The external and internal aspects of my personality manifest themselves in the two aspects of my work: training and writing. (These correlate to the Extraversion and Thinking tendencies in my Myers-Briggs type profile; Briggs, 1998.) My company provides organizational development services, including training, facilitation, consulting, assessments, and related services. My work has two primary facets: content delivery (that is, training and facilitation), and content creation (course development, instructional design, and writing). Both training and writing are personal passions, and I have constructed my work life to support them. However, the writing I do for work is not a full expression of my writing talent or ambition, and the written works have little usefulness or impact outside of the classroom.

Creating the Future is a way to increase my writing's utility and reach, by publishing a book that is easy and entertaining to read, and yet which brings clarity to the depth and complexity of CPS and its concepts. In addition, the book fills professional needs. Once commercially published (not self-published, an assumption I am willing to make), the book will support my business, increasing my credibility and marketability; and it will introduce me to the publishing community (agents and publishers), which could help with the publication of my in-progress novel and future business books.

From a domain expertise perspective, writing the book will require me to dig even deeper into the concepts I have studied so intensively for the last two years. This helps me to grow as a creative person, increasing my depth of knowledge and understanding, and preparing me to make contributions to the field. Among the possible contributions: outside the domain, helping to make CPS accessible to a wider audience; and inside the domain, a future academic exploration of the CPS model proposed here.

SECTION TWO: LITERATURE REVIEW

Introduction

The intent of this literature review is to take a thorough look at books that have attempted to teach a creative problem solving process, or the tools used in creative problem solving. The purpose of the review is to learn what has already been done in this arena, both historically and recently, and to extract lessons and ideas for *Creating the Future*.

Primary Review: Works Similar to the Proposed Book

The references that follow are to the editions of works that I have been able to acquire and personally review. They are included in order of original publication.

1953: Applied Imagination, Alex F. Osborn

Published three years after, and clearly inspired by, Guilford's 1950 challenge to the psychological community to study creativity (Guilford, 1987), Osborn's (1953/1957) *Applied Imagination* provided the first delineation of the process that would become known formally as Creative Problem Solving. The book, however, is not about a formal creative process, and Osborn argues against attempting to codify the process. Osborn noted that "it is unlikely that creative procedure can ever be strictly formulated" (p. 114). "The most that can honestly be said is that it usually includes some or all of these phases" (p. 115):

1. Orientation
2. Preparation
3. Analysis
4. Ideation (in 1953, "hypothesis")

5. Incubation
6. Synthesis
7. Evaluation (in 1953, "verification")

But, Osborn wrote, "in actual practice, we can follow no such one-two-three sequence" (p. 115). In the revised 1957 edition, he added a section to emphasize a point he made in the original book:

> This section has been added to the original version because, despite warnings in our manual of instruction, there seems to have been an undue tendency to try to codify creative procedure. . . . Those steps are neither "scientific" nor are they a "formula." They are presented merely as an aid to the understanding of the several phases of creative problem-solving. (pp. 118-119)

This raises an unavoidable question: what would Osborn think of the way his name is used on the process now known as the Osborn-Parnes Creative Problem Solving process?

In 28 brief chapters, Osborn (1953/1957) argues for the need for creativity, identifies factors that inhibit and encourage it, and provides principles and techniques for creative thinking. Among these: the value of "copious ideation" (p. 146); the need for incubation; how emotions and effort affect ideation; guidelines for brainstorming; and ways to spur ideation that were later codified by Eberle as SCAMPER (adaptation, modification, substitution, addition, subtraction, multiplication, division, rearrangement, reversal, combination).

Applied Imagination was Osborn's fourth book about creativity, after *How to Think Up* (Osborn, 1942), *Your Creative Power* (Osborn, 1948), and *Wake Up Your Mind* (1952). The website for the Creative Education Foundation (which was founded by Osborn) calls *Applied Imagination* "his definitive book" (Creative Education Foundation, n.d.).

1961: Synectics, William J. J. Gordon

Gordon (1961) called this book's purpose "to describe the evolution of Synectics' theory of creative process, the hypotheses that underly the theory, and the actual implementation of the theory in specific cases" (p. 6). He defines creative process as "the mental activity in problem-stating, problem-solving situations where artistic or technical innovations are the result" (p. 34). Gordon does not attempt to identify, as Osborn did, all the possible phases of a comprehensive problem-solving process; instead, he considers just two steps (p. 37):

1. Making the strange familiar (defining the problem)
2. Making the familiar strange (using analogical tools to arrive at novel solutions).

The latter step includes four mechanisms (p. 37):

1. Personal analogy
2. Direct analogy
3. Symbolic analogy
4. Fantasy analogy

Gordon emphasizes the importance of these mechanisms:

> According to our observations, without the presence of these mechanisms no problem-stating, problem-solving attempt will be successful. The mechanisms are to be regarded as specific and reproducible mental processes, tools to initiate the motion of creative process and to sustain and renew that motion. (pp. 37-38)

Because Gordon named his company Synectics, Inc., the term had to serve two purposes: to represent the company and its intellectual property, and to represent the process. This intellectual property confusion may have inhibited the use of Synectics; it can be unclear whether one needs permission of Synectics, Inc., to use Synectics principles, a situation which did not plague CPS.

1970: Lateral Thinking: Creativity Step by Step, Edward de Bono

Although difficult to follow and with a redundant, non-linear style that suggests the book was assembled from pieces, de Bono's (1970/1990) book is a landmark work, introducing "lateral thinking" as a term and a concept: "Lateral thinking involves restructuring, escape and provocation of new patterns" (p. 11) which helps the mind to overcome its commitment to seeing and acting on patterns. Further:

> Lateral thinking is closely related to creativity. But whereas creativity is too often the description of a result lateral thinking is the description of a process. One can only admire a result but one can learn to use a process. (p. 11)

Despite the assertion, lateral thinking is not a process per se, but a series of techniques. Thus, although subtitled "creativity step by step," the book is not a step-by-step process guide. Rather, it is an explication of the concept of lateral thinking, followed by techniques that help the reader to think laterally. The techniques are: generation of alternatives, challenging assumptions, fractionation, reversal, brainstorming, analogies, random stimulation, and "po" (p. 225), which could be described as deliberate provocation.

1974: The Universal Traveler, Don Koberg & Jim Bagnall

Using the metaphor of a journey, design professors Koberg and Bagnall (1974/1991) identify "the seven universal stages of creative problem-solving" (p. 26), while also noting that the stages "need not be linear" (p. 27):

1. Accept situation (commitment)
2. Analysis (research)
3. Define (destination-finding)
4. Ideate (shopping for options)
5. Select (decision-making)
6. Implement (taking action)
7. Evaluate (assessment)

Perhaps interestingly to practitioners of the Osborn-Parnes version of CPS, the authors

say that each of these steps is *either* divergent or convergent, alternating one with the

other (that is, Acceptance is convergent, Analysis is divergent, etc.). Updated about every

10 years, the book is primarily used as a textbook. Each stage includes references for

further reading, and includes such notables as Adams, de Bono, Gordon, Osborn,

Maslow, Parnes, and Rogers.

1983: A Whack on the Side of the Head, Roger von Oech

In his still-in-print book, von Oech (1983/1990) takes a different approach than

Osborn (1954/1957) and Gordon (1961). Rather than identifying a process, von Oech

identifies 10 "mental locks" that can be overcome to spark creativity (p. 10):

1. The right answer
2. That's not logical
3. Follow the rules
4. Be practical
5. Play is frivolous
6. That's not my area
7. Avoid ambiguity
8. Don't be foolish
9. To err is wrong
10. I'm not creative

This amounts to a book of self-awareness, inspiration, and advice. There is a brief

discussion of creative process: "There are two main phases in the development of new

ideas: an *imaginative* phase and a *practical* one. In the imaginative phase, you generate

and play with ideas. In the practical phase, you evaluate and execute them" (p. 38). In this

discussion, von Oech distinguishes between two types of thinking: soft and hard, which is

roughly analogous to divergent and convergent. He notes "both types of thinking play an

important role in the creative process, but usually during different phases" (p. 38).

1990: Thinkertoys, Michael Michalko

In the introduction, Michalko (1990/2006) writes, "creativity is not an accident, not something that is genetically determined. It is...a consequence of your intention to be creative and your determination to learn and use creative-thinking strategies" (p. xvii). Most of the book, then, provides not strategies but specific tools for generating ideas, which are covered in depth. Before presenting the tools, Michalko briefly discusses creativity, and spends eight pages on the challenge statement.

Michalko's extensive list of tools includes some that are familiar to CPS practitioners (e.g., mind mapping, force-field analysis, forced connection, incubation, analogies, morphological analysis, brainstorming, SCAMPER) and many others (e.g., hypnogogic imagery, psychosynthesis, fractionation, pattern language). The tools are inconsistently attributed, with (for example) SCAMPER being properly attributed to Osborn and Eberle, and Mind Mapping not attributed to its creator, Buzan.

For all its success, *Thinkertoys* is not a how-to guide. It provides little in the way of process help. It is, in the end, a collection of divergent thinking tools, well documented. Very little is said about process, and there are no tools for convergence.

1991: Creating, Robert Fritz

Fritz's (1991) follow-up to *The Path of Least Resistance* is about creating what one wants to create using the creative process, but "it is not about creativity, it is not about problem solving" (p. 4). Further:

> There are moments in the creative process when creativity is present, *but there are many more moments when it is not.* If unusualness is the essence of creativity, then the more you master your own creative process, the less you will be aware of creativity because the unusual will, happily, become the usual. It is possible for

creativity to exist without having the creative process. It is also possible to have the *creative process* without having creativity. (p. 6)

According to Fritz, the creative process is a form but not a formula, and consists of nine stages (pp. 21-38):

1. Conception
2. Vision
3. Current reality (to identify the structural tension between the vision and the current reality, because tension seeks resolution)
4. Take action
5. Adjust-Learn-Evaluate-Adjust
6. Building momentum
7. Always have a place to go
8. Completion
9. Living with your creation

While it might appear to the reader, when this form is presented, that the book will discuss these stages in detail, they are barely mentioned after the initial passage, which takes just 20 pages. The remainder of the 305-page book is a philosophical exploration of the person as creator, focusing on the reasons people do not create, and the characteristics and attitudes of those who do.

In stating his thesis about creating, Fritz (1991) criticizes other writers and books in the creativity domain:

> Can creating be taught? Can creating be learned? Yes, but commonly the people who know most about the subject do not teach creating, except in their chosen fields such as the arts or sciences. Rather than there being real creators teaching what they know and use professionally, we find many people who are not creators conferring on themselves the title of "expert on creativity." Many of these people have never created anything other than theories about creativity! The results of their efforts have been singularly unimpressive and commonly have given the creative process a slightly bad name. (p. 4)

Is Fritz addressing Michalko (1990/2006; whose *Thinkertoys* appeared a year earlier), when he writes:

> Some books on creativity attempt to present the creative process as a handy 'tool' in life….But tools do not generate desired results, nor do they lead to action in

and of themselves. Tools do not build energy, create momentum, or inspire the heights of human aspiration. (p. 9)

1992: What a Great Idea!, Charles (Chic) Thompson

Thompson's (1992) book is derived from his work as a creativity trainer and facilitator. He attempts to put structure on a process that is likely more dynamic and iterative when delivered in person, which results in little clarity for the reader who would like to follow a process. Thompson identifies these steps:

1. Freedom (p. 1)
2. Expression (p. 43)
3. Creation (p. 79)
4. Action (p. 151)

Each section contains tools that can be used, and a discussion of the importance of the stage. The difficulty is that Thompson's tools often span stages. For example, the second step, "expression," is essentially problem clarification, but the primary tool used is "Idea Mapping" (renamed from Mind Mapping and properly attributed to Buzan), which he uses for clarifying and for solving, all in the chapter on clarifying.

1994: Simplex: A Flight to Creativity, Min Basadur

In 1971, while working in Research and Development at Proctor & Gamble, Basadur discovered the Creative Problem Solving Institute (CPSI), which changed the course of his career. Over the next decade, he modified CPS into the process he would later call Simplex. He also left Proctor & Gamble for academia, earning a Ph.D. and a faculty position at McMaster University, where he could research applied creativity with the help of numerous large companies.

In the book, Basadur (1994) details his process for deliberate creativity, "to unleash

your creative process and thereby dramatically improve your performance" (p. 63). He

takes pains to distinguish process from content, repeating the theme throughout the book,

and calling it "the big secret that you must master" (p. 63) in order to successfully use

Simplex.

The book has several distinguishing features. Each chapter begins with a cartoon, in

which the author discusses creativity and creative process with fellow passengers on an

airplane. Basadur (1994) includes his own instrument, the Creative Problem Solving

Profile, which describes one's preference for Experiencing, Ideation, Thinking, and

Evaluation (p. 51).

Simplex is illustrated on a wheel, a pie cut into eight slices, which represent the eight

steps (Basadur, 1994, p. 85):

1. Problem finding
2. Fact finding
3. Problem definition
4. Idea finding
5. Evaluating and selecting
6. Action planning
7. Gaining acceptance
8. Taking action

These eight steps are grouped into three stages: problem finding (steps 1-3), problem

solving (steps 4-5), and solution implementation (steps 6-8). But Basadur doesn't slice

his pie just one way. He also adds a layer of complexity to CPS as it was rendered by

others at the time, by showing Simplex as an "innovation process" (p. 48). He divides this

innovation process into four quadrants: Generating, Conceptualizing, Optimizing, and

Implementing, where each quadrant contains two process steps (p. 49). This means that

Basadur has sliced the same pie three ways: into eight process steps, into four stages of

an innovation process (each containing two of the eight steps), and into three stages of a

creative problem-solving process (containing three, two, and three of the process steps). Add in the layer represented by the Basadur Creative Problem Solving Profile, and Simplex can suddenly seem less simple than Basadur intends.

As a how-to guide, Simplex may be the simplest to follow, despite Basadur's oft-confusing attempt to unify all concepts into one model. He insists that all steps of the process be followed, in order, every time. This is in stark contrast to current CPS thinking, which sees the process as organic and componential, but should make it easier for the reader to follow.

1994: Creative Approaches to Problem Solving, Scott Isaksen, K. Brian Dorval & Donald Treffinger

While he was the director of the Center for Studies in Creativity (as it was then called) at Buffalo State College, Isaksen led the effort to update the materials used for the foundational classes. The result is a 396-page three-ring binder (Isaksen, Dorval & Treffinger, 1994) which attempts to bridge the gap between academic treatise and textbook. The book has deep theoretical foundations, and these inform the writing, which manages to be both accessible and academic.

The CPS model presented is one of the first non-linear componential models, appearing just two years after "the (linear) model was blown apart" (Isaksen, Dorval & Treffinger, 1994, p. 60) by Isaksen and his colleagues. The language used is precise, conceptualizing CPS in levels: components, stages, phases, and tools:

> At the most general level, CPS is composed of three components. Components are general areas of categories of activity people deal with when they are solving a problem creatively. The include *Understanding the Problem, Generating Ideas,* and *Planning for Action.* Within each component are specific stages. A stage is a

smaller, more specific level of operation within CPS. The CPS framework includes six specific stages within the three components: The stages within Understanding the Problem are Mess-Finding, Data-Finding and Problem-Finding. Generating Ideas includes the Idea-Finding stage. Planning for Action includes Solution-Finding and Acceptance-Finding. At the next and more specific level, each CPS stage has two phases…. The first phase is divergent thinking…. The second phase is convergent thinking…. Finally, the most basic level of the CPS framework involves specific tools or techniques. (p. 39)

1995: Jump Start Your Brain, Doug Hall

Hall, an innovation and marketing consultant (although he refuses to call himself a consultant), is the founder of Richard Saunders International and the creator of the Eureka! Mansion, a kind of innovation lab where corporate clients work with the Hall and his staff in a remote setting in which Hall can add his key component, fun. Hall's (1995) book details his Eureka! Stimulus Response methodology (ESR), and includes a variety of tools to provide the stimulus. The three steps in Hall's (1995) methodology are:

1. Total Immersion, which is preparation, through "gathering up steaming heaps of stimuli, insights, and information that may relate, however tangentially, to your creative challenge" (p. 118).

2. Eureka! Seed Explosion, which is generating "wicked good seed ideas" (p. 118) from the collected stimuli and data.

3. InterAct Inventing, which is "where you assemble seed ideas into sprouts, which you then nurture into hard concepts, practical inventions, and ready-to-go solutions" (p. 118).

Hall (1995) includes 37 divergent tools for the Eureka! Seed Explosion phase, including Mind Dumpster, which is a Synectics-like purge (p. 202); Stimuli Two Step, in which traits of a stimuli are identified, and then a connection is made to the problem, as

with the CPS tool visual connections (p. 216); and Flapdoodling, which is similar to Mind Mapping (p. 247).

The book, however, is oddly devoid of approaches for convergence, or for any of the work that needs to be done in phase three (InterAct Inventing): sorting, selecting, strengthening, planning, etc.

1997: The 7 Levels of Change, Rolf Smith

Smith, who created and ran the United States Air Force Innovation Center, retired from the military and formed The Office of Strategic Innovation, a company which provides, among other services, a School for Innovators, and "thinking expeditions" which include both mental and physical challenges. In the book's introduction, Smith (1997) cites his influences, including CPSI, the Creative Education Foundation, Michael Kirton's Adaption-Innovation theory, and the Myers-Briggs Type Indicator.

Smith (1997) explains the genesis of the model:

> The 7 Levels evolved over several years as I was thinking about how to connect creativity, innovation, and continuous improvement. Each of these goals – common to my clients in corporate America and all of us as individuals striving to succeed in life – shares common themes. It struck me that they are all about ideas. Creativity is about having ideas, and innovation and continuous improvement are about implementing ideas. Ideas are about change. When you implement a new idea, you cause a change. This led me to insights about the different sizes and levels of change. (p. 10-11)

The 7 Levels of Change is not a process, and Smith does not address process in a structured or deliberate way. Rather, the 7 Levels are a framework for what can be changed, and how much change is occurring. Within the book, as he discusses each level of change, Smith presents tools that can be used to bring about change at that level. Many of these tools will be familiar to CPS practitioners. Perhaps the most lasting tool is

Smith's first one, blue slips, a simple method for capturing ideas as they occur, whenever and wherever.

Like CPS: The Thinking Skills Model (Puccio et. al., 2005), each level in the 7 Levels framework has a corresponding thinking skill, shown in parentheses (Smith, 1997, p. 3):

Level 1: Effectiveness – Doing the right things (effective thinking)
Level 2: Efficiency – Doing the right things right (efficient thinking)
Level 3: Improving – Doing the right things better (better thinking, positive thinking)
Level 4: Cutting – Doing away with things (refocused thinking)
Level 5: Adapting – Doing things other people are doing (visual thinking)
Level 6: Diff*f*erent [*sic*] – Doing things no one else is doing (lateral thinking)
Level 7: Impossible – Doing things that can't be done (imaginative thinking)

1997: Creativity Unbound, Blair Miller, Jonathan Vehar & Roger Firestien

Miller et. al.'s (1997/2001) book was intended for use at the ICSC, and in the authors' consulting and training practices. The result is a book that is aware of its academic roots but does not dwell on them. The book is cleanly laid out, with most concepts restricted to one page or two facing pages. For its brevity, the book is not quite a how-to guide, although a section of the book (pp. 68-79), which delineates the stages, comes close.

Perhaps the most important achievement of the book is its recasting of the CPS model itself. There are two significant changes from earlier models. First, the long-tenured "finding" language of the Osborn-Parnes CPS model is replaced with more literal, plain language terms (for example, Problem-Finding becomes Clarify the Problem). Second, the model is illustrated as a Venn diagram, to emphasize CPS' organic and iterative nature.

1998: Cracking Creativity, Michael Michalko

Perhaps influenced by SCAMPER, a tool included in both of his books, Michalko (1989, 1998) adapts and reconfigures the content of *Thinkertoys* to create *Cracking Creativity*. Whereas *Thinkertoys* was organized by tool types, *Cracking Creativity* organizes his tools – many of which are the same – into a new shape, by types of creative strategy.

Part I, "Seeing what no one else is seeing" (Michalko, 1998, p. 15), focuses on defining the problem, including restating it in different ways, and drawing a problem to aid in understanding. Part II, "Thinking what no one else is thinking" is a more conventional set of divergent thinking tools.

2003: The Creative Habit: Learn It and Use It for Life, Twyla Tharp

Choreographer Tharp (2003) describes creativity as a piece of one's identity, inextricably tied in with one's behavior – and a lot of that behavior is the hard work of creation:

> I keep stressing the point about creativity being augmented by routine and habit….It is the perennial debate, born in the Romantic era, between the beliefs that all creative acts are born of (a) some transcendent, inexplicable Dionysian act of inspiration, a kiss from God on your brow that allows you to give the world *The Magic Flute,* or (b) hard work. If it isn't obvious already, I come down on the side of hard work. (p. 7)

Tharp then identifies those habits, some of which might also be described as behaviors or techniques:

1. Rituals of preparation (beginning your day and working with habitual acts; p. 12)
2. Your creative DNA (finding your creative identity; p. 34)
3. Harness your memory (making connections; p. 60)
4. Before you can think out of the box, you have to start with a box (collect what you know, what you have, what you need for a project; p. 78)
5. Scratching (hunting about for ideas; p. 92)

6. Accidents will happen (being open to accidents; walking the line between planning and over-planning; p. 116)
7. Spine (moving from idea to a core concept that holds the solution together; p. 140)
8. Skill (master the underlying skills of your creative domain, and build your creativity on the solid foundation of those skills; p. 160)
9. Ruts and grooves (the difference between working and working creatively; p. 182)
10. An "A" in failure (the benefits and inescapable nature of failure; p. 210)

While not a step-by-step how-to guide – which would not suit a book that identifies creative behavior as habit, encompassing all aspects of a life – the book does attempt to show the way there. Each chapter ends with exercises that illuminate the concept, making it a kind of workbook for establishing creative habits.

2007: Creative Leadership: Skills That Drive Change, Gerard J. Puccio & Mary C. Murdock, Marie Mance

Puccio et. al. (2007) combine the scholarly with the practical in their book, which could serve as a textbook or as a guide for businesspeople. The book first attempts to show creativity as a core competence of leadership, then describes CPS: The Thinking Skills Model. The Thinking Skills Model changes several things about the traditional CPS process: it reconsiders and renames the stages; it adds a meta-step (assess the situation) to show oversight of the process; it removes data gathering as an explicit step, and makes it more a part of the overall process; and it equates each stage to a type of thinking (p. 50):

1. Assess the situation (diagnostic thinking)
2. Exploring the vision (visionary thinking)
3. Formulating challenges (strategic thinking)
4. Exploring ideas (ideational thinking)
5. Formulating solutions (evaluative thinking)
6. Exploring acceptance (contextual thinking)
7. Formulating a plan (tactical thinking)

2007: Jack's Notebook: A Business Novel About Creative Problem Solving, Gregg Fraley

Creative Education Foundation board member, CPSI trainer, and innovation consultant Fraley's (2007) book embeds CPS into a novel, where the protagonist uses the process to solve a mystery. Revealed throughout book, Fraley explicitly describes his version of CPS in a quick reference at the end (p. 215):

1. Identify the challenge
2. Facts and feelings exploration
3. Problem framing and reframing
4. Idea generation
5. Solution development
6. Action planning

Like others, Fraley groups his steps into phases: problem exploration, brainstorming, and getting into action. The name of the middle stage, brainstorming, is likely to cause some consternation among CPS practitioners who have been trying to reclaim brainstorming as a tool – and not the only tool – for divergent thinking.

Fraley also shows some relationship to Hurson (2008), by using the phrases "make lists" and "make choices" as substitutes for divergent and convergent thinking.

2008: Think better, Tim Hurson

Hurson is a Creative Education Foundation trustee, founder of the company think[x] intellectual capital, a founding director of Facilitators Without Borders, and a creator of the MindCamp creativity conference. Like many who teach and write about a creative process, Hurson's (2008) book is based on his version of CPS, called the Productive Thinking Model (p. 92):

1. What's going on?
2. What's success?
3. What's the question?
4. Generate answers

5. Forge the solution
6. Align resources

One of Hurson's (2008) particular gifts is naming things in a memorable way. For example, one of the questions in step one is "what's the itch?" (p. 105). "KnoWonder" (p. 111) is a data-gathering technique. A tool for establishing the future pull is the "Imagined Future," or "IF" (p. 130). The tool for establishing criteria (which, breaking from traditional CPS, is placed in step two) is called DRIVE: Do, Restrictions, Investment, Values, and Essential outcomes (p. 137). Hurson also uses memorable concepts from his forbears. Two concepts with clear lineage are the "Target Future" (p. 115), which suggests the influence of Fritz (1991), and the "Future Pull" (p. 127) which was used by Land and Jarman (1993). Finally, language is often simplified: divergent and convergent thinking are called creative and critical thinking, but just as commonly, Hurson will call these two skills "making lists" and "making choices" (p. 46).

After outlining the steps of the model, including the tools needed at each step, Hurson (2008) then concedes that "all models are wrong" (p. 217), and that becoming better at productive thinking requires that one first learn the rules, and then be able to break them, for example, by using the model componentially.

Analysis

Simplifying, the reviewed books could be grouped into two broad categories: books about a specific creative process, and books about general creative (usually idea generation) techniques.

Inevitably, the authors who wished to impart a creative process found it necessary to define and defend the concept of creative thinking – somewhat of a proof-of-concept

approach – in addition to teaching how to accomplish it. The result, in all reviewed works of this type, was a lengthy book in which the reader would have to extract the process from the work in order to use it. Some of the writers got tangled up while describing their process (e.g., Thompson), making it unclear what to do when.

The more successful books, commercially, were those that focused on techniques for idea generation (e.g., Hall, 1995; Michalko, 1990/2006; von Oech, 1983/1990). Books designed for the classroom (e.g., Miller et. al., 1997/2001; Koberg & Bagnall, 1974/1991) were the closest to how-to guides, but were not commercially marketed. None of the recent commercially-oriented books could be considered how-to guide, although many claim to be precisely that. Hurson's (2008) book, despite being readable and clear, still makes it difficult to answer the question: what do I do next?

The apparent gap is a book that makes it easy for the reader to try out CPS, in whole or in part, and does not attempt to convince the reader that creativity is necessary, or that everyone is creative in some way, or that CPS is the path to follow.

Selected Bibliography

Reviewed Works: Selected Books on Creative Process

The books on this list are those that attempt to teach a creative process, therefore providing the closest possible comparison point for *Creating the Future*. While there are dozens of additional works available, criteria for inclusion included books specifically about CPS, and books that were popular in the marketplace.

Basadur, M. (1994). *Simplex: A flight to creativity.* Buffalo, NY: Creative Education Foundation.

de Bono, E. (1990). *Lateral thinking: Creativity step by step.* New York: Harper & Row. (Original work published 1970)

Fraley, G. (2007). *Jack's notebook: A business novel about creative problem solving.* Nashville, TN: Thomas Nelson.

Fritz, R. (1991). *Creating.* New York: Fawcett Columbine.

Gordon, W. J. J. (1961). *Synectics.* London: Collier-MacMillan.

Hall, D. (1995). *Jump start your brain.* New York: Warner Books.

Hurson, T. (2008). *Think better*. New York: McGraw-Hill.

Isaksen, S. G., Dorvall, K. B. & Treffinger, D. J. (1994). *Creative approaches to problem solving.* Dubuque, IA: Kendall/Hunt.

Koberg, D. & Bagnall, J. (1991). *The universal traveler*. Menlo Park, CA: Crisp. (Original work published 1974)

Michalko, M. (1998). *Cracking creativity*. Berkeley, CA: Ten Speed Press.

Michalko, M. (2006). *Thinkertoys* (2nd ed.). Berkeley, CA: Ten Speed Press. (Original work published 1990)

Miller, B., Vehar, J. & Firestien, R. (2001). *Creativity unbound: An introduction to creative process* (3rd ed.). Williamsville, NY: Innovation Resources, Inc.

Osborn, A. F. (1957). *Applied imagination: Principles and procedures of creative problem-solving* (Rev. ed.). New York: Scribner's. (Original work published 1953)

Puccio, G. J., Murdock, M. C., & Mance, M. (2007). *Creative leadership: Skills that drive change.* Thousand Oaks, CA: Sage.

Smith, R. (1997). *The 7 levels of change: The guide to innovation in the world's largest corporations.* Arlington, TX: Summit.

Tharp, T. (2003). *The creative habit: Learn it and use it for life: a practical guide.* New York: Simon & Schuster.

Thompson, C. (1992). *What a great idea!: The key steps creative people take.* New York: HarperCollins.

Von Oech, R. (1990). *A whack on the side of the head: How you can be more creative* (rev. ed.). New York: Warner Books. (Original work published 1983)

Additional Works of Interest

Books on this list, which were not included in the literature review, are additional

sources of content, ideas, and inspiration for *Creating the Future*. They were selected

without specific criteria, except that they interested me.

Adams, J. L. (1986). *The care and feeding of ideas.* Reading, MA: Addison-Wesley.

Adams, J. L. (2001). *Conceptual blockbusting: A guide to better ideas* (2nd ed.).
        Cambridge, MA: Basic Books. (Original work published 1974)

Amabile, T. M. (1996). *Creativity in context.* Boulder, CO: Westview Press.

Buzan, T. (1988). *Make the most of your mind.* New York: Fireside. (Original work
        published 1977)

Campbell, D. P. (1977). *Take the road to creativity and get off your dead end.*
        Greensboro, NC: Center for Creative Leadership.

Cameron, J. (1992). *The artist's way: A spiritual path to higher creativity.* Los Angeles:
        Jeremy P. Tarcher/Perigee.

Cameron, J. (2002). *Walking in this world: The practical art of creativity*. New York:
        Jeremy P. Tarcher/Putnam.

de Bono, E. (1994). *de Bono's thinking course* (Rev. Ed.). New York: Facts on File.
        (Original work published 1982)

de Bono, E. (1999). *Six thinking hats* (Rev. Ed.). Boston: Little, Brown. (Original work
        published 1985)

Ditkoff, M. L. (2008). *Awake at the wheel: Getting your great ideas rolling (in an uphill
        world).* Garden City, NY: Morgan James.

Firestien, R. L. (1996). *Leading on the creative edge: Gaining competitive advantage
        through the power of creative problem solving.* Colorado Springs, CO: Pinon
        Press.

Gelb, M. J. & Caldicott, S. M. (2007). *Innovate like Edison: The success system of
        America's greatest inventor.* New York: Dutton.

Hirshberg, J. (1998). *The creative priority: Driving innovative business in the real world.*
        New York: HarperCollins.

Isaksen, S. G. (Ed.) (1987). *Frontiers of creativity research: Beyond the basics.* Buffalo, NY: Bearly Limited.

Land, G. & Jarman, B. (1993). *Breakpoint and beyond: Mastering the future – today.* New York: HarperCollins.

MacKenzie, G. (1996). *Orbiting the giant hairball: A corporate fool's guide to surviving with grace.* New York: Viking Penguin.

Martin, R. (2007). *The opposable mind: How successful leaders win through integrative thinking.* Boston, MA: Harvard Business School Press.

Mattimore, B. W. (1993). *99% inspiration: tips, tales, and techniques for liberating your business creativity.* New York: AMACOM.

McCloud, S. (1993). *Understanding comics: The invisible art.* New York: HarperCollins.

Miller, B., Vehar, J. & Firestien, R. (2001). *Facilitation: A door to creative leadership* (3rd ed.). Williamsville, NY: Innovation Resources, Inc. (Original work published 1997)

Parnes, S. J. (Ed.) (1992). *Source book for creative problem solving.* Hadley, MA: Creative Education Foundation.

Rubinstein, M. F. & Firstenberg, I. R. (1995). *Patterns of problem solving.* New York: Prentice Hall.

Ruggiero, V. R. (2007). *The art of thinking: A guide to critical and creative thought* (8th ed.). New York: Pearson.

Sternberg, R. J. (Ed.) (1988). *The nature of creativity: Contemporary psychological perspectives.* Cambridge, MA: Harvard University Press.

Sternberg, R. J. (1996). *Successful intelligence: How practical and creative intelligence determine success in life.* New York: Simon & Schuster.

Sternberg, R. J. (Ed.) (1999). *The handbook of creativity.* Cambridge, MA: Harvard University Press.

Sutton, R. I. (2002). *Weird ideas that work: 11 1/2 practices for promoting, managing, and sustaining innovation.* New York: The Free Press.

Torrance, E. P. (1979). *The search for satori & creativity.* Buffalo, NY: Creative Education Foundation.

VanGundy, A. B. (1992). *Idea power: Techniques & resources to unleash creativity in your organization.* New York: AMACOM.

VanGundy, A. B. (2007). *Getting to innovation: How asking the right questions generates the great ideas your company needs.* New York: AMACOM.

Von Oech, R. (1986): *A kick in the seat of the pants: Using your explorer, artist, judge, & warrior to be more creative.* New York: HarperCollins.

SECTION THREE: PROCESS PLAN

One personal project goal was to use CPS throughout the process, paying particular attention to the parts which do not meet my natural preferences – specifically, clarification and convergence.

On the FourSight assessment instrument (Puccio, 2002), which highlights problem-solving preferences, my preference is Ideator-Implementor, which means I sometimes rush to ideation without deliberate problem clarification, and then rush from idea to implementation, without deliberate convergence. Despite myself, I am often successful with this approach. I often have a clear definition of the problem even if it is not articulated, and I am often able to converge on a solution without using a deliberate selection process (which may be instinct, or some other mechanism).

Therefore, part of my process plan was to be deliberate in my use of CPS at each stage of the process, to deepen my understanding, and possibly to produce more creative results. Using the language of my version of CPS, and showing parenthetically the corresponding stage from CPS: The Thinking Skills Model (Puccio et. al., 2005), the process plan was as follows.

1. Facilitate (Assess the Situation)

This executive stage was used throughout the project, and is mentioned here for its initial role of establishing this process plan.

CPS is both sequential and componential, and the project planning and execution – overseen using the skills of this stage – reflects that. While facilitating the process, I was

able to track a linear progression for the overall project, while often using the skills from one stage within another. Therefore, while the project phases did not always occur entirely in the order described here, this plan represents the role of each CPS stage in the project outcome.

2. Imagine the Future (Exploring the Vision)

To the extent possible (recognizing that a thing changes as it is created), this stage was used to identify a clear vision for the book *Creating the Future,* because this vision affected how I constructed the Concept Project. The final working vision statement was: "I will create a unique and salable guide to CPS." In this statement, "create" would be fully defined in the clarification stage, but was understood to encompass all of the tasks required, from vision to publication.

3. Gather Data (Gather Data)

In my CPS model, in a format change suggested by the CPS: The Thinking Skills Model (Puccio et. al., 2005), data gathering is a function that may be needed throughout the process. It is listed here, after the goal-identification phase, but more properly was occurring in tandem, as the data gathering helped to shape and re-shape the goal.

The first and most important data gathering task was to identify and review books about creativity, creative processes, and related topics. These works were then divided into two categories: *process,* those that attempted to teach a problem-solving model, to see how that model was presented and how successful that approach seemed to be; and *content,* those that provided information about creativity, problem solving, thinking, and

other topics that provided useful source and reference material. Books in the latter category could also include works that provided connections to the subject matter, whether or not they were explicitly in the same domain (e.g., McCloud, 1993).

Thinking componentially about data gathering: in addition to the book list, data gathering would be needed at other stages, such as when searching for an agent or publisher to query; when researching the format of a book proposal; and when researching other versions of CPS, in the continuing process of refining my own.

4. Find the Questions (Formulating Challenges)

This stage, called "Clarify the Problem" in the CPS Plain Language model (Miller et. al., 1997/2001), includes many questions, and would be revisited throughout the Concept Project. These included: what might be all the formats in which the book can be published? What might be all the topics that should be included in the book? How to create a true "how to" guide to CPS? How to synthesize the many things I know about creativity and CPS? How to create a creative guide to creativity? How to write a marketable book proposal?

5. Generate Ideas (Exploring Ideas)

With multiple questions, there would be multiple opportunities to generate ideas. As this was primarily a solo project, I did most of the ideation myself, but was aided on several occasions by others: my sounding board partner, cohort members, business partner, instructor, and wife.

Tharp (2003) uses the term "scratching" (p. 95) to describe the process of hunting

about for an idea or theme. Scratching is a good description of my idea-generating phase

when I came to the question: "How to illustrate CPS?" This process of trying to re-

imagine the CPS model initially seemed to be a distraction from the project at hand, but

turned out to be instrumental in a revelatory finding – a solution to the conundrum of

linearity versus iteration – and which affected my understanding of the model and how to

present it in *Creating the Future.* (Details of this breakthrough are detailed in Section

Five: Key Learnings.)

6. Craft Solutions (Formulating Solutions)

For each question, there were corresponding solutions that were formulated.

Generally, the primary method I use when working individually and deciding on a

solution is to assess in three ways, any of which might hold sway: logical inevitability,

instinctive reaction, and a preponderance of the evidence.

For example, when deciding on the vision statement (in the "Imagine the Future"

stage), a list of possible statements was followed by painstaking wordsmithing,

attempting to find exactly the right future vision. In the end, the final statement was the

one that finally felt right – an instinctive decision. When creating my final CPS model, it

was somewhat the opposite: there was a logical inevitability to the decision – the moment

when I said "this is finished" – at the end of hours of experimenting and incubating and

refining over many weeks.

7. Explore Acceptance (Exploring Acceptance)

The Concept Project includes a book proposal that is ready to be submitted to an

agent or publisher. Before that final proposal was complete, several pieces of the project required an exploration of acceptance, including: the book outline, the new conception of the CPS model, the sample chapter, and the proposal itself. This was accomplished by finding trusted advisors. For instance, the early CPS model conceptions were reviewed by seven colleagues, and the sample chapter had three readers.

8. Plan for Action (Formulating a Plan)

The project timeline is an action plan; another action plan was created to facilitate the sale of the book after this project is complete. The timeline is shown in Table 1; the action plan for delivering the proposal and continuing to write the book is in Section Six: Conclusion.

9. Create the Future

Like most CPS models, my conception does not include an implementation phase, but concludes at planning. (Although some models use the term "implementation," this is generally understood to be planning, which precedes implementation but is not a part of implementation in most disciplines, including project management.) Still, the need to implement is explicit in my model: the Plan for Action phase concludes with a next action: creating the future. In my Concept Project, then, creating the future is the writing of *Creating the Future*.

Table 1
Final Project Timeline

Week of…	Actions & Deadlines
Sep 7	Concept paper draft (delivered Sep 12)
Sep 14	Concept paper final (delivered Sep 19)
Sep 21, 28	Literature review (reading & summarizing)
Oct 5	Outline conceptions: what should be included?; CPS model reconsiderations
Oct 12	Rough draft of outline; more CPS model reconsiderations
Oct 19	Semi-final outline
Oct 26	Chapters 1-3 draft (delivered Oct 30)
Nov 2	Sample chapter rough draft; semi-final CPS model
Nov 9	Final outline; final CPS model
Nov 16	Chapters 4-6 draft (delivered Nov 17); final sample chapter draft
Nov 23	Create presentation
Nov 30	Final presentation (due Dec 6); final writing and editing; print and bind manuscript
Dec 7	Send completed and bound manuscript
Dec 14	Personal assessment of the work and learning

SECTION FOUR: OUTCOMES

Introduction

This Concept Project has two primary outcomes, each with several moving parts. One outcome is as intended from inception: a fully-realized concept for a how-to guide to CPS, to be written (post project) for the business market, and the accompanying book proposal. In the early stages of this creation, another came about. While attempting to conceptualize a how-to guide about CPS, I realized I first had to re-conceptualize the CPS model itself.

This need had three sources: my dissatisfaction with the Venn diagram as an illustration for CPS, in the Plain Language model being taught by the ICSC (Miller et. al., 1997/2001); my literature review, which showed many other approaches to CPS and problem-solving, each with strengths and weaknesses; and the market analysis, in which I looked for gaps that would allow me to differentiate my work from others. There may also have been a fourth source of motivation, this one being highly intrinsic: a personal desire to contribute to the development of CPS.

Certainly, it would be easier to conceptualize and to write *Creating the Future* using an existing model – that is, the Plain Language model (Miller et. al., 1997/2001), or the Thinking Skills Model (Puccio et. al., 2005), but I was compelled otherwise. As a result, this Concept Project now includes a second outcome, the initial development and introduction of a new extension of CPS, to be called the CPS: Competencies Model.

Primary Outcome: *Creating the Future* Book Proposal

Background: Creating the Book Proposal

Creating a book proposal is a very different task than writing a book, and in one specific way is very like creating this Master's Project. In this project, in order to hit certain writing milestones (read: deadlines), it was sometimes necessary to write about things that did not yet exist, or were not complete, or had not happened. A non-fiction book proposal is typically written before the book, requiring the author to imagine a future state that does not exist. Clearly, for both tasks, creative competencies are required.

A book proposal is about selling a solution, albeit one that has not been produced. That makes a book proposal a prototype, a concept which is found in design thinking. In order to have a prototype, a creative process had to be followed. The process I used is detailed in Section Five: Key Learnings.

The body of the proposal is included as Appendix B; the two sample chapters, which are part of the proposal, are included as Appendix C. To highlight the essence of the proposal, an excerpt from the first section is included here.

> It's a lie: everyone does *not* hate change. What we hate is change that is thrust upon us, without our consent, without allowing us any control, and without allowing us glimpses of what the future holds.
>
> It is this frustration that leads so many to leave their employers and become entrepreneurs, or to stay and become disengaged employees.
>
> What we want is change that we can control ourselves.
>
> The best way to predict the future, according to computer pioneer Alan Kay, is to invent it. But outside of those who invent for a living, what can everyone else do?
>
> To answer that question, let's imagine the future, say, 18 months from now. What anyone will be able to do to take control of the future is to open the guide that is about to become a fixture on their desks, *Creating the Future: A Hands-on Guide*.

Inside, *Creating the Future* is a step-by-step guide to deliberate creativity, a process for creating something original and valuable: imagine the future, find the questions, generate ideas, craft solutions, explore acceptance, and plan for action.

Just by providing a clear process to follow, the book will be a well-worn companion – a departure from many other books on creativity, which either talk (and talk, and talk) about creativity without explaining how to actually use it, or which provide tools for generating ideas, but not the essential *process* needed to make real change.

And yet, *Creating the Future* offers even more. Each step in the creative process is a set of competencies: the interplay of knowledge, skills, and the ability to apply them. As competencies – a hot topic in the business community – each of the process steps can stand alone, making the book even more valuable.

Consider the essential competency of "finding the questions." As a trainer and facilitator, I frequently work with people struggling with problems and how to approach them. Recently, I was facilitating a customer group that had a problem to solve, and they wanted assistance in generating ideas against the problem. The issue, however, was that they did not agree on what the problem was. We focused the session instead on defining the problem, and once that was done, the solution was fairly obvious. They did not need an entire problem-solving process; they needed just one competency – and not the one they thought.

Unlike other books on creativity, *Creating the Future* is meant to be used. It will provide enough citations and references to broaden its audience to knowledgeable practitioners and college instructors, but it is not a treatise on creativity. It will not bog down in minutia. Rather, *Creating the Future* will be a how-to guide full of stepwise instructions, provocative questions, and wide applicability. It will always answer the questions "what do I do now," and "what do I do next."

Secondary (Unintended) Creative Outcome:

Creative Problem Solving: Competencies Model, and Related Products

Background

Before I could conceptualize a model of CPS that resolved the issues I had with other versions, I realized there were basic questions that I needed to answer for myself. Is CPS a process, or not? (Is it a map? A framework?) If it is not a process, or not always a

process, then what are the steps called? (Stages? Components? Pieces? Phases? Skills?)

When we say the process is iterative, what *exactly* do we mean? (Do we really go back

and forth, in and out, and do the steps out of order?) Is it linear, or not? (If it is not, then

how do the parts relate to each other?) A review of the history of CPS (see Section Five:

Key Learnings) provided some clarity, and resulted in the manifesto that follows, which

states my beliefs about CPS. The manifesto leads directly into the proposed CPS:

Competencies Model.

A CPS Manifesto

1. *CPS is a framework.* Because it is organic, CPS can best be described as a

framework, rather than a process, a map, or system. When using the framework, CPS

might be used sequentially, in whole or in part, or might be used componentially. As an

organic framework, one visual depiction of the model may be insufficient.

2. *CPS is sometimes sequential.* The CPS framework is sometimes, perhaps most

often, realized as a sequential process, in whole or in part (that is, even when all six

stages are not used, the ones that are used are likely to follow the typical sequence).

3. *CPS is sequential even when it is not.* In order to successfully use any of the

components, the requirements of some or all of the prior stages must be satisfied. For

example, when generating ideas against a problem, the problem statement must be clear

and correct, even if it was developed outside of the process. In planning for action, a

solution must exist, and that solution should address the correct problem.

4. *CPS is always componential, even when it is sequential.* Whether it is being used in

a sequential process or not, each of the stages stands alone. A stage is informed and

influenced by the surrounding process, certainly, but as an interdependent process, the preceding process stage needs to be completed successfully before the next stage can begin.

5. *Iteration means that we use CPS within CPS.* Iteration does not mean that we move back and forth in the process (unless it was found that a prior stage was completed unsuccessfully). Rather, iteration means that at any stage of a process we might need to use the skills and tools of one or more other stages – essentially, running a sub-process within the main process. For example, while crafting a solution, questions might arise that need to be defined and solved in order to proceed. To do this, we would run a limited two-step process – Find the Questions, then Generate Ideas – and then return with our solution to the main process.

6. *Components are "competencies."* The name "step" or "stage" is valid only when the process is being used in a linear way, making those names insufficient for general use. "Component" lacks breadth, as a component could be one thing. Rather, each component/step/stage requires the interplay of specific knowledge and skills, and the ability to apply them to a situation. This is the definition of a competency. Therefore, each component – Imagine the Future, etc. – is a competency. While each competency has unique properties (for example, each includes the specific thinking skill that was identified in CPS: The Thinking Skills Model; Puccio et. al., 2005), some properties are shared by some or all (for example, the skills of divergent and convergent thinking exist in each competency). Defining each competency will be the subject of future research, but will almost certainly include the sub-skills that are currently being added to the Thinking Skills Model, Torrance's (1979) "beyonder" skills, and affective aspects.

7. *CPS: Competencies Model is a unique expression and potential new extension of CPS.* This proposed conception of CPS, if legitimized, is to be called CPS: Competencies Model. It incorporates in one model the three facets of other CPS conceptions: sequential process, componential use, and iteration, by clarifying each of those terms (as above) and providing process maps for each. Extending the existing models, the CPS: Competencies Model builds on CPS: The Thinking Skills Model (Puccio et. al., 2005) by recognizing that each process stage includes not just thinking skills, but specific knowledge and the ability to apply these to different situations. The illustration of this model needs to be flexible enough to accommodate the many ways the process can be realized.

CPS: Competencies Model – Competencies Defined

A *competency* can be defined as the interaction of skills and knowledge, and the ability to apply them to achieve a result. Using this as a guiding definition, each CPS process stage can be considered a competency. This conception proposes to extend CPS: The Thinking Skills Model (Puccio et. al., 2005), in a way that is complementary to the continuing work being done on the model (L. Switalski, personal communication, November 25, 2008), which is defining additional sub-skills for each thinking skill.

In addition to defining each process stage as a competency, the Competencies Model also renames the stages, taking guidance from other models and from my experience in teaching the model to various audiences. Ultimately, the process stages mirror the Thinking Skills Model, and are closely related to the CPS Plain Language model (Miller et. al., 1997/2001), as shown in Table 2; differentiation and extension will follow in future research. Table 3 shows the current conceptions of the seven competencies.

Table 2
CPS: Competencies Model (CPS:CM) Labels Compared with CPS: The Thinking
Skills Model (CPS:TSM) and CPS Plain Language model

CPS:CM	CPS:TSM	CPS Plain Language
Facilitate	Assess the Situation	--
Imagine the Future	Exploring the Vision	Identify the Goal, Wish or Challenge
Gather Data (included as a task, but not identified as one of the competencies)	Gather Data (included as a task, but not identified as one of the process stages)	Gather Data
Find the Questions	Formulating Challenges	Clarify the Problem
Generate Ideas	Exploring Ideas	Generate Ideas
Craft Solutions	Formulating Solutions	Select and Strengthen Solutions
Explore Acceptance	Exploring Acceptance	(Included in Plan for Action)
Plan for Action	Formulating a Plan	Plan for Action

From *Creativity Unbound,* by B. Miller, J. Vehar, and R. Firestien, 2001; and *Creative Leadership: Skills That Drive Change,* by G. J. Puccio, M. C. Murdock, and M. Mance, 2007.

Table 3
CPS: Competencies Model (CPS:CM) Competencies Briefly Described

CPS:CM Competency	Brief Description
Facilitate	An executive function providing oversight of the process, performed by a facilitator or a person acting in the role of a facilitator (e.g., a person using the process individually). Skills include diagnostic thinking, facilitation, process management, divergence, and convergence.

Table 3 (continued)
CPS: Competencies Model (CPS:CM) Competencies Briefly Described

CPS:CM Competency	Brief Description
Imagine the Future	The first likely stage in an undefined situation, used to identify a desired future state, usually with statements that begin with "I wish…," "I want…," "I will…," or "It would be great if…." Skills include visionary thinking, forecasting, imagination, divergence, and convergence.
Find the Questions	Clarification of the problems that need to be solved, and questions that need to be answered, in order to achieve the desired future state (imagined future), as defined in the previous process stage or outside the process, usually with statements that begin with the invitational stems "How to…," "How might…," "In what ways might…," and "It would be great if…." Skills include strategic thinking, use of analogy and metaphor, reversals, divergence, and convergence.
Generate Ideas	Producing many ideas against the questions defined in the previous process stage or outside the process, and selecting from the most promising to work on. Skills include ideational thinking, fluency, flexibility, originality, openness, divergence, and convergence.
Craft Solutions	Forging an implementable solution from the ideas generated in the previous process stage or outside the process, using other CPS competencies recursively as needed to strengthen and select. Skills include evaluative thinking, critical thinking, elaboration, synthesis, prototyping, divergence, and convergence.
Explore Acceptance	Assessing the environment in which the solution, from the previous process stage or outside the process, will be implemented, and making adjustments to the solution as needed. Skills include contextual thinking, climate awareness, cultural sensitivity, stakeholder identification, divergence, and convergence.
Plan for Action	Creating a plan for implementation of the solution, often as a precursor to, or replaced by, formal project management. Skills include tactical thinking, process and project management, systems thinking, divergence, and convergence.

Based on multiple sources, including *Creativity Unbound,* by B. Miller, J. Vehar, and R. Firestien, 2001; *Creative Leadership: Skills That Drive Change,* by G. J. Puccio, M. C. Murdock, and M. Mance, 2007; an unpublished class handout for CRS 614, Advanced Cognitive Tools for CPS, Buffalo State College, representing work under development G. J. Puccio and L. B. Switalski; and the author's original work.

CPS: Competencies Model – The Visual Model

A hexagon is a mathematically beautiful shape, and perfect for this conception. First, if the hexagon itself represents one competency, the six sides represent the other six competencies, as in Figure 2. Second, hexagons can be tiled together without gaps, something that cannot be done with most shapes. Third, hexagons can be connected to another hexagon on any side, allowing the creation of patterns that move in any, or many different, directions.

Find the Questions | Generate Ideas
Facilitate | Imagine the Future | Craft Solutions
Plan for Action | Explore Acceptance
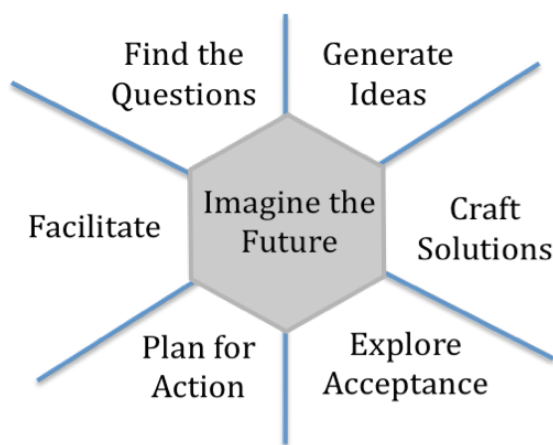
Figure 2. One competency representing a relationship to all others

Process maps. Working with cutouts of hexagons, I realized there are endless ways to piece them together and represent the process, or parts of it, or iterations of it. A conversation with colleague Tara Bissett (personal communication, October 18, 2008) elicited this: people should also be able to create their own models, representing a specific use of CPS. Halfway between saying "the model looks like this" and "go and make your own model" are process maps which show typical arrangements of the competencies/stages (see Figure 3 for a cycle-oriented map, and Figure 4 for a linear sequence map). Users could also make their own maps.

Figure 3. Process map showing CPS: Competencies Model as a cycle
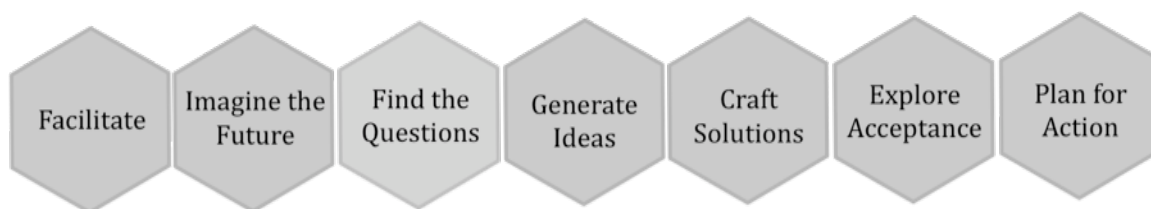
Figure 4. Process map showing CPS: Competencies Model as a sequence

The Addition of Other Elements

In CPS: The Thinking Skills Model (Puccio et. al., 2005), data gathering was excluded as a process step, but remained in the model. A user-generated model such as the CPS: Competencies Model allows data to be placed in the model in specific places where data gathering is needed (see Figure 5). Similarly, incubation is often assumed but never explicit in CPS models, perhaps because incubation can occur anywhere within the process. The CPS: Competencies Model allows explicit placement of incubation by the user (see Figure 5).
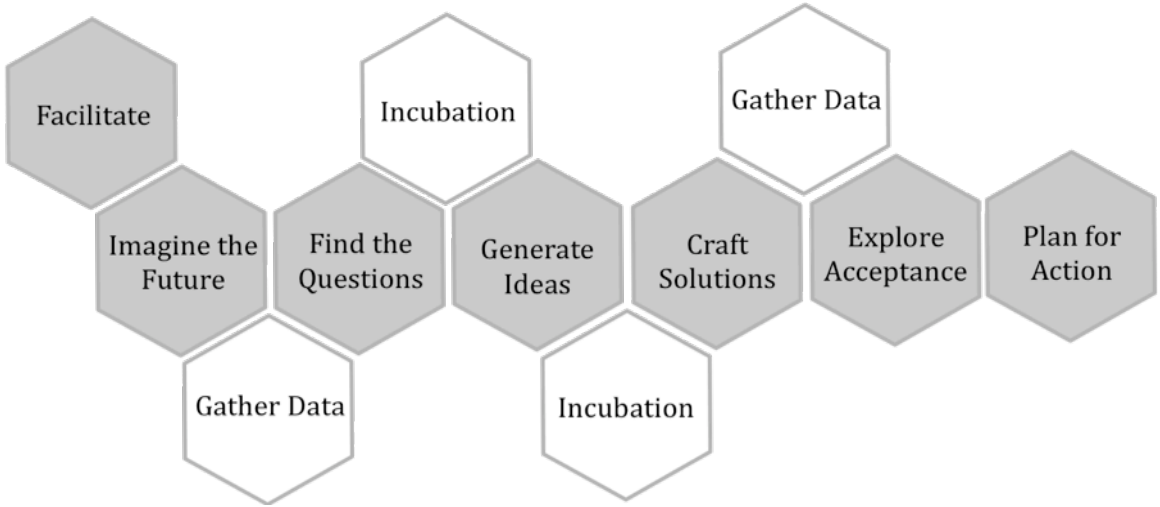
Figure 5. A CPS: Competencies Model process map including data gathering and incubation

Additional Products

The model's competencies, represented by hexagons, could be provided in many ways: as pre-printed ceramic tiles, magnets, laminated cards, or paper cutouts; as hexagon grid paper in which a user could draw his or her own sequence; and online, using a Flash-created application. A representation of blank hexagon grid paper is shown in Figure 6.
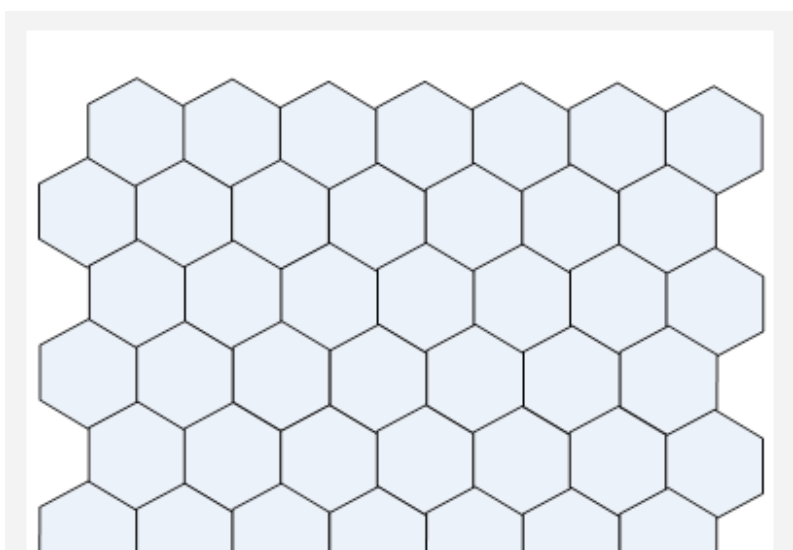
Figure 6. Hexagon grid paper

SECTION FIVE: KEY LEARNINGS

Introduction

As *Creating the Future* is just one of many books I intend to write, two key content-related learnings that will have lasting value are: 1) the structure of a non-fiction book proposal; and 2) how to use the creative process to conceptualize the book before writing it. The first learning was accomplished simply through research: there are many sources of information about the proper format for a book proposal, and they tend to agree, as agents and publishers are apparently a fussy lot. The second learning was achieved through the deliberate application of CPS competencies, and documenting the process.

Process-related learnings can be placed into two categories: conceptual and practical. On the conceptual side, an in-depth analysis of CPS (including a literature review, research and thinking to help me reconcile conundrums in my understanding of CPS, and attempts to illustrate CPS in a way that satisfied me) led to a personal breakthrough in how I understand CPS, which was a springboard to the early-stage development of a new extension of CPS, the CPS: Competencies Model. On the practical side, I spent more time with deliberate use of CPS than on any other personal project, which both increased my skills and knowledge of the process, but also helped to validate the assumptions that underlie the proposed model.

Key Learnings: Content-Related

A Structure and Methodology for Book Proposals

Structure. According to Embree (1996), a non-fiction book proposal contains the following elements: title page and basic sales point; synopsis; author's background and

promotional skills; market potential; competitive works; table of contents and chapter outline; and one or more sample chapters. Glatzer (n.d.) recommends a similar structure: title page, pitch, promotion, author biography, reviews of previous work, competition, annotated table of contents, and sample chapters. These findings might have to be modified to meet the specific requirements of an agent or publisher, if different.

Methodology. The process of creating a proposal for a book that did not yet exist was challenging and liberating. With fiction, the work is completed first, and then a buyer is sought based on the work as it is. With non-fiction such as *Creating the Future*, I adjusted my conception of the work as I crafted the pitch, essentially altering the book to suit the argument I was making for it. The repeatable process that resulted is outlined here.

1. Imagine the Future. Envision the book: title, subtitle, focus, target audience, and unique selling proposition. What attracts my attention? What gives me energy? Result: a wish statement such as: "I will write and sell a book entitled (blank) that is targeted to (blank)."

2. Gather Data. Research the topic and market. What else is out there that is like this? How well are those works selling? Where are there gaps in the available works? What works can I build on? What is popular now? Use a different competency, Explore Acceptance, to test the idea with likely buyers. Would they be interested in a book like this? What would they want from the book? Result: sufficient data collected to be able to define and answer key questions in the next two process steps.

3. Find the Questions. Establish all the questions that need to be answered to enable idea generation. What might be all the possible topics in the book? What might be

included that others have not? How might the book stand out from others? Result: a list of all questions against which I need to generate ideas. (These questions, once verified through several iterations of using this methodology, will likely be fixed, enabling me to skip this stage and move on to generating ideas for each question.)

4. Generate Ideas. Answer the questions divergently. Convergently, select the ideas that are carried forward, retaining outtakes for reconsideration later. Gather Data, if necessary, to spark thinking. Result: a near-comprehensive list of topics to be included in the book.

5. Craft Solutions. Create a comprehensive outline of the work by organizing, ordering, adding and subtracting the topics. Write the proposal, adjusting the outline in response to the way it feels and the new discoveries that are made. Result: a semi-final book proposal.

6. Explore Acceptance. Preview the proposal (a kind of prototype) for knowledgeable colleagues. Adjust the message and content as needed.

7. Plan for Action. Gather Data to help select an agent or publisher, then submit the final proposal. Begin writing the book in advance of acceptance, to accelerate publication.

Key Learnings: Process-Related, Part 1

Background to the Conception of the CPS: Competencies Model

While attempting to outline the book *Creating the Future*, I ran into a roadblock: I did not know which CPS variation I was writing about. After my initial exposure to CPS during my graduate studies at the ICSC, I illustrated the model in a new way (Reali,

2007), but that model was not final in my mind. Therefore, while I did not expect to re-conceive the model during this Concept Project, that is what I was compelled to do. This section details the process-related activities and learnings from the exploration that resulted in the CPS: Competencies Model.

A Selective History of CPS Models

The CPS model that is foundational for the ICSC (and, therefore, my study of CPS) originated with Osborn, who observed creative process and wrote down what he saw. Osborn (1953/1957) made a point of writing that "it is unlikely that creative procedure can ever be strictly formulated" (p. 114), cautioning that "there seems to have been an undue tendency to try to codify creative procedure" (p. 118). The creative processes he observed, then, were descriptive rather than prescriptive, and the phases were not sequential steps. Yet, as CPS evolved, it came to be seen not only as a process, but as a linear and prescriptive one. Osborn collaborator Parnes (e.g., 1988) resisted the linear depiction of CPS, opting for a spiral which attempted to express the iterative nature of the process when it was applied. And yet, the process – by this time often prefixed with "Osborn-Parnes" – was most commonly depicted as linear (see Figure 7), even when taught otherwise. Basadur (1994), on the other hand, embraced the sequential aspect of CPS. In his Simplex variation, he insisted that all process steps be followed, in order, every time (see Figure 8).

Isaksen, Treffinger, and Dorval (1994) broke apart the Osborn-Parnes model so that it returned to a descriptive framework, different than the one Osborn first observed, but in the spirit of it. This model illustrated the stages in a cycle, and while a sequence could be

discerned, the authors now had a visual to accompany the contention that the process did not have to follow a set sequence (see Figure 9). A later version of the Isaksen, et. al. model (named CPS Version 6.1) added an executive step, "Task Analysis," which provided oversight of the process, something that was understood but was not explicit in previous depictions (see Figure 10).

CREATIVE PROBLEM SOLVING (v3.0)

Divergent Phase	Problem Sensitivity	Convergent Phase
Experiences, roles and situations are searched for messes... Openness to experience; exploring opportunities.	MESS FINDING	Challenge is accepted and systematic efforts undertaken to respond to it.
Data are gathered; the situation is examined from many different viewpoints; information, impressions, feelings, etc. are collected.	DATA FINDING	Most important data are identified and analyzed.
Many possible statements of problems and sub problems are generated.	PROBLEM FINDING	A working problem statement is chosen.
Many alternatives and possibilities for responding to the problem statement are developed and listed.	IDEA FINDING	Ideas that seem most promising or interesting are selected.
Many possible criteria are formulated for reviewing and evaluating ideas.	SOLUTION FINDING	Several important criteria are selected to evaluate ideas. Criteria are used to evaluate, strengthen, and refine ideas.
Possible sources of assistance and resistance are considered; potential implementation steps are identified.	ACCEPTANCE FINDING	Most promising solutions are focused and prepared for action; Specific plans are formulated to implement solution.

New Challenges

Figure 7. Osborn-Parnes CPS model, in linear form

From *Creative Problem Solving: The Basic Course,* by S. G. Isaksen & D. J. Treffinger, 1985.

Figure 8. Basadur's Simplex version of CPS

From *Simplex: A Flight to Creativity,* by M. Basadur, 1994.
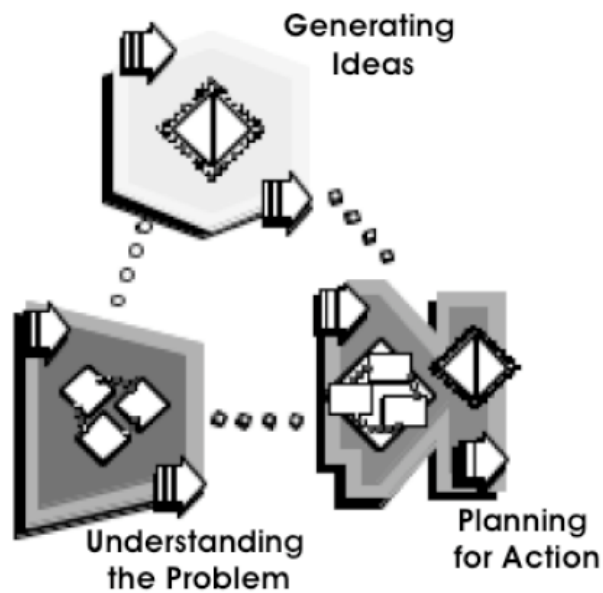
Figure 9. Componential view of CPS

From "Celebrating 50 Years of Reflective Practice: Versions of Creative Problem Solving," by S. G. Isaksen & D. J. Treffinger, *Journal of Creative Behavior, 38*(2), 2004.

CPS v6.1™ FRAMEWORK
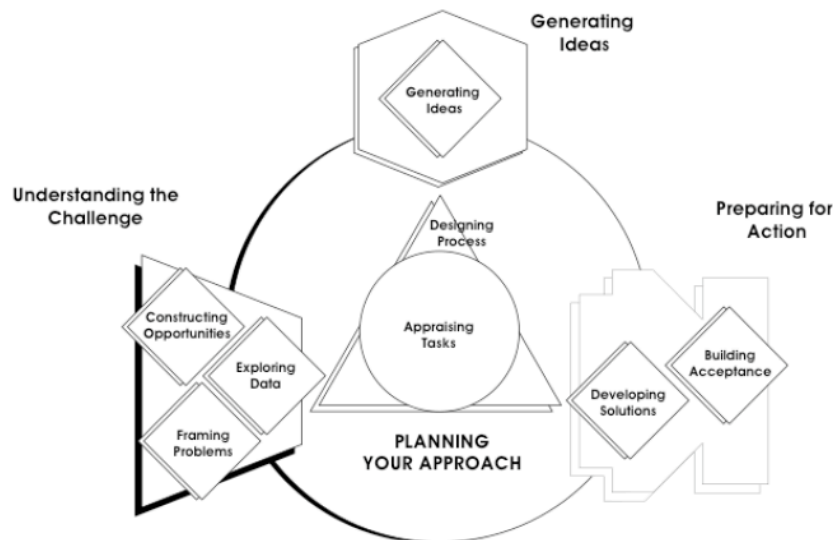
Figure 10. Adding task appraisal to the componential CPS model

From "Celebrating 50 Years of Reflective Practice: Versions of Creative Problem Solving," by S. G. Isaksen & D. J. Treffinger, *Journal of Creative Behavior, 38*(2), 2004.

Miller et. al. (1997/2001), building on this work, renamed the components and changed the depiction of the model to a Venn diagram (not illustrated here) – essentially, pushing the three components of the Isaksen, et. al., model together – which emphasized the componential use of the model. This had the effect of removing any sense of sequential use, although the written description of the model did describe the model sequentially. This dichotomy underscored the debate among CPS practitioners as to whether the process was linear, componential, iterative, or all three.

Puccio et. al. (2005) altered and extended the model to create CPS: The Thinking Skills Model (see Figure 11). The alterations included new names for each of the steps; the addition of an executive step, "Assessing the Situation," which was similar to the "Task Analysis" of Isaksen & Treffinger (2004); removing data gathering as an explicit step, while leaving it in the process as something that is performed as needed; and

expansion of the third part of the process from one step into two, by incorporating both "Acceptance Finding" from Osborn-Parnes and "Plan for Action" from the Plain Language model (Miller et. al., 1997/2001). In addition to these changes, the model is also extended in a new way: each step, including the executive step, is matched to the thinking skill that is being used when that step is executed; for example, the problem clarification step, which is called "Exploring Challenges," is paired with strategic thinking (Puccio et. al., 2007, p. 50). Additional work on this model is attempting to define the sub-skills that would also be in play at each step (L. Switalski, personal communication, November 25, 2008).
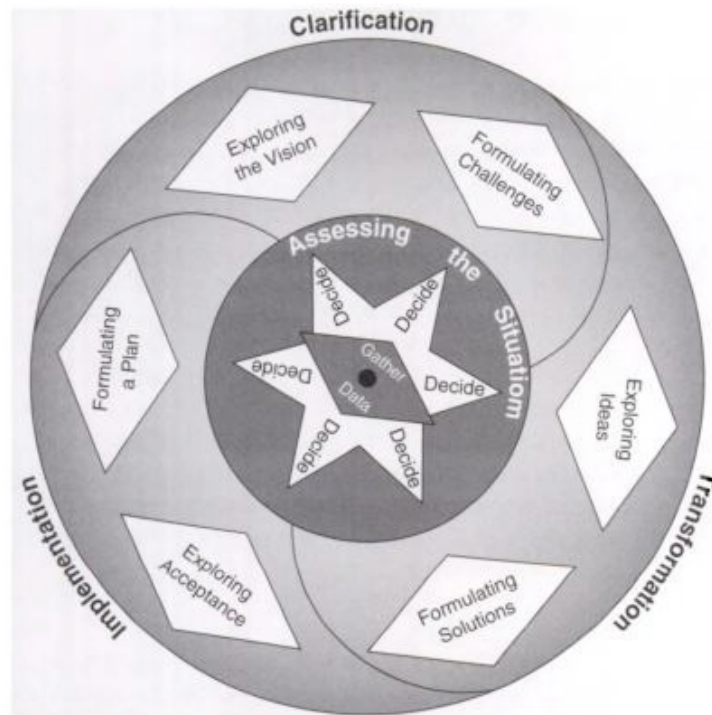
Figure 11. CPS: The Thinking Skills Model

From *Creative Leadership: Skills That Drive Change,* by G. J. Puccio, M. C. Murdock, and M. Mance, 2007.

My first model (Reali, 2007) combined the linear Osborn-Parnes models with some

elements of the Thinking Skills Model (Puccio et. al., 2005, 2007; see Figure 12) and the

Plain Language model (Miller et. al., 1997/2001). This was not precisely right, but did

satisfy my immediate professional need for a model that was easy to understand by a

learner new to the process.
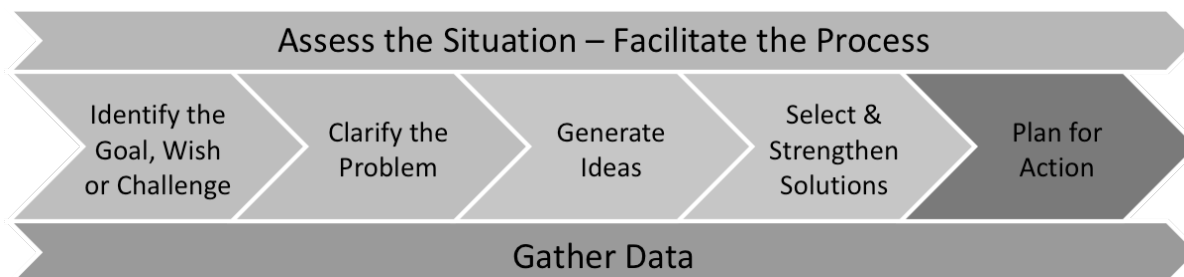
Figure 12. The author's first rendering of CPS

From *Creative Leadership: Skills That Drive Change,* by G. J. Puccio, M. C. Murdock, and M. Mance,
2007. *Creative problem solving model: Overview,* by P. D. Reali, 2007. Retrieved from
http://omniskills.com/cps/aboutcps.htm, November 16, 2008.

Toward Creating a New Model

Still, none of the current models captured my view of the CPS process, including my

own. The fully linear models (e.g., Basadur, 1994; Isaksen & Treffinger, 1985; Reali,

2007) failed to capture the componential and iterative natures of the process. The non-

linear Venn diagram (Miller et. al., 1997/2001) is strongly componential, but provides no

clear path for how to use the model in a sequential way, or where the problem-solver

might enter and exit. The cycle models (Treffinger, Isaksen & Dorval, 2005; Puccio et.

al., 2005) capture the linear aspect while also showing a componential approach, but both

fail to show iteration. Additionally, across the models, only CPS: The Thinking Skills

Model (Puccio et. al., 2005) attempts to define the skills in use when carrying out a step,

although this happens in the accompanying description, not in the illustration itself.

Finally, none of the models explicitly includes incubation.

Each of my attempts to redraw the model were met with challenges by my colleagues. The version I created after the first two classes of my M.S. work at the ICSC (Reali, 2007), was too linear for most observers, prompting one to say, "it doesn't look like that" (S. Keller-Mathers, personal communication, February 14, 2008). Re-conceptualizing the model, as part of this Concept Project, was an exercise in divergent thinking. The first attempt that was presented to my colleagues for feedback was intended to show stages building from the center, with the circles representing iteration. This was seen, however, as not linear enough (e.g., M. Lenhart, personal communication, October 10, 2008), leaving some – even those who were already familiar with CPS – uncertain where to begin or which direction to move.

Figure 13. The author's first re-conceptualization of CPS for the Concept Project

The next model presented to my colleagues (not illustrated here) did not adequately express iteration (e.g., C. Comparetta, personal communication, October 11, 2008).

Another version attempted to address all criticisms, and, I felt, did capture all three aspects (linear, componential, iterative) of CPS. I was so certain that it would be met with acclaim ("Yes! That's it!") that I even named it: CPS-3 (see Figure 14). Acclaim, however, was not forthcoming. I realized the visual was unwieldy and overly complex, or, in one reviewer's words, "convoluted" (A. Arnold, personal communication, October 14, 2008). Therefore, while it did provide, for me, the most complete picture of CPS, I went back to the drawing board, and simplified. The next model used a cycle, with every stage distinct and yet connected to every other, which intended to show componential use, sequential use, and iteration (see Figure 15), but seemed to me too busy, and to require too much explanation.
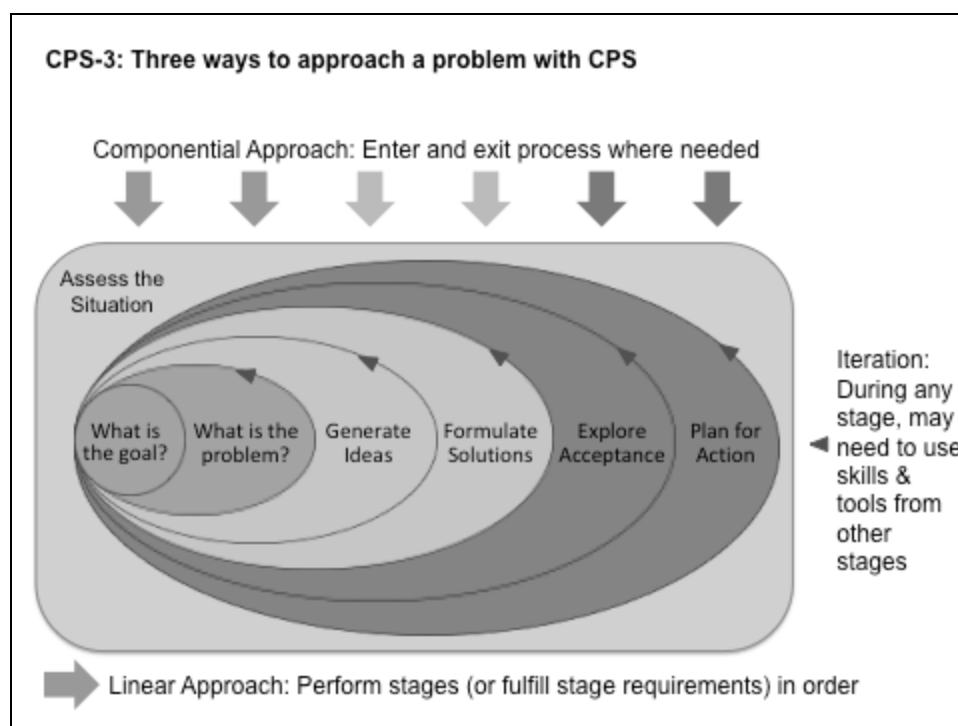
Figure 14. The author's so-called CPS-3, a model to show three facets of CPS

Before I could re-conceptualize the model visually, I realized, there were still a few basic questions I needed to answer about CPS itself. Is it a process, or not? (Is it a map? A framework?) If it is not a process, then what are these steps called? (Stages? Components? Pieces? Skills?) When we say the process is iterative, what *exactly* do we mean? (Do we really go back and forth, in and out, and do the steps out of order?) Is it sequential, or not? (If it is not sequential, then how does it work?)
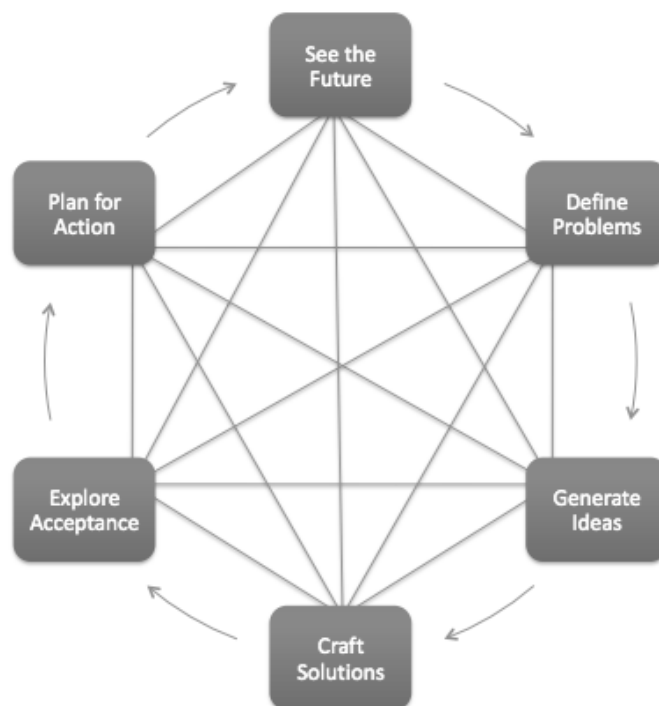
Figure 15. The author tries a cycle with independent but interconnected components

Answering these questions resulted in what can only be described as illumination. My attempt to make sense of iteration was the key. I had previously understood iteration to mean that CPS steps could be done in many different ways, and that a problem-solver might move about it the process. This struck me as the wrong way to think about it. One would not, for example, craft solutions before generating ideas; one would not plan for

action before clarifying the problem – not if one was using the process correctly. One might not need all the steps, but the requirements of a step were needed even if not arrived at using the process. For example, there had to be a larger goal in order to clarify the problems that were preventing the reaching of that goal. There had to be a clarified problem in order to generate ideas. There had to be ideas from which to craft solutions. There had to be implementable solutions for which to plan action. Further, I understood, from having used, taught, and facilitated the process, that one might need the skills of one step while within another – essentially, performing a sub-process within the main process. This view of iteration clarified CPS for me, and led to my CPS manifesto, which is included in its entirety in Section Four: Outcomes, and summarized here.

1. CPS is a framework.

2. The CPS framework is sometimes used in a sequential manner.

3. CPS is sequential even when it is not, as the requirements of earlier stages need to be fulfilled, in or out of the process, for any process stage to be performed successfully.

4. CPS is always componential, even when it is sequential, as every stage stands alone, even as it is informed and influenced by the previous stage.

5. Iteration means that we use CPS within CPS, sub-processes within the main process.

6. Components are not steps or stages unless they are used sequentially, but they are always "competencies," which are the interplay of skills, knowledge, and the ability to apply those to a situation.

7. The CPS: Competencies Model, in which each process step is seen as a unique competency, is a unique expression and potential new extension of CPS.

Representing the New Model Visually

In developing the visual model for the CPS: Competencies Model, I experimented with different shapes: circles, ovals, chevrons, arrows, waves, and others. In each of these representations, the sticking point was the same: how to express iteration. Working with the breakthrough understanding that iteration is not returning to previous parts of the process (assuming that no mistakes were made that necessitated return), but rather using other process competencies – or even running an entire CPS sub-process – within a single stage, I found the solution: to represent *all* competencies (stages) within *each* stage. After experimenting with various representations of this, I happened to try hexagons, and there found the first part of the solution. I first placed the hexagons on the last model I had created, as in Figure 16.
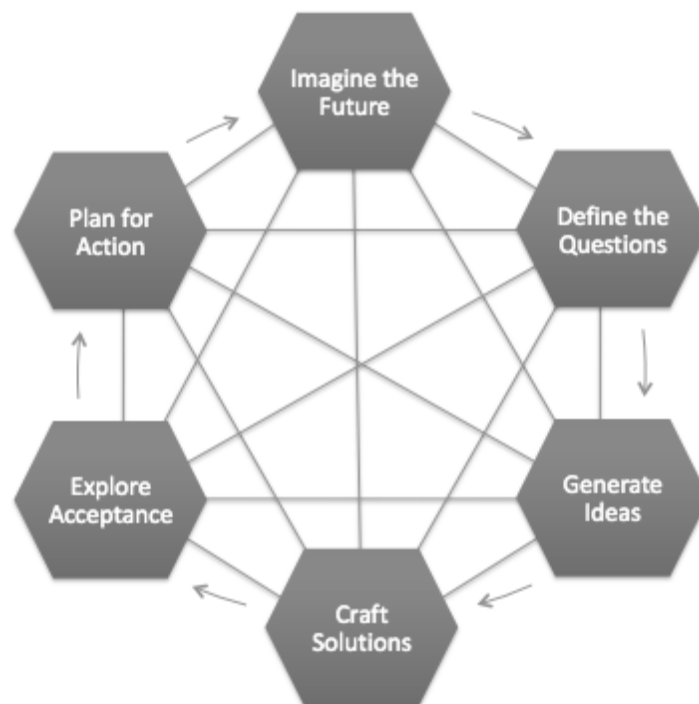
Figure 16. The author's cycle model using hexagons

I then took the model apart, retaining only the hexagons. The hexagon was the perfect shape, having six sides to represent six competencies. In effect, each competency was represented by one of the sides, which meant that every competency had a direct connection to any other competency that might be needed. (Later, when I added in the meta-stage, which I call "Facilitate," the hexagon itself came to represent the competency at hand, while the six sides represented the other six competencies. This made logical sense: a competency did not need to be connected to itself. This effect is shown in Figure 2.) While attempting to piece the hexagons together into a process, I realized that I both needed to, and did not have to. Since the process is organic, it could be expressed differently each time it is used. Still, a new (or pre-mastery) problem-solver using CPS would need guidance. A conversation with a colleague elicited the idea to allow users to create their own maps (T. Bissett, personal communication, October 19, 2008). This led to the second part of the solution, process maps, which show typical arrangements of the competencies (or steps, or stages), but also allow problem solvers to make their own maps. A process map for a cycle is shown in Figure 3; a process map for a sequence is shown in Figure 4; a more elaborate process map, adding data gathering and incubation, is shown in Figure 5.

Key Learnings: Process-Related, Part 2

Background on Conceptualizing a CPS How-to Guide

To the extent possible, I have recreated here the process I followed in conceptualizing the how-to guide, *Creating the Future*, focusing on insights and learnings about CPS and creative process.

1. Imagine the Future

Ultimately, what did I want the book to be? Using the statement starters "I wish…" (IW) and "It would be great it…" (IWBGI) did not produce the results I wanted. For example:

IW I could write a book on CPS

IWBGI I could write a book on CPS

IW I could write a best-selling CPS guide

Etc.

In each case, the wish statement seemed weak, and insufficient. This could reflect my discomfort with the word "wish" (which could be the result of seeing too many Walt Disney films with my daughters). In each case, no matter the statement, the obvious next step was to ask: what's stopping you? The answer: nothing. This conundrum – the inability to create a good wish statement – suggested to me that either (a) this stage was not necessary to my project; or (b) I needed another way to phrase the challenge. I decided to explore (b), as this would deepen my knowledge of this stage.

Puccio et. al. (2007) suggest the use of storyboarding as a visual alternative to wish statements. Creating a storyboard did produce a slightly more satisfying vision: a commercially published, good-selling, and *differentiated* book on CPS. This insight produced the following wish statement:

I wish to write a unique and salable book on CPS.

Not coincidentally, perhaps, I had paraphrased a common definition of creativity in my wish statement: "unique and salable" could just as easily be phrased "novel and valuable." In this case, "novel" or "unique" meant differentiated from the competition,

and "salable" meant "valuable" to a publisher and to business book readers.

I also discovered that I was limiting my use of the wish statement by inserting the word "could," as in "I wish I could write a book on CPS." By changing "could" to "to," I created a statement that led to action rather than idle dreaming: "I wish to write…." Ultimately, my wish statement could be:

I wish to write a creative guide to CPS.

Examining the nuances of wish statements spurred me to make lists of alternative statement starters, which might be more scalable to different kinds of wishes: I wish, I want, I will, I need, I can, I might, I imagine, I see. Certainly, in facilitating a CPS session, one would not want to dangle all these statement starters at once, yet I can see how using different ones might change the focus or the energy. For instance, "I will…" suggests action, in the same way that the statement starters for problem definition ("how to," "how might," etc.) suggest a solution orientation. In my case:

I will write a creative guide to CPS.

Similarly, "I see" and "I imagine" asks the problem solver to create a vision of the future. In my case:

I imagine writing a creative guide to CPS.

I see myself writing a creative guide to CPS.

The latter statement echoes the common CPS solution statement ("What I see myself doing is…"), which I've never liked, as it seems too loose a way to express the outcomes of a CPS application. However, the balance of the two – from "I see…" to "what I see myself doing…" has some possibility.

Are these variations any different than "I wish" and "it would be great if?" Do they

produce different results? There is no empirical evidence, just my firm belief that words matter, and for some audiences there may be a benefit to changing the words.

A colleague (T. Bissett, personal communication) related to me how she makes to-do lists using the past tense, as if the task has already been completed. For example, "Found my keys." Could the first stage of CPS benefit from the same phrasing, such as "I did…" or "I have…?"

This led me to a list of alternative versions of what this stage is for – goals, wishes, challenges, opportunities, possibilities, future states, future conditions, achievements, accomplishments – which collectively led me to my renaming of this stage "Imagine the Future."

2. Gather Data

While I often wondered why data gathering was placed (more or less) second in many versions of CPS – and while I supported CPS: The Thinking Skills Model's (Puccio et. al., 2005) removal of it from the main process stages – I found that I did often need to gather data at this juncture.

The literature review amounted to an extensive data-gathering stage. Initially intending to review only those books which attempted to teach a version of CPS, I expanded the search to include books about creative process that made any attempt to teach a process, or which intended that the process being discussed could actually be used by the reader after reading.

Initial data gathering produced a list of more than 50 works. The first convergence was to exclude books about creative eminence, general creativity, or an esoteric academic

treatise. The second convergence selected the "A" list books that would be reviewed in depth from the perspective of the book's format and perceived success in teaching a process. The remaining books were retained on a "B" list if they could provide help with the content of my book, which required revisiting the list of books removed during the first convergence, readmitting some of them.

This back-and-forth process suggested that the initial convergence was premature. I needed criteria, which are typically seen in a later stage of the process. After this insight, I gathered data (lists of books) again, followed by a three-stage convergence:

Converge 1: of these, which books teach a process, and could be used to analyze how the process was delivered in book form?

Converge 2: of these, which were the most popular (best selling or best known)?

Converge 3: of these and the remainder, for the purpose of writing the book itself, which could provide insight into Creative Problem Solving, another creative problem solving process, or any aspect of creativity from which I could draw ideas and inspiration?

The bibliography, which includes all the titles that survived this excruciating exercise, appears in Section Two: Literature Review.

3. Find the Questions

The word "problem" is often narrowly defined as something that is wrong. Throughout this Concept Project, as in many situations, there are questions that need answers and not necessarily problems – using the narrow definition – that need solutions. CPS, of course, has the word "problem" directly in its name, which has created a

conundrum for some practitioners, including Firestien (1996). I chose not to rename CPS, but to rename this competency from the Plain Language model's Clarify the Problem (Miller et. al., 1997/2001). When I defined the questions for the book conceptualization, this nomenclature proved to be helpful in my thinking. These were not problems to be solved. The final questions were:

What might be all the possible topics in the book?

What might be included that others have not?

How might the book stand out from others?

4. Generate Ideas

My process for generating ideas was to begin with what I had already collected during the data gathering stage, which is similar to the Synectics purge (Gordon, 1961). I then generated additional ideas, following the divergent thinking guidelines. The more important part of this process for me was the convergent phase, in which I had to decide what the book would include, and what would have to be left out. It was important at this stage to check my objectives, as the convergent guidelines state. *Creating the Future* was not going to be a treatise on creativity, but a usable how-to guide containing only as much information as was needed for the reader to accomplish the task.

While converging, it was helpful to visualize the finished product in a way that it almost certainly would *not* be created, if the book were accepted by a commercial publisher: as a series of separate thin books, one for each competency, sold in a box. ("Want to think outside the box? This is the box!") Thinking about how each would have to stand alone helped me to better organize topics, and not be concerned about overlap.

5. Craft Solutions

While divergence and convergence are said to always be separate, it was difficult to discern when I was diverging and when I was converging while writing the book proposal. The balance was certainly dynamic. At one moment I might be diverging, writing copy and exploring what I thought were the proper selling points…and at the next moment I would be converging, editing the copy and making decisions. This was especially true when writing the sample chapters. Some writers put the words down and craft later; I tend to craft as I write, knowing that what comes next depends on what came before. This dynamic balance – which seems to need a new name when applied to writing, such as, say, schizophrenic balance – makes hay of deliberate process, and made it clear to me that *Creating the Future* needs to address natural creative processes as well.

6. Explore Acceptance

The book proposal will be reviewed by no fewer than four people, three of whom will focus on the book's content and the sample chapters, with one focusing on the proposal itself. Following this, changes will be made based on the feedback received.

7. Plan for Action

The action plan for *Creating the Future* consists of five steps:

1. Complete the Explore Acceptance stage, by January 14, 2009.

2. Select an agent or publisher for submission of the proposal, by January 14, 2009.

3. Prepare the book proposal for submission (that is, print in the correct format, modifying as needed for the agent/publisher selected in step 1), and submit the

proposal, by January 21, 2009.

4. Continue writing the book as proposed while waiting for a response.

5. Follow up with the agent/publisher four weeks after step 2, by February 18, 2009.

SECTION SIX: CONCLUSION

Introduction

What I know now about creativity and change leadership is that, regarding my domain knowledge, I have come a very long way and have a long way to go. The next steps, described below, are the next stages on my journey. I believe that I have discovered the very beginnings of a new CPS extension, and I am eager to explore it in more detail.

Next Steps

What I see myself doing now is selecting an agent or publisher for *Creating the Future*, modifying the book proposal according to the selected target's technical specifications, submitting the proposal by January 21, 2009, and following up if I have not heard a response in four weeks. I see myself continuing to write the book as proposed, carrying on from the sample chapters written for this Concept Project.

What I see myself doing is digging deeper into the preliminary CPS: Competencies Model, by beginning to identify the skills, knowledge, and application abilities for each competency. What I see myself doing is taking an Independent Study at ICSC so that I can explore this proposed model with the assistance of those with much more domain knowledge and experience than myself.

What I see myself doing is continuing to teach and facilitate CPS, to field test the competencies orientation and flexible visual representation of the CPS: Competencies Model.

What I see myself doing is completing my M.S. in Creativity degree in 2009, and continuing my work in the field from here forward.

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APPENDICES

APPENDIX A

Concept Paper

Creating "Creating the Future"

Name: Paul Reali   **Date Submitted:** September 19, 2008

Project Type: Meet a Product Need

What Is This Project About?

In January next year, I will begin writing a business/trade book about how to use CPS at work and in life, to be called *Creating the Future.* This Master's project involves the exploration, research, planning, and problem-solving required to conceptualize the book. The project will include three primary components: a literature review of existing books with the same purpose; a complete outline; and a book proposal for submission to a literary agent or publisher. Secondary components: a personal analysis that examines my expertise on the subject of the book, and identifies gaps in my domain knowledge; an exploration of alternative page layouts and book formats; and a sample chapter.

Rationale for Choice

The external and internal aspects of my personality manifest themselves in the two aspects of my work: training and writing. (These correlate to the E and T in my Myers-Briggs type.) I am the co-owner of OmniSkills, LLC, a company that provides organizational development services, including training, facilitation, consulting, assessments, and related services. My work for OmniSkills has two primary facets: content delivery (that is, training and facilitation), and content creation (course development, instructional design, and writing). Both training and writing are personal passions, and I have constructed my work life to support them. However, the writing I do for work is not a full expression of my writing talent or ambition, and the written works have little usefulness or impact outside of the classroom.

Writing *Creating the Future* allows me to use my writing talents in a way that supports my ambition to write and publish a book that can have real impact for readers on a large scale. In addition, the book fills other personal and professional needs. Once published (an assumption, and one I am willing to make), the book will support my business, increasing my credibility, marketability, and daily rates; and it will introduce me to the publishing community (agents and publishers), which could help with the publication of my in-progress novel and future business books.

Separate from the book (which is created outside of the project), the project work itself has significant benefits: by conducting a literature review, I will increase my knowledge of creativity, CPS, and problem-solving methods and tools; by applying CPS at every stage of the project, I will increase my skills at applying CPS; by exploring the publishing business, I will develop a methodology for writing and selling future works; and by

completing the project successfully, I will be ready to continue writing the book (building on the completed sample chapter) in January 2009.

What Will be the Tangible Product(s) or Outcomes?

Within the scope of the project, I will create these tangible products: a literature review (to see what others have done); a market analysis (to see what else is out there currently, and what the current need or niche is); a personal analysis (why I want or need to do this, what I can bring to the project, what is my expertise, what is my unique voice, and what limitations I have that need to be overcome); a detailed outline; a sample chapter; a consideration of alternative ways to print and publish the work; and a book proposal that is ready to be submitted to a publisher or agent. After the project is complete, I will identify a publisher for the work, and will create a specific tangible product, the book *Creating the Future*.\

What Criteria to Measure the Effectiveness of Your Achievement?

Each piece of the project will have its own success criteria. The literature review will include at least 12 sources, summarized in 1-3 paragraphs, and will include an analysis of overall findings, including gaps identified that would provide a niche for *Creating the Future*. The market analysis will identify the books published of a similar type in the last 12 months. The personal analysis will address its five questions sufficiently but not excessively, encompassing no more than five total pages. The detailed outline must be complete, and include every major and minor heading that the final book is expected to include. The sample chapter will be complete, not in draft form. The consideration of alternative ways to structure and lay out the pages will include at least four variations. The consideration of alternative ways to print and publish the work will include at least four options. Finally, the book proposal will be judged as suitable/appropriate for submission by an expert familiar with the publishing process.

Who Will Be Involved or Influenced; What Will Your Role Be?

This is primarily a solo project. At intervals, I will solicit the assistance of others in the creativity community. My Sounding Board Partner, Deirdre Pocase, will be involved through near-daily online chats, regular progress reviews, occasional divergent thinking sessions, and continuous moral support. To help develop a bibliography of works similar to CTF, I will solicit lists of works from my MPCs, both successful and not, that intended to teach CPS or another creative process. To help guide development of the outline, I will solicit feedback from my SBP, MPCs, and others in the creative community who are willing to help. My guide and project chiropractor throughout the process will be Dr. Susan Keller-Mathers.

When Will This Project Take Place?

The work described will take place during the Fall 2008 semester. In January 2009, the formal book proposal (completed as part of the project) will be submitted to agents and/or publishers, and book writing will begin. The first draft will be completed by the end of June 2009. Completion of the book will be dependent upon a publisher's demands. Absent said demands, the book will be completed by the end of 2009, and self-published.

Where Will This Project Occur?

The work will take place from my home office in Charlotte, NC, USA, and other places that my MacBook can go (e.g., my back deck, Panera Bread, Starbucks, and the Mecklenburg-Charlotte Library).

Why Is It Important to Do This?

There are two external ambitions for *Creating the Future.* On a micro scale, the book can provide a clear process (or map) for people who wish to deliberately solve problems and achieve creative outcomes, a map which at the moment is hard to come by. For example, the most recently-published book about a CPS-influenced process, Tim Hurson's *Think Better,* while quite good, is hardly a how-to guide. In order to solve problems using his process, one would have to extract the process from the book's 292 pages. *CTF* intends to be much more accessible.

On a macro scale, *CTF* could be influential. Books on creativity have occasionally caught a wave of popularity, but it is unclear if the books have changed the way large numbers of people think about and apply creativity. *CTF* might go farther. It might add the term "Creative Problem Solving" to the lexicon. It might make defining the problem an essential aspect of how we think. It might move the conversation from "why don't we teach *critical* thinking in our schools" to "why don't we teach *creative* thinking in our schools." In just the way that David Allen's *Getting Things Done* has changed the way people think about time management, *CTF* might change the way people think about creativity.

There are at least two internal (that is, personal) ambitions for *CTF,* as well. First, as previously mentioned, being a published writer is both a life goal and a business-building imperative. Second, the work done in preparing, writing, and selling *CTF* will help me to develop a methodology for writing future books, as my ambition is not to publish one work, but to publish throughout my lifetime.

Personal Learning Goals

- Solidify my (current) understanding of, and interpretation of, the CPS model.
- Determine, and then fill, the major gaps in my knowledge of CPS and creativity.
- Discover a way to make CPS understandable and accessible for everyday use, but delivered in book form and not in the classroom.
- Develop a methodology for researching, writing, and selling future works.

How Do You Plan to Achieve Your Goals and Outcomes?

Above all other considerations, I plan to "walk my own talk" by applying CPS and CPS tools to every facet of the project. I often neglect the tools because I do some things naturally and easily, such as generating ideas and making decisions. And yet, it is likely that I could achieve greater insights, a higher degree of novelty, and more truly creative outcomes if I were to use the process and tools more formally.

Evaluation

As the project is preparation for writing a book, the ultimate evaluation is the acceptance of the book in its intended domains. These domains include the business book publishing domain, as measured by acceptance for publication; the business book readers domain, which will be measured primarily through sales; the critical domain, which is measured by published reviews; and the creativity domain, and the work's acceptance and impact there. Prior to publication, the primary evaluation will be the answer to this question: did the project successfully prepare me to begin writing? While working on the project, evaluation will be my own internal measures of the work's quality and effect on me, which are wholly qualitative and possibly ineffable, coupled with the opinions of my SPB and MPCs.

Project Timeline

Week of…	Actions & Deadlines
Sep 7	Concept paper draft (due Sep 12)
Sep 14	Concept paper final (due Sep 19)
Sep 21	Literature review (reading & summarizing)
Sep 28	Literature review (reading & summarizing)
Oct 5	Rough draft of outline

Oct 12	Less rough draft of outline
Oct 19	Layout conceptions; alternative publishing conceptions
Oct 26	Chapters 1-3 draft (due Oct 27); sample chapter rough draft
Nov 2	Sample chapter less rough
Nov 9	Final outline
Nov 16	Chapters 4-6 draft (due Nov 17); final sample chapter draft
Nov 23	Create presentation
Nov 30	Final presentation (due Dec 6); writing, writing, writing
Dec 7	The whole shebang (due Dec 8)
Dec 14	Personal assessment of the work and learning

Pertinent Literature or Resources

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APPENDIX B

Book Proposal for *Creating The Future*

Creating the Future: A Hands-on Guide

by Paul Reali

Creating the Future: A Hands-on Guide

by Paul Reali

It's a lie: everyone does *not* hate change. What we hate is change that is thrust upon us, without our consent, without allowing us any control, and without allowing us glimpses of what the future holds.

It is this frustration that leads so many to leave their employers and become entrepreneurs, or to stay and become disengaged employees.

What we want is change that we can control ourselves.

The best way to predict the future, according to computer pioneer Alan Kay, is to invent it. But outside of those who invent for a living, what can everyone else do?

To answer that question, let's imagine the future, say, 18 months from now. What anyone will be able to do to take control of the future is to open the guide that is about to become a fixture on their desks, *Creating the Future: A Hands-on Guide*.

Inside, *Creating the Future* is a step-by-step guide to deliberate creativity, a process for creating something original and valuable: imagine the future, find the questions, generate ideas, craft solutions, explore acceptance, and plan for action.

Just by providing a clear process to follow, the book will be a well-worn companion – a departure from other books on creativity, which either talk (and talk, and talk) about creativity without explaining how to actually use it, or which provide tools for generating ideas, but not the essential *process* needed to make real change.

And yet, *Creating the Future* offers even more. Each step in the creative process is a set of competencies: the interplay of knowledge, skills, and the ability to apply them. As competencies – a hot topic in the business community – each of the process steps can stand alone, making the book even more valuable.

Consider the essential competency of "finding the questions." As a trainer and facilitator, I frequently work with people struggling with problems and how to approach them. Recently, I was facilitating a customer group that had a problem to solve, and they wanted assistance in generating ideas against the problem. The issue, however, was that they did not agree on what the problem was. We focused the session instead on defining the problem, and once that was done, the solution was fairly obvious. They did not need an entire problem-solving process; they needed just one competency – and not the one they thought.

Unlike other books on creativity, *Creating the Future* is meant to be used. It will provide enough citations and references to broaden its audience to knowledgeable practitioners and college instructors, but it is not a treatise on creativity. It will not bog down in minutia. Rather, *Creating the Future* will be a how-to guide full of stepwise instructions, provocative questions, and wide applicability. It will always answer the questions "what do I do now," and "what do I do next."

Creating the Future is based on a new extension of the time-tested and academically verified Creative Problem Solving (CPS) model, first observed by Alex Osborn in the 1950s, and carried forward by Sidney Parnes and many others in academic and corporate settings. This extension is called Creative Problem Solving: Competencies Model (CPS:CM), and it integrates creative process with the skills and knowledge needed to use the process. While the primary audience for *Creating the Future* is business readers, the book will also appeal to those who study creativity, problem solving, and innovation, as well as artists, trainers and facilitators, and teachers who wish to adopt it as a textbook for the many creativity courses being taught today.

Competencies in the model are illustrated by mathematically-beautiful hexagons, which link any side to any side, allowing the competencies to be assembled in endless ways – representing the endless ways the model can be used, and providing a strong visual image. It is easy to envision add-on products and services: hexagon-shaped process tiles, a workbook, card pack, web site, and online user community, to name just a few.
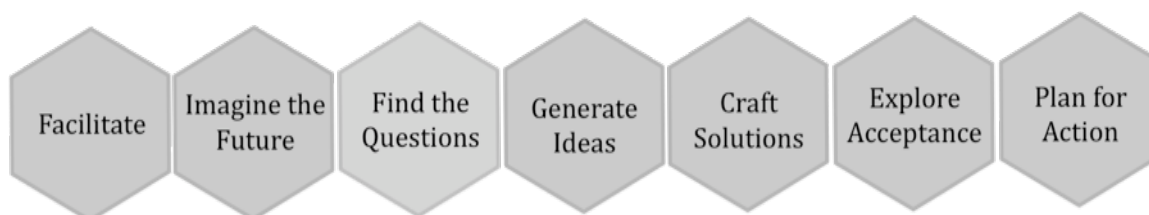
Creating the Future will be insightful, humorous, highly readable, usable and reusable. Each chapter will follow a three-step dance: *discovery* (an illustrative example in which the reader can participate), *digging deeper* (the in-depth coverage of the topic), and extending the learning (advice on how to go forward from here).

Creating the Future will appeal to individual workers who want to control their own destinies, and to managers and leaders who must shape the destinies of their companies. The CPS process can be used for inventing new products or improving existing ones; for discovering new service offerings or improving current models; for solving everyday problems, and crisis-level problems; for discovering opportunities and taking advantage of them.

In times of economic distress, business leaders sometimes hunker down, but the measure of their success will be how they look forward, creating the future before someone else decides what it will look like. *Creating the Future* will help them to take control, the one thing they want most in times of unpredictable change.

Malcolm Gladwell's *Outliers* argues that circumstance is more important than talent in making a person extraordinarily successful This is not news to the creative community. While early research focused on genius, the preponderance of data suggest that hard work is more important – that seeing opportunities and being ready and willing to seize them – that is the key. *Creating the Future* is the guide that a person needs to become an outlier, because luck favors the prepared.

Markets and Promotion

Creating the Future has three built-in audiences which I can reach directly: the creativity community; the business community, especially those interested in innovation; and the training and development community. My skills as a trainer and presenter, and my status as an author (once the book is published), greatly increase the likelihood that I will be selected to present at conferences that cater to these groups.

Creativity Community. First, there is a large community of creativity consultants, trainers, facilitators, and academics, people who are eager for new works from the field, and especially one that introduces a new creative problem solving model. This community is active in several conferences, including the Creative Problem Solving Institute, MindCamp, the American Creativity Association annual conference, and dozens of smaller conferences. Good back cover reviews from recognized names in this community will spur book sales. As a member of this community, I have direct access to this group, which will help land conference speaking spots and book reviewers.

Business Innovation Community. Second, the book will appeal to the innovation-minded business community, including both large businesses and entrepreneurs – the same people who purchased books such as Scott Berkun's *The Myths of Innovation,* and Michael Gelb and Sarah Miller Caldicott's *Innovate Like Edison.* Author status leads to bookings with this group, and a strong performance at one conference leads inevitable to another. Business conferences are also a good source of back-of-the-room sales, which helps spur the viral component that is essential for this audience.

Training and Development Community. Third, the book will appeal to people involved in corporate training and development, and especially trainers who would use the book as their training guide, purchasing copies for each participant, and those who are called on to facilitate creative thinking. Many companies are asking for training on, and facilitation of, creativity and creative process – my own business practice can attest to the surge in demand, as I now work exclusively in that domain – and corporate trainers are in need of a resource that is practical and not scholarly. I am a 15-year member of the American Society for Training and Development (ASTD), which has more than 50,000 members nationwide, and holds conferences that draw nearly 10,000 people each year. I have been a featured presenter for local and regional ASTD events, and can easily parlay this into national speaking engagements.

The subject matter, which is both comprehensive and componential, lends itself to being adapted for short articles, which I can begin selling to magazines beginning even before the book is released, so that they coincide with the book's publication.

A web site is a critical aspect of book promotion. My problem-solving model, which is made up of individual competencies, is illustrated with hexagons. Hexagons fit together in unlimited ways. This structure lends itself to a simple web-based application in which the reader (or potential book buyer) can assemble their own problem-solving process by arranging hexagons, right in their browser.

Also to be considered is the packaging of the book itself. Considering the topic is creativity, there are few (any?) creatively-packaged books on the subject. Let's imagine the future: instead of one hardcover, the books is published as seven or eight slim paperbacks, and packaged as a boxed set which bears the message: "Want to think outside the box? This is the box!"

About the Author

Paul Reali holds an M.B.A. from Syracuse University; a Graduate Certificate in Creativity and Change Leadership, and an M.S. in Creativity (Summer 2009) from the International Center for Studies in Creativity at Buffalo State College. He is the co-owner of OmniSkills, LLC, a corporate training and development company specializing in training and facilitation of Creative Problem Solving, change leadership, and leadership development.
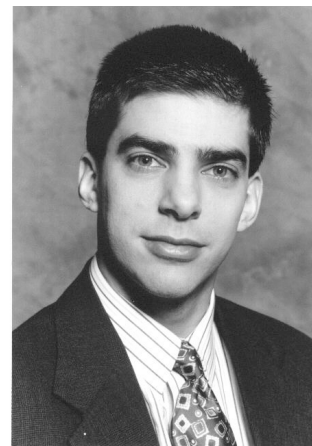
OmniSkills is Paul's fourth company. A serial entrepreneur, Paul has first-hand experience imagining, building, and running creative and innovative companies, including one near-million-dollar enterprise.

Paul is the author of more than 50 training guides published by OmniSkills, with thousands of copies in print. He has published articles in *Office Solutions* magazine, the *Winston-Salem Journal,* and other publications.

As a professional speaker and trainer, Paul has nearly 20 years' experience in getting his ideas across, with groups from two to two hundred. Dynamic and entertaining, warm and witty, Paul can capture an audience and keep them engaged.

Paul is a member of the American Society for Training and Development, the American Creativity Association, the Creative Education Foundation, and the North Carolina Writers Network. He has served on the Board of Directors for the Winston-Salem, NC, Chamber of Commerce, and is a past president of the Piedmont Entrepreneurs Network and KidCommerce USA.

Among his recognitions, Paul was named one of Forty Leaders Under 40 by North Carolina's Triad Business News, and Trainer of the Year by the Piedmont, NC, chapter of the American Society for Training and Development.

Praise for Paul Reali's Conference Workshops

As I have labeled myself as a dynamic speaker who becomes a primary marketing tool for the book, here are two recent reactions to my workshops.

"Thanks for a wonderful conference. My staff really enjoyed the presentation and are already using the [materials provided]. You provide a wonderful service." – Robbie Martin, North Carolina Baptist Hospital

"Paul, Please accept my thanks for your excellent presentation to the Novant Health Leaders at our Leadership meeting this last Thursday and Friday. As our planning group had discussed the needs we recognized internally for encouraging greater ownership of all employees in the business, we just didn't seem to be able to bring this together on our own. Your content and approach were exactly what we needed and wanted for our leaders and they felt the same at the end of the workshop. Thanks for your insight and inspiration! Applause to you." – Sallye Liner, Novant Health

Competition

Will *Creating the Future* have competition? Yes. There are many books that attempt to encourage creative thinking, and the most popular of these stay in print for many years. The successful sales of these titles indicate a continuing market for books about creativity and innovation. As with many fields of endeavor, one book on a topic leads to others, and these books can all lead to *Creating the Future*, which takes the tools and theories of these books and makes them practical and useful.

What will make *Creating the Future* stand out falls into three areas: humor, comprehensive process, and usefulness.

Humor. Many business books get caught up in their own seriousness of mission, including many that discuss creativity and innovation – *innovate or die* attitudes. Conversely, many books on creativity are so breezy as to be more cheerleading than concrete. A book on applied creativity needs to walk a line between those extremes: it should be witty and enthusiastic, but neither deadly serious nor light and fluffy.

Process. The most popular books about creativity are about generating ideas, period. Most people do not need 100 tools for generating ideas; at most, they need a handful. What they need to know is how to find the problems and opportunities, and, after generating ideas, what to do with them. While *Creating the Future* will include tools for generating ideas, these will be part of a larger – and more valuable – process.

Usefulness. A book that sits on a shelf is not useful. *Creating the Future*, as a how-to guide, is intended to be a constant companion. When developing or using a competency (for example, defining a question so that it has a solutions – rather than a complaining – orientation), the book is essential. And more: when solving difficult problems, it will be indispensible.

Interestingly, amazon.com's category on business decision-making and problem-solving shows very few works that associate creativity with problem-solving, which suggests a market niche and opportunity for *Creating the Future*.

Competing titles include:

The Back of the Napkin: Solving Problems and Selling Ideas with Pictures
by Dan Roam (Portfolio Hardcover, 2008)

One of the few books to focus on process, *Napkin* integrates visual thinking (expressed as picture-drawing) with problem-solving in a simple four-step process: look, see, imagine, show. Picture drawing has its limitations, as many people are not comfortable with drawing even simple pictures. There is value in this approach, and my book will recognize it: visualizing with pictures is one of the tools that will be explored, providing an easy springboard from *Napkin* to *Creating the Future*.

A Whack on the Side of the Head: How You Can Be More Creative
by Roger von Oech (Business Plus, 2008; first edition published in 1983)

Still selling is this 25th anniversary edition of a creativity classic. The focus of the book is identifying and breaking through 10 mental blocks that stifle creative thinking. Missing from the book is how to apply your creativity once you have released it. Breezy and humorous, the book falls into the light side of the genre.

The Art of Creative Thinking: How to Be Innovative and Develop Great Ideas
by John Adair (Kogan Page, 2007)

From the publisher's description: "New ideas help businesses gain an advantage over their rivals. Employees who generate these new ideas – who practice the art of creative thinking – are one of a company's greatest assets. *The Art of Creative Thinking* shows the reader practical ways of becoming a more creative thinker. The Art of Creative Thinking shows you how to: develop your understanding of the creative process; overcome barriers to creating new ideas; broaden your vision; build on new ideas; develop a creative attitude; become more confident as a creative thinker."

Think Better: An Innovator's Guide to Productive Thinking
by Tim Hurson (McGraw-Hill, 2007)

The most closely related to *Creating the Future*, this book presents the author's version of CPS, which he calls Productive Thinking. While the author does present a

process to follow, the book cannot be considered a how-to guide. Because each layer is extensively discussed and dissected, the actual steps a person might follow would have to be extracted from the text. The book also includes an extensive discussion of creativity, barriers to creativity, and attitudes about creativity. In attempting to balance the academic with the practical, the book does a better job than most, but at nearly 300 pages it is not a book that one can pick up and use to get something done.

Innovate Like Edison: The Success System of America's Greatest Inventor
by Michael J. Gelb & Sarah Miller Caldicott (Dutton, 2007)

Gelb, the author of *How to Think Like Leonardo da Vinci,* teams up with Caldicott, Thomas Edison's great-grandniece, to delineate the "success system" used by Edison – the Five Competencies of Innovation. Occasionally fascinating and insightful, still this book misses an essential aspect for those who wish to use these competencies: a cohesive and deliberate process that one could follow to invent or innovate.

Caffeine for the Creative Mind: 250 Exercises to Wake Up Your Brain
by Stefan Mumaw and Wendy Lee Oldfield (How, 2006)

A rare gimmick book that is actually useful, *Caffeine* uses an attractive sketchbook design to present 15-minute conceptual exercises that would help spark a creative mindset. Again, however, no process is presented.

Thinkertoys: A Handbook of Creative-Thinking Techniques (2nd Edition)
by Michael Michalko (Ten Speed Press, 2006; first edition published 1990)

One of the most popular books on creativity, the still-selling (and cleverly-named) *Thinkertoys* is a collection of techniques for generating ideas, and it is highly useful in that regard. As many people erroneously consider idea-generation to be synonymous with creativity, this book is often reviewed positively but without noting that the author never delves into process. What is one to do with an idea once it has been hatched? This book does not answer that question, but *Creating the Future* will.

The Creative Habit: Learn It and Use It for Life
by Twyla Tharp (Simon & Schuster, 2003)

Compelling and easy to read, the famed choreographer reveals her creative habits, which have more to do with living a creative life than solving specific problems or exploiting opportunities. Each chapter includes exercises to help the reader explore their creativity. Lacking here, as with others, is a defined process that could be followed.

New titles are released frequently. Among the upcoming titles:

The Firefly Effect: Build Teams That Capture Creativity and Catapult Results
by Kimberly Douglas (Wiley, 2009)

To be released in April 2009. From the publisher's description: "What's the best team you've been on? Do you remember how good it felt to be part of a group that was making a difference? Achieving its strategic goals? A time when you were at your best, and together everyone was even better? Discover Kimberly Douglas' inspiring, yet pragmatic insights into building creative teams that get results. *The Firefly Effect* introduces an evocative metaphor linking the magical activity of catching fireflies on a summer evening to the magical ability of capturing creativity to facilitate teamwork. The author has found that catching fireflies (creativity) doesn't just catalyze results; it takes them to a whole new level. If you'd like your team to work together willingly, creatively and cooperatively; if you'd like your team to actually look forward to group meetings because they always produce something tangible, valuable and strategic; if you'd like your team to create meaningful memories so everyone feels proud to belong – this book's for you. Read it and reap.

Creativity and Innovation: Breaking new ground...without breaking the bank
by Janice Armstrong (A&C Black, 2009)

To be released March 2009. From the publisher's description: "Full of practical advice to help small business owners tap into their creative side and reach their business goals at the same time, this book helps the reader understand what creativity is, get a grip on the creative process, and come up with ideas that will have a real impact on their bottom line."

Annotated Table of Contents

PART I: Natural Creativity

Chapter 1: What Are You Doing Here?

Establishing the book's thesis, and heightening anticipation for the reader, based on a simple question: do you want to shape the future, or simply wait for it to show up?

Chapter 2: Is that Creative or Innovative?

Creative, creativeness, creativity, innovation, change…what do they have to do with each other? Are they all the same thing? Defining terms as a way of sketching the landscape.

Chapter 3: The 5 W's of Creativity

The bedrock beliefs about creativity, as a way of demonstrating that creativity is a decision. What is creativity? The production of something novel and useful. Who can be creative? Anyone who decides to be. Where to be creative? In any domain in which one has sufficient knowledge and experience, which can include career field, home life, hobbies, etc. When to be creative? When one desires something out of the ordinary: a

new solution, an invention or innovation, a change. Why to be creative? To make like better, to improve business, to expand the joy of living, just to name a few. How to be creative? Anywhere on the continuum of creative behavior from adaptive to innovative, based on your preferences, because there are many ways to be creative.

Chapter 4: Creativity in the Wild

What creative behavior looks like as a natural process, without deliberate action. Common stages: preparation, concentration, incubation, illumination, verification, and implementation. Asking the question of the reader: are you naturally creative, or would you benefit from a little help?

PART II: Deliberate Creativity: a How-to Guide

Chapter 5: Creative Problem Solving

An overview of the Creative Problem Solving (CPS) process, and the seven creative competencies that comprise it: Facilitate; Imagine the Future; Find the Questions; Generate Ideas; Craft Solutions; Explore Acceptance; Plan for Action. Answering the question "is it a process or a framework or a map?" (It's a framework for a highly organic process.) Providing process maps for many scenarios, showing that the framework can be used in whole or in part.

Chapter 6: Diverge, Converge

The two essential skills required for all of the competencies and process stages: divergent (non-evaluative) thinking, and convergent (evaluative) thinking. Guidelines for each type of thinking. Examples of the difference between them and how they work together in a dynamic balance.

Chapter 7: Digging In and Stepping Out

A brief overview of two additional parts of any process, data gathering and incubation. Data gathering is an explicit search for relevant information that might be required anywhere in a problem-solving process. Incubation is stepping away from the issue to allow your unconscious mind to work on it.

Chapter 8: Competency 1: Facilitate

The executive competency, "Facilitate" provides oversight for use of the process and any of the competencies. Includes the skills of diagnostic thinking, seeing multiple perspectives, checking assumptions, formulating relevant questions, and identifying underlying structures and patterns.

Chapter 9: Competency 2: Imagine the Future

In any fuzzy, undefined situation, the natural starting point is to broadly imagine the future. When using this competency, first diverge: identify wishes, wants, goals, challenges, and opportunities., using "I wish…," "I want…," "I will…," "It would be great if…" statements. Then converge, to reframe, restate, and finally select the statement that captures the essence of the goal. Includes the skills of divergence, convergence, visionary thinking, visual thinking, storytelling, forecasting, and imagination.

Chapter 10: Competency 3: Find the Questions

When the future state has been identified, either within this process or separately, it is time to succinctly and accurately clarify the questions that must be answered (or, put another way, the problems that must be solved) in order to realize the vision. When using this competency, first diverge, listing many possible questions and problems, using solutions-oriented language: "How to…," "How might…," "In what ways might…," "What might be all the…." Then converge, to sort, strengthen, and finally select the question(s) to carry forward. Includes the skills of divergence, convergence, strategic thinking, reframing, and identifying strategic priorities.

Chapter 11: Competency 4: Generate Ideas

When the questions have been defined, either within this process or separately, the next step is to ideate. First, diverge, generating as many ideas as possible, individually or with a team, using one or more tools (e.g., brainstorming, brainwriting, visual connections, and others that will be detailed in Part III). Then converge to sort and stretch, selecting the best ideas to carry forward. Includes the skills of divergence, convergence, ideational thinking, openness, use of analogy and metaphor, fluency, flexibility, originality, and elaboration.

Chapter 12: Competency 5: Craft Solutions

Beginning with the ideas generated in the previous stage (or using any set of ideas, generated inside or outside this process), develop workable solutions. Key to using this competency: diverge and converge in tandem, recursively using other CPS competencies (typically, defining questions and generating ideas) within this stage to move from ideas to solutions. Includes the skills of divergence, convergence, evaluative and critical thinking, establishing criteria, user focus, and prototyping.

Chapter 13: Competency 6: Explore Acceptance

A creative solution is by definition a change, and to have it implemented requires acceptance by others. First, diverge to assess the many stakeholders and environmental considerations, and to identify assisters and resisters. Then, converge, to select those in each category that require focused attention. Working recursively with other CPS competencies, find the problems that need to be overcome in each category, then generate

ideas and craft solutions (for example, for making use of the assisters and for addressing the concerns of the resisters). Includes the skills of divergence, convergence, contextual thinking, influence and persuasion, systems thinking, process orientation, and stakeholder analysis.

Chapter 14: Competency 7: Plan for Action

Creative solutions are for naught if not implemented. The final competency is action planning, a road map for turning creative solutions into successfully-realized changes and innovations. First diverge, making a list of action steps. Converge by placing them into a project plan, using a planning tool such as RACI (Responsible, Action, Consulted, Informed). Includes the skills of divergence, convergence, tactical thinking, systems thinking, critical path analysis, troubleshooting, contingency planning, and flexibility.

PART III: Facing the Future

Chapter 15: Creating the Future: Implementing the Plan

Advice for implementation of any plan, including finding and using champions, using influence, telling your story, and not triggering the corporate immune system.

Chapter 16: Toolkit

Detailed instructions for using the divergent and convergent tools discussed throughout the book. Includes more than a dozen commonly-used divergent tools such as brainstorming, brainwriting, visual connections, what's stopping you, and excursions. Includes more than a dozen convergent tools (typically excluded from creativity books), including card sort, paired comparisons, and stakeholder analysis. Introduces several tools not typically associated with problem-solving, including reversals, freewriting, 9-box and RACI.

Chapter 17: Keeping it Going

Recommendations for what to do next. For the reader who is just now ready to begin, how to select a first project (hint: start small). For the reader who used the book while reading it, how to reflect on what was learned and move to the next project. Also: how to get others to try the process, and how to strengthen your competencies, in any of the seven areas.

End matter: Recommended resources (books, websites, and organizations).

APPENDIX C

Sample Chapters of *Creating The Future*

Sample Chapters

Creating the Future: A Hands-on Guide

by Paul Reali

1:
What are you doing here?

Stop right there.

Wherever you are: in the bookstore or library, deciding whether to carry this home with you…or in bed, trying to choose from the wobbly stack of nightstand books you ought to read, started to read, will never read…or reading this page online, your mouse hovering near the "Add to Cart" button . . . wherever you are, there is a question you should answer before you go past this page. Here it is:

Would you rather just wait and see?

Here's what that question means, in the context of this book and this conversation we're having about it: *Are you content with waiting for the future to show up and seeing what it will bring, or would you rather have control over that future?*

Even as children, we wanted to be surprised by our birthday presents, but we also wanted control of them. We made lists and we made demands. And as delighted as we might be by the occasional brilliant but unexpected gift, it was the ones we lobbied for – and then received – that made birthdays great.

And so, repetition being the stuff of learning, let's ask again:

Would you rather just wait and see?

If you would, then this book is probably not right for you. Perhaps you should put it down now.

Oh, good for you. You didn't call my bluff. You read past that sentence about putting the book down. You could easily have said, "Fine. Be that way. I'll go get a nice book about movable cheese, or melting icebergs." Still, it's possible you're still not sure about this waiting-for-the-future thing. Just for you, then, just because you asked so nicely, here is another test question:

Do you prefer to play it safe?

Most problems are solved by finding out how problems like it are solved, and then doing exactly the same thing. And for most problems, that's best. Machine squeaks? Lubricate it. But there is another class of problems, problems that beg for new thinking. Do you have some of those? Sure you do; that's not the important question. The question is: are you willing to try some new thinking, or do you prefer to play it safe. "No one ever got fired for buying IBM," the old saying went. It's probably still true. But if you're not willing to try new thinking, then you might want to put this book down now.

No? OK, here's another:

Do you see opportunities, but leave them for someone else to capitalize on?

Creative thinking is not just for problems – the word *problem* having a negative connotation – but also for identifying and capitalizing on opportunities. Are there possibilities you want to explore? If the very

thought makes you tired, then perhaps you are better off leaving the opportunities, big and small, to someone else. Put the book down. It's OK. Really, it is.

No? All right, you asked for it. Here's the final question:

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Do you ever just get in your car and drive?

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Now I've got you.

This is a trick question. No matter what you answer, I have you. If I have written this book to argue that the only way to predict the future is to create it, then it would seem that I should also argue that you should know where you are going before you leave. And, if that's how you are, then of course you want this book.

But if, on the other hand, you sometimes do like to just get in the car and drive, then you are comfortable with the unknown – which is where your journey to creating the future always begin, which also means this book is for you.

Because – and this is crucial to understand – *you will start creating the future before you know what it is*.

I have been asking these questions so that you can decide if this book is right for you. But here's why these questions are actually important:

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It's up to you.

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It is, isn't it? I'm not there beside you to hold your hand, to guide you through this learning process, to encourage you, or to convince you. I've put these words down, and now it is in your hands. (OK, truth be told, I am here to help. You can find me online at creative-problem-solving.com, and you can e-mail me directly, download forms and articles, view videos, even find places to attend my workshops and keynotes. But you get my point: I'm not

in the room with you right now, I'm not your boss, and I'm not your mother.)

So, I am available to help, through this book and other means, but I am not *there.* Also, I'm not going to try and convince you that you need to do this (not very much, anyway). There are plenty of books that want to sell you on the need for creative thinking. This is not one of them. *The very fact* that you are reading this sentence is proof that you want to apply creative thinking to your life and work. You are already convinced.

You're in. So, go ahead. Bring the book home. Promote it to the top of the wobbly stack.

Then, read the book, and – more importantly – *use* the book. It's not a dissertation on creativity. It is a how-to guide (hereinafter: "H2" for "how to"). If you are convinced of the need to create the future rather than wait for it, this book will help you do it.

What will you be able to accomplish, doing this *Creating the Future* thing? Well, that depends on you, doesn't it? Here's your last question: how far do you want to go?

10:
Competency 3:
Find the Questions

In which we clarify the problems that need to be solved and the questions to be answered in order to reach our goal.

This Competency at a Glance

Type of thinking: Strategic

When to do this: When you have a clear goal, but have not identified the questions or problems that stand in the way of the goal.

Before you do this: imagine the future; that is, identify a clear goal, wish, challenge or opportunity, one that begins with "I wish…," "I want…," "I will…," or "It would be great if…."

What happens here: identify the questions that need to be answered and the problems that need to be solved in order to achieve your goal.

How to do this: first, diverge: make lists of possible questions, each beginning with "How to…," "How might…," "In what ways might…'" or "What might be all the…." (Shorthand: H2, HM, IWWM, and WMBAT.) Then, converge: select the key question or questions to carry forward, restating as necessary.

When you are finished: you will have identified one or more problems you wish to work on, in the form of concise questions that invite answers.

What's next: If the questions require creative thinking, go to the competency *Generate Ideas*. Otherwise, solve the problem with a known solution, and implement.

Find the Questions: **Discovery**

On the "Discovery" page for the *Imagine the Future* competency, we identified a goal:

I wish to work only four days per week.

Now, we are going to list some questions we would need to answer, or problems we would need to solve, to make the goal come true. Each question, worded so as to invite answers, will begin with the statement starter H2 (How to…). We are not going to judge these; we're just going to make a list. Later, we will choose which questions are the ones we need to work on. Note: We are *not* going to try find a solution at this time; we're just exploring questions.

H2 take Fridays off	H2 convince my boss
H2 live on 80% of my salary	H2 replace 20% of my salary
H2 do all my work in 4 days	H2 find others who are doing this
H2 find a job that requires only 4 days	H2 have Monday declared national holiday
H2 get the whole company on 4-days	H2 make shorter work weeks acceptable
H2 increase my productivity	H2 earn more vacation days
H2 negotiate a new schedule	H2 prevent resentment from peers
H2 work from home	H2 work more from home
H2 have my own business	H2 need less money to live on

And we could keep going. In fact, in the real world, we would keep going, as more options are better than fewer. A good quota for an individual working on any issue is at least 30 options. With groups, at least 10x the number of participants. Can you add more possible questions to this list?

Discovery Debrief

The "Discovery" on the facing page is an introduction to the divergent part of this competency: making lists of possible questions and problems so that we will be sure we have identified the right ones.

Take a look at the list on the previous page. Granted, space limitations make this list much shorter than it could be, but let's see what we can tease out from what's there. This is the next part of this competency: to select what we need from the list, strengthening and modifying where needed.

Do you see any patterns? Recurring themes? Underlying principles? Note the different possible directions, all valid, but which cannot be addressed together. So, what appeals to you? Do you truly want to work less in your current job, or do you really want a different job, or do you want to start your own business? These are three different directions, and we could pursue them all, but not at the same time. When you converge, you decide: what are the problems I need to solve?

The "wrong" directions are fine, are good. Making wide-open lists of questions, and not judging them as we write them down, helps us find all the possible questions, and sometimes to uncover a direction we would not have thought about, or perhaps did not even know was there.

When we imagined the future, in the prior process stage, we asked the question: *why do you want this?* This allowed us to see that you are not unhappy in your current job, and that the goal was flexibility and more time for life itself. That allows us to put aside those questions that lead us to different places.

Still, the fact that "H2 have my own business" popped up here allows us to ask the question: do you want to start your own business? Because if you do, we need to return to *Imagine the Future* again. Otherwise, forward ho.

Find the Questions: Digging Deeper

Basics & Background

The Creative Problem Solving framework, in addition to helping you solve a problem with creative thinking, also helps you make sure you are solving the right problem in the first place. The place that happens is right here, when we *Find the Questions.*

A process with "problem solving" in its name would seem to have a step in which problems are identified – and, in fact, that's what happens here. And yet, I call this competency *Find the Questions* instead of *Find the Problems.* Why? I find the word "problem" too limiting. We tend to think of problems as negatives, and the CPS framework does not apply only to negative situations. Now, this might just be semantic fussiness on my part, and I am not requiring you to be similarly fussy. You can call this stage "clarify the problem," or "put the puzzle pieces right side up," or anything else that works for you.

Whatever we call it, here's what we're going to do: we are going to ask questions. Questions that need to be answered in the form of ideas. Ideas that will lead to solutions.

Each of these questions will begin with an "invitational stem," so-called because they invite ideas. The difference between a question worded this way, and one worded another way, is the difference between something that wants to be solved and a complaint. For instance, "I just lost my job" is a complaint (or, to be kind, *data*). But "How to get my job back?" and "How to find a new job?" are questions that invite answers.

Using Invitational Stems

When someone comes to you with a problem or question, much of the time it is stated as a factual assessment – which we call *data* – or as a complaint – which we call *annoying*. Imagine, instead, if questions and problems win your organization were *solution*-focused. To accomplish this, and in keeping with its affirmative nature, CPS uses *invitational stems,* a kind of statement starter that invites answers.

An example, then. As I look out my window right now, Fall is in full…fall. We have maybe a hundred trees, and they are all shedding their wares. I could state this as: "My lawn is covered in leaves." That's data. I could say, "I have no idea what to do with all these leaves." That's data leaning toward complaint. I could say, "I'll never be able to get rid of all these leaves!" Yes, you have it now: that's full-fledged bellyaching. And not helpful.

Now, imagine if instead I were to say, "How might I clear these leaves off the lawn?" Or: "What might be all the ways I could clear the leaves off my lawn?" Or: "In what ways might I use these leaves for something?"

Here are the invitational stems: H2 (How to…), HM (How might…), IWWM (In what ways might…), and WMBAT (What might be all the…).

Before I learned CPS, I had a company policy: don't bring me a problem without also proposing a solution. This had the right spirit but the wrong result: it was a rush to closure. Instead, I needed to invite *thinking* about solutions. Imagine now if everyone in your company spoke to each other like this, instead of the way they do now?

What makes a good question?

Now, that's a good question right there. Glad you asked. Here are some guidelines.

- Begin with an invitational stem (H2, HM, IWWM, WMBAT), so that the questions invite solutions rather than voice complaints.

- State the question in the affirmative.

- Be sure it is something that is worth doing.

- Save the criteria for later; those are considered to be data, or will be included during the *Craft Solutions* competency.

- Hold the limitations (e.g., budget constraints); they are considered to be data.

- Do not include dependencies or explanations ("…so that…" or "…in order to…").

- Satisfy (as did your imagined future state) the OMI test: you have ownership of the question, motivation to solve it, and doing so requires imaginative thinking. (If the question satisfies O and M but not I, then go forward and solve the problem in a known way, skipping over *Generate Ideas* and *Craft Solutions* and moving on to *Explore Acceptance* and *Plan for Action*.)

Process maps

Here are some of the ways you might use this competency, in the context of a larger process. Remember that you can also use this competency on its own, and that every situation is different, allowing you to design your own processes.

Fuzzy Situation: Using the entire CPS process sequentially

Facilitate — Imagine the Future — Find the Questions — Generate Ideas — Craft Solutions — Explore Acceptance — Plan for Action
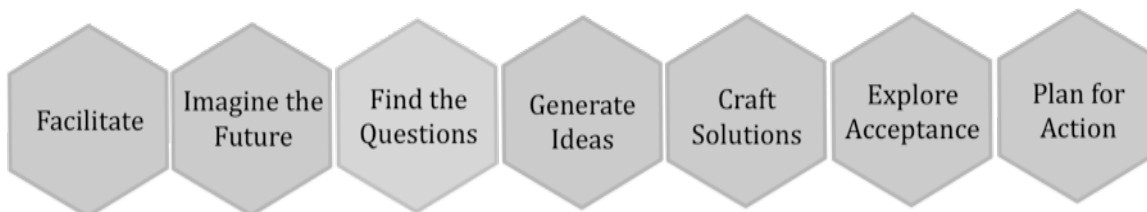
Clarification: What do we want, and what needs to happen to get there?

Imagine the Future — Find the Questions
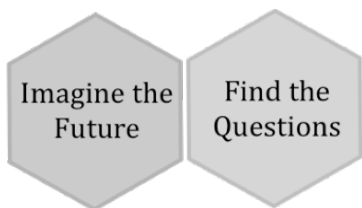
Traditional Problem-Solving: Identify the problem, implement a known solution

Find the Questions — Explore Acceptance — Plan for Action

Find the Questions: Overview

Why?	Clarification – to find the questions that need to be answered or problems that need to be solved in order to realize your imagined future (that is, to achieve your goal, fulfill your wish, meet your challenge, or take advantage of an opportunity).
When?	When you have a clear vision of what you want – an imagined future you wish to achieve. That future state – which by definition is some distance from your current state – should be defined by a statement that begins with "I wish…," "I want…," "I will…," or "It would be great if…."
When Not?	If the future state is unclear, begin with *Imagine the Future*. If you already have a clearly defined problem or question, move on to *Generate Ideas*.
How?	Use a divergent tool such as brainstorming to make lists of alternative questions, beginning each with H2 (How to…), HM (How might…), IWWM (In what ways might…), or WMBAT (What might be all the….). Use a convergent tool such as hits to select the best questions, strengthening them if necessary to make sure they capture the issues.
What's the Result?	One or more actionable questions that are worded so as to invite solutions.
What's Next?	If the question/problem should be solved with creative thinking, proceed to *Generate Ideas*. If the solution is already known to you and is satisfactory, implement it.

Find the Questions: How to do it

1. Begin with a clear goal statement

A. How did you get here?

- Continuing in a process? If you arrive at this competency having used CPS to *Imagine the Future,* you will have a goal at the ready.
- Beginning here? If you are beginning a process here or using this competency by itself, you should have a larger goal in mind – a future state envisioned in broad terms.

In either case, the goal should be broad, brief. and beneficial, and should begin with one of these stems: I wish…, I want…, I will…, It would be great if….

B. What is the setting?

- Working by yourself? Write the goal statement on the top of a sheet of paper. You will record your divergent thinking on this sheet, adding sheets as needed.
- Working in a group? Write the goal statement on a flip chart pad or whiteboard, or project it on a screen – someplace that everyone in the room can see it.

2. Diverge

A. Get ready.

Review or post the divergent thinking guidelines:
- Defer judgment (think now, judge later)
- Go for quantity (more is better)
- Seek wild and crazy (novelty comes from the unusual)
- Hitchhike (build on what you and others say)

Review or post the invitational stems (statement starters):
- H2 (How to...)
- HM (How might...)
- IWWM (In what ways might…)
- WMBAT (What might be all the...)

B. Select a divergent thinking tool

In most cases, a good first tool is brainstorming. If working alone, making lists of options on a sheet of paper may be preferable. If working in a group, brainstorming with Post-Its, one idea per sheet, collected and posted onto flip chart sheets, is a good method.

C. Go.

Generate many possible problem statements, each beginning with an invitational stem. (H2, etc.). Change to a different divergent tool if the initial results do not seem to be getting you the clarity you need. A good second tool is "reversals," in which you take each of the problem statements already generated and reverse them (if possible).

3. Converge

A. Get ready.

Review or post the convergent thinking guidelines:

- Be affirmative (instead of negative; remember H2, HM, etc.)
- Be deliberate (take your time and be thoughtful about the process)
- Check the objectives (these keep you on track)
- Improve ideas (strengthen as you go along)
- Consider novelty (be brave: don't discard everything that's different)

B. Select a convergent thinking tool.

In most cases, a good first tool is **hits**. To use hits, mark the items that jump out as being the most promising. Target: mark no more than 20 percent of the total number of items on your list.

C. First pass.

- Working by yourself? Mark items with a dot or similar method.
- Working in a group? Use sticky dots, divided up among the participants.

D. Analyze: what did you learn?

Do the questions reveal anything that was not previously known? Are there underlying principles at work that need to be considered? Does anything that happened here suggest that you are working on the wrong goal statement?

If you are satisfied that you are working in the right direction, and that you have generated a precise question, then move forward. If you have the right direction but have not gotten the question that works, you can either move forward and try to strengthen the ones you have, or take another pass at it, using a different divergent thinking tool to generate more options.

E. Synthesize and select.

Select one well-defined problem statement with which to more forward. You may need to reword, rework, or strengthen the statement before it's ready.

4. Facilitate: ready to move forward? Where?

A. Ready to go forward?

- What if you have more than one question? You can keep more than one question, but unless they are asking the same thing, you can solve them all at once. Two problems means, essentially, that the process branches off in two directions. Generate ideas against each question separately.

- What if you have too many questions? Some issues are highly complex. If you have selected many questions, and they all seem important to do, you can allow the process to branch out for each of them. First, you might wish to use a convergent tool such as 9-box or card sort to select which are the most promising questions, and work on those first.

B. Facilitate: Decide what's next.

To help determine where to go next, apply the OMI ("Oh, My") test by asking three questions:

- Ownership: do you own this situation?

- Motivation: are you motivated to do something about it?

- Imagination: is this a challenge that will benefit from imaginative thinking?

If you answer "yes" to all three, continue with the *Generate Ideas* competency.

If you answer "no" to any one of the questions, a different course of action may be appropriate. If you do not own the situation, can you enlist the help of someone who does? Otherwise, your work might be for naught. If you are not motivated, why not? Can you find motivation to pursue this? If not, your energy might be better spent on something that gives you energy back. If the problem does not require imaginative thinking, then simply solve it using a traditional method, and move on to the implementation planning competencies, *Explore Acceptance* and *Plan for Action.*

Find the Questions: Dénouement

In this chapter, we have considered the use of *Find the Questions* two ways: inside a sequential CPS process, and as a stand-alone competency. As we conclude and plan for the future, let's consider one other aspect of the competency, which is no less than changing the way you think about things. And if that is not enough, let's also change the way everyone you live with and work with thinks about things.

Are you up for it?

It's simple, really. It requires just one thing of you – or, more correctly, four things: H2, HM, IWWM, and WMBAT.

The key to this competency is how you state a problem, moving from complaint (or data) to solutions thinking. It's the difference between "I don't feel well" and "HM I feel better?" It's the difference between "No one listens to my ideas" and "HM I find acceptance for new ideas?" It's the difference between "I hate airports" and "HM I make good use of the time I have to spend in the airport?"

It's the difference between wallowing in problems – yours and others – and being forward thinking.

And so, if you are like many of the participants in my sessions, this is the time for you to say, "Well, sure, Paul, I can do this myself. But everyone else won't go along with it." To which I say: that's a complaint. Your first lesson is to restate that complaint in a way that invites a solution. Go ahead, try it. "IWWM…."

And then solve it.