

State University of New York College at Buffalo - Buffalo State University

Digital Commons at Buffalo State

Creativity and Change Leadership Graduate
Student Master's Projects

Center for Applied Imagination

5-2011

The Creative Coach: Exploring the Synergies Between Creative Problem Solving: Thinking Skills Model and Non-Directive Coaching

Trevor J. McAlpine

M.S. Candidate at Buffalo State College, trevor.mcalpine@gmail.com

First Reader

Dr. Susan Keller-Mathers

To learn more about the International Center for Studies in Creativity and its educational programs, research, and resources, go to <http://creativity.buffalostate.edu/>.

Recommended Citation

McAlpine, Trevor J., "The Creative Coach: Exploring the Synergies Between Creative Problem Solving: Thinking Skills Model and Non-Directive Coaching" (2011). *Creativity and Change Leadership Graduate Student Master's Projects*. 140.

<https://digitalcommons.buffalostate.edu/creativeprojects/140>

Follow this and additional works at: <https://digitalcommons.buffalostate.edu/creativeprojects>



Part of the [Business Administration, Management, and Operations Commons](#), [Cognitive Psychology Commons](#), [Counseling Psychology Commons](#), [Human Resources Management Commons](#), [Industrial and Organizational Psychology Commons](#), [Interpersonal and Small Group Communication Commons](#), [Organizational Behavior and Theory Commons](#), [Organizational Communication Commons](#), [Other Business Commons](#), [Other Communication Commons](#), [Other Psychology Commons](#), and the [Other Social and Behavioral Sciences Commons](#)

*The Creative Coach:
Exploring the Synergies Between Creative Problem Solving: Thinking Skills Model and Non-
Directive Coaching*

by

Trevor McAlpine

An Abstract of a Project
in
Creative Studies

Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Master of Science

May 2011

Buffalo State College
State University of New York
Department of Creative Studies

ABSTRACT OF PROJECT

The Creative Coach:

Exploring the Synergies Between Creative Problem Solving: Thinking Skills Model and Non-Directive Coaching

This project looks at the similarities and differences between the most recent version of Creative Problem Solving called *Creative Problem Solving: Thinking Skills Model* and the approach to coaching known as *Non-Directive Coaching*. Creativity practitioners are challenged to find opportunities of engaging in formal full-blown, group-based Creative Problem Solving sessions. There is a need to find other, less formal ways of helping people use their creativity. The Thinking Skills Model's design allows it to mesh with the creative process in other content areas by making the basic concepts of Creative Problem Solving transferable to those other contexts. Non-Directive Coaching is one such example. Both Creative Problem Solving and Non-Directive Coaching are reviewed for the reader. The similarities, differences, and synergies between the two are explored. These synergies are augmented by observations from the author's many years as a consultant and business coach. Ideas for further research are presented.

Trevor McAlpine

Date

Buffalo State College
State University of New York
Department of Creative Studies

*The Creative Coach:
Exploring the Synergies Between Creative Problem Solving: Thinking Skills Model and Non-
Directive Coaching*

A Project in
Creative Studies

by

Trevor McAlpine

Submitted in Partial Fulfillment
of the Requirements
for the Degree of
Master of Science

May 2011

Buffalo State College
State University of New York
Department of Creative Studies

*The Creative Coach:
Exploring the Synergies Between Creative Problem Solving: Thinking Skills Model and Non-
Directive Coaching*

A Project in
Creative Studies

by

Trevor McAlpine

Submitted in Partial Fulfillment
of the Requirements
for the Degree of
Master of Science

May 2011

Dates of Approval:

Dr. Susan Keller-Mathers
Associate Professor

Trevor McAlpine
Candidate for Master of Science

Dedication

Firstly to Prof. Fred Thompson. Sir, you bravely held your creativity lamp up high, allowing us happy few to find a whole new world in Synectics and a way forward to sharing it with others (even if mainly in guerilla ways). You were the start, but not the end, of all those vexing questions that have haunted me all these years. I hope one day to create a new and powerful lamp – combining your teachings and the many wonderful teachings I have since been privileged to receive – to help many others find their ways forward, each equipped with their own lamps ... and lamp-making kits.

Next to the faculty and staff of the ICSC at BSC. Without you, I would still be a ‘one-trick’ creativity pony, blind to the many other critical elements of creativity needed to “make it go”. Most of the world groans in ignorance of what you offer. I hope this work is but a small contribution to those who will follow in the field and, dare I say, be a small start to some wonderful future collaboration together.

To those I have coached and will yet coach. Thanks for letting me learn and perfect my craft. As with many endeavors of value, I may be getting the best of the deal even as I strive to give you the best.

Finally to my wife and family, who in reality are never last nor are they ever least:

- To my wife, Gisella: Without you and your tremendous sacrifices, this work would not exist. You are the ying to my yang; you are my perfect complement. I love how you constantly shock those in your presence with your perceptive wit and creative, pragmatic approaches to life. You are an über-stealth creative. You go girl!
- To my children – Adam, Rachel, and Andrew: You give me so much that I know I am missing most of it, but I thank you for your examples and your love anyway. There is so much I yet do not know about how we think and about how we evolve our thinking as we grow up and old. I hope to learn fast so as to share it with you before you have found your own ways in this world.

Acknowledgements

First, to my long-suffering CRS 690 Graduate Project professor, Dr. Susan (Sue) Keller-Mathers. Thanks. I appreciate your helpful comments and your optimistic disposition. It cannot have been easy working with me. I wish it were otherwise; but I hope the end-product was worth the wait and the travail.

To the Department Chair, Dr. Gerard Puccio. I have always appreciated your attentiveness to the millions of questions I ask. You treat your students as colleagues. Thanks; and for your work in developing *Creative Problem Solving: Thinking Skills Model*, and discussions on the same, I give great thanks.

To Dr. Mary Murdock. You may not be in a position to read this today, but you will someday. I can only remember you with your signature smile and that look that cannot be described, but is so you. Your razor-sharp mind was more than enough to catch us short, yet you attended to all of your students with grace. We miss you. And thank you for your work in developing *Creative Problem Solving: Thinking Skills Model*.

To Marie Mance. Thank you for your work in developing *Creative Problem Solving: Thinking Skills Model*.

To Myles Downey. Your book shows me that you truly understand coaching – more importantly, you truly trust in the human potential of those you coach. Thank you for allowing me to see how GROW and TSM are synergetic.

To Tim Gallwey. Your *Inner Game of Work* book really captures the philosophical essence and practical applications of allowing a player to find Self 2 and of reclaiming their mobility. It was a pleasure to hear you speak in the UK. I only wish I knew then what I know now.

Table of Contents

ABSTRACT OF PROJECT	ii
Dedication	v
Acknowledgements	vi
Table of Contents	vii
List of Figures	xi
List of Tables	xii
Section One: Background to the Project	1
Introduction – Two Key Questions	1
Rationale & Significance of the Project	1
Method	3
Rationale for Selected Method	3
Preliminary Definitions	4
Creativity	4
Creativity Enhancement	5
Creativity Practitioner	5
Creativity Professional	6
Rationale & Creative Contributions	6
Section Two: CPS: TSM Quick Review	9
Whither CPS	9
A Nano-History of CPS	9

CPS Research Results	10
Effect of CPS Training – Changes in Attitudes	10
Effect of CPS Training – Changes in Behaviors	11
Effect on Individuals and on Groups	12
Key Aspects of CPS Training	12
CPS: TSM	14
Origins of the TSM	14
The TSM – Main Conceptual Stages	16
The TSM – Key Steps within each Conceptual Stage	16
Diverge / Converge	18
TSM – The Detailed Graphical Model	20
The TSM’s Cognitive and Affective Skills	20
Section Three: NDC Overview & Analysis	22
Key Researchers	22
Myles Downey	22
W. Tim Gallwey	22
NDC Overview and Analysis	22
Coaching Defined	22
Origins of NDC	23
Directive vs. Non-Directive Coaching	23
Right Approach at the Right Time	24
Power of Results	26
The GROW Model – Downey’s Process Model for NDC	27
Downey’s Tactical Model for NDC	29

Key Roles	32
Potential vs. Performance	33
Interference	33
Stuck? Look for the Interference	35
Focus / Flow	35
Capacity to Learn	36
Mobility	37
Responsibility	38
Self 1 vs. Self 2	38
Awareness is Curative	40
Art vs. Technique	42
Need for Suspension of Judgment	43
Coaching Situations	44
Need for Care	46
Intent	47
Section Four: Skills of Effective Coaching	50
Generating Understanding / Raising Awareness Skills	52
Proposing Skills	53
Transparency	53
Section Five: Evoking Creativity	56
Have we Arrived yet?	56
Creating the Future from the Past	58
Being Held Accountable to the Least Demanding Goals	58
Creating the Future	59

Evoking Innovation	59
Section Six: Extending the Learning	62
My Voyage	62
Other Avenues of Potential Investigation Using the NDC	62
References	64
Appendix A - Concept Paper	68

List of Figures

<i>Figure 1 - The History of CPS.....</i>	9
<i>Figure 2 - The Basic TSM Model.....</i>	16
<i>Figure 3 - Diverge-Converge Model</i>	19
<i>Figure 4 - The Full TSM Model</i>	20
<i>Figure 5 - Coaching Spectrum from Directive to Non-Directive.....</i>	25
<i>Figure 6 - The GROW Model</i>	27
<i>Figure 7 - Mapping the TSM on to the GROW model.....</i>	29
<i>Figure 8 - Downey's Model T - a Tactical Model for NDC</i>	29
<i>Figure 9 - Mapping of Model T and CPS's Diverge-Converge Model</i>	31
<i>Figure 10 - Performance Equation showing Interference subtracts from Potential</i>	33
<i>Figure 11 - Self 1 and Self 2.....</i>	39
<i>Figure 12 – “Panacea Plaque” - Solving all of your problems via awareness alone!</i>	41
<i>Figure 13 - Consciousness - Competence Matrix tracing the evolution from non-participant towards mastery</i>	42
<i>Figure 14 - The differences in question order of the questions designed to investigate intent between Downey (2003) and McAlpine.</i>	55

List of Tables

Table 1 <i>The TSM Stages and their associated Purpose(s) and Step(s)</i>	17
Table 2 <i>Similarities between the TSM's Structure and Osborn's 1963 CPS Model Structure</i>	18
Table 3 <i>Definitions and Rules for Divergent and Convergent Thinking</i>	19
Table 4 <i>Key Cognitive and Affective Skills of the TSM</i>	21
Table 5 <i>Key Traits of Teams Suffering from Interference and Free from Interference</i>	34
Table 6 <i>Specific skills in the Coaching Skill Set that could have a bearing on CPS: TSM Skills</i>	51

Section One: Background to the Project

Introduction – Two Key Questions

Introduced in 2007, the Thinking Skills Model (TSM) of Creative Problem Solving (CPS) was more than just a new update of CPS – it was a flexible, concise, non-prescriptive roadmap to the entire problem-solving thought process (Puccio, Murdock, & Mance, 2007). The TSM had potential applications far beyond what many would label as traditional CPS applications. This was cause for celebration for both the CPS and non-CPS worlds, as the TSM could also be used to augment other processes and methodologies, enabling them to incorporate improved creativity by design. However, one significant problem remained for students of creativity: *How specifically could one use the TSM to improve the creative thinking and/or creative output of other non-CPS processes and methodologies?*

A related problem afflicts other fields whose methodologies, models, processes, approaches or paradigms claim somehow to leverage enhanced creativity: *In what ways are the creativity-enhancement elements within them clearly and formally used (if they exist), or is any creativity-enhancement sometimes present only because of happenstance or luck?*

Rationale & Significance of the Project

This project looks at one such field – coaching – to determine how to formally integrate CPS's TSM into a coaching model to actively and reliably enhance creativity. More specifically, the purpose of this project is to explore the commonalities and distinctions between Creative Problem Solving: Thinking Skills Model (CPS: TSM) and the approach to coaching commonly called Non-Directive Coaching (NDC).

There are two major reasons why this is important:

1. Proponents of NDC insist that this coaching approach helps actualize human potential by enabling the expression of our innate ability to learn and to express our creativity. If so, this means that NDC must be a context (or an environment) in which creativity is expressed by the person being coached.¹ Furthermore, this must mean that the TSM, designed as a way to promote “more efficient thinking in individuals and groups” (Puccio, Murdock, & Mance, 2008a, p.149), must somehow be able to be incorporated into NDC. If so, this would verify the hypothesis that the TSM could augment other processes or methodologies (Puccio, Murdock, & Mance, 2005);
2. Again, starting from the premise that the NDC coaching approach helps actualize human potential by enabling the expression of our innate ability to learn and to express our creativity, it stands to reason that an NDC approach, augmented by the TSM, would deliver better results faster and with less effort. Given that actual experiments proving this to be true is beyond the scope of this project, it is still worth exploring the ways in which NDC can benefit from the many academic and practical advances made within Creative Studies over the last half-century AND the ways in which NDC can contribute to the creativity field.

¹ Note that same is true from the coach’s perspective – the coach must use creativity in the complex, open-ended environment of a coaching session to enable the person being coached to express said creativity – but NDC’s promise is to enable the person being coached to effectively use their creativity.

Method

This project method will consist of the following:

1. A quick review of CPS: TSM;
2. An overview of NDC;
3. Identification of the commonalities and distinctions between CPS: TSM and NDC; and
4. The inclusion of the author's relevant observations and empirical experience as a business coach helping people and organizations make significant performance improvements.

Steps 2 through 4 will be done simultaneously as opposed to sequentially.

Rationale for Selected Method

This project pre-supposes the reader understands nothing substantive about NDC. It further pre-supposes that the reader is aware of CPS: TSM, so the supplied review is cursory at best. The simultaneous description of NDC and a possible mapping of the TSM (and CPS) on to NDC aims to avoid having to explain NDC in detail only to tediously repeat this same information when the TSM mapping brought into the picture. Were this project destined to be a hardcover book for the general marketplace, this methodology would not be optimal; however, this project is meant for a CPS-aware audience.

Upon further reflection, this is somewhat how the information presented itself the author's mind while learning NDC as part of a continuing education process in change management and performance improvement. At first, the most obvious synergies between NPC and the TSM were an interesting surprise. Further study led to the realization that

these synergies were inevitable if the claims by NDC proponents that “creativity is a vital part of coaching” are true. (Downey, 2003, p.89)

The inclusion of the author’s relevant observations and empirical experience as a business coach will be done both in the text as well as via special text boxes (as shown below). The decision depends on the ease of which the relevant text can be pulled out of the main text flow without disrupting it. The text boxes help draw attention to some learning extensions or disagreements with the facts as being presented.

Practitioner’s Corner:

My relevant field experience or real-life observations will be here.

Preliminary Definitions

In order to start presenting the concepts and ideas in this project without inviting errors caused by differing definitions, some definitions must be presented up front. The goal is not to trap anyone into a right vs. wrong argument, but to ensure clear communications throughout the project. To avoid making this section excessively heavy at this early stage, only the most essential concepts will be defined here. Further definitions will be presented as needed.

Creativity

Creativity is a novel, useful change (Puccio, Murdock, & Mance, 2007).

This CPS-inspired definition of creativity combines the thinking and doing expressions of creativity. This definition of creativity has thus absorbed the “doing” component of innovation. This simple definition is versatile yet clear and avoids entanglements in philosophical subtleties or procedural approaches.

Creativity Enhancement

Creativity Enhancement is defined as using any procedure, methodology, technique, approach, or any other ways or means to increase the level, expression or use of creativity by a person or a group of people. Since this project is TSM-focused, creativity enhancement generally means an ability to:

1. clarify a problem, challenge or opportunity to ensure the most useful questions guide the quest for “a novel, useful change”;
2. generate a greater quantity and quality of ideas to answer the clarified question(s) – this contributes much of the *novel* component of creativity;
3. develop these richer ideas into fully-fledged winning solutions – this contributes much of the *useful* component of creativity; and
4. implement these winning solutions more effectively in order to get more of a desired result or to get a higher probability of getting the desired result – this contributes much of the observable *change* in “a novel, useful change.”

Similar to the performance improvement mantra of “faster, better, cheaper,” a creativity enhancement mantra could be: “better implementations of enhanced solutions derived from richer ideas to clearer questions.”²

Creativity Practitioner

A Creativity Practitioner is anyone using creativity tools, techniques, methodologies, and approaches to actively enhance their own creativity or the creativity of others³.

² Admittedly, this is not the most catchy of mantras.

³ This need not be the practitioner’s primary role; in fact, it need not even be an *explicit* role. Yet it is a

Creativity Professional

A Creativity Professional is someone whose *primary* role is to be a creativity practitioner.

Rationale & Creative Contributions

CPS is ideal in helping people solve problems that have a heuristic (open-ended) vs. algorithmic (closed-ended) nature (Puccio, Murdock, & Mance, 2008b). These are often identified as the kinds of questions leaders usually face. Mumford, Zaccaro, Harding, Jacobs, & Fleishman (2000) described a subset⁴ of such heuristic problems (and by extension, many heuristic problems) as being: novel, complex, dynamic, ill-defined, and suffering from information ambiguity. While Mumford et al. did not mention coaching⁵ as being of benefit to leaders who must solve such heuristic problems, mentoring was identified as being of particular benefit. Mentoring shares many non-directive characteristics with NDC. Yet NDC is more results-focused than mentoring. NDC, like CPS, is designed to help people clarify issues and challenges, solve identified problems, and implement workable solutions yielding beneficial results.

For a variety of historical and cultural reasons, a big challenge facing creativity practitioners who have been professionally or academically trained in creativity

common role, as literally anyone who has ever consciously attempted to solve a problem in new and useful ways (or help others do the same) would qualify.

⁴ Mumford et al. specifically analyzed leadership skills needed to solve *complex social problems*.

⁵ This may be due to a natural tendency to equate coaching with directing and motivating (i.e. Directive Coaching) and not to the characteristics of NDC. This distinction will be explored further on.

enhancement is to find a formal opportunity in which to apply such training. An example of a formal opportunity would be a CPS session where everyone – facilitator, problem owner, and resource team members – knows they are engaging in CPS. Often, this requires training in CPS for maximum benefit as even a little bit of training in the basics can yield benefits (Puccio, Firestien, Coyle, & Masucci, 2006).

Sadly, such formal opportunities are even less likely to be available in the future. The sheer press of daily demands is intensifying and the availability of resources is shrinking. Attempts to find opportunities for formal, well-defined creativity-enhancing efforts are likely to be increasingly rebuffed in all but a handful of cases, especially since a preferred way of engaging in CPS is by using CPS resource teams to help solve problems (Puccio et al., 2006). A full CPS resource team includes up to eight people, making such teams resource-heavy, a luxury in today's economic climate.

Yet the need for creativity and creativity-enhancement is increasing, judging by the rising number of complex, heuristic problems all around us (Homer-Dixon, 2000).

Worse, the popular image of a leader is at odds with the idea of a leader who inspires creativity. As Hirshberg (1999) states so well:

To most, a leader is someone who goes out front, charts the course, and induces others to follow. It's the "charting the course" part that breaks down when leading for the creative priority. Original ideas establish their own directions, and realizing their potential means following their lead – not something traditional leaders do easily. (pp.95-96)

How to reconcile these facts?

First of all, perhaps not every such heuristic problem should be solved using a

potential resource-heavy approach such as formal CPS with a resource team. In many cases, heuristic problems may best be solved using an approach designed to use the least number of resources: the practitioner and the problem-owner. An example would be when the problem-owner must make a personal change in behavior or action; in such a case, a creativity-enhanced NDC approach would be ideal. Yes, CPS can be adapted for use when resources are limited to only facilitator and problem-owner (even if these are one and the same person!) (Haggerty, 2004) – so can other group-based approaches such as Syntectics (Thompson, 1989) – but can more be done? Since it is proposed that the TSM can be mapped on to other processes or methodologies, why not see if these latter are more suitable to solving certain problems without sacrificing any of the creative output promised by CPS?

This last point is of critical importance to creativity practitioners. NDC represents an excellent opportunity to use elements of CPS: TSM informally, i.e. where creativity per se appears not to be the main focus (and the formal use of full-blown CPS unthinkable). Therefore, understanding how CPS: TSM can amplify the results of NDC will be of tremendous value for future creativity practitioners and professionals who wish to enhance the use of creativity by augmenting other processes and methodologies via the TSM. Note that at least one researcher has already mapped CPS elements on to mediation, observing how a better use of CPS's evocative questions and of diverge/converge would lead to improved facilitation (Neilson, 2008).

How creative is NDC, or how creative can it be? How can NDC help others to be more creative? And in what ways are NDC and CPS: TSM related?

Section Two: CPS: TSM Quick Review

Whither CPS

A Nano-History of CPS

For almost 60 years, CPS has grown and evolved and has been the beneficiary of an impressive history of academic work and operational results proving its utility and efficacy. While an exhaustive review of its past is beyond the scope of this work, the following salient points in CPS's evolution have been excerpted from Puccio, Murdock, and Mance (2005).



Figure 1 - The History of CPS

CPS Research Results

While CPS: TSM is the latest revision or “version” of CPS, CPS has a long history of research results showing its effectiveness. It is worth recapping some of the results of the decades-worth of research into CPS, examining aspects such as: Why it succeeded more than many other approaches, The short-term and long-term benefits of CPS training, and Best ways to train people in CPS. Exploring the details of CPS: TSM and why it is such a uniquely powerful update to CPS follows.

Effect of CPS Training – Changes in Attitudes

CPS training has been shown to change two key attitudes (Puccio, Murdock, & Mance, 2005; Puccio et al., 2006). The first is that CPS training helps improve a person’s attitude towards using divergent thinking when solving complex problems, and divergent thinking is directly related to creative output. By improving an employee’s attitude towards an active engagement in divergent thinking, and by ingraining an acceptance of divergent thinking into corporate culture, creativity is enabled (Basadur & Hausdorf, 1996; Puccio et al. 2006).

The second major change in attitude was in avoiding premature convergence (Puccio et al., 2006). This attitude permits the development of creative ideas. Avoiding premature convergence is critical, as a positive attitude towards divergent thinking can always be undone by any sense that such divergent thinking should “time-limited” for efficiency’s sake.

Practitioner's Corner:

I have seen managers express this attitude of limiting the time allocated by attempting to “balance” openness towards “creativity” (i.e. divergent thinking) with being responsible managers (limiting it before it “gets out-of-hand”). The most common expression of this is the rapid closing off of a brainstorming session once one or two interesting (or subversive) ideas have surfaced.

Note that these two attitudes are closely related to three highly necessary affective skills / attitudes in CPS:

1. Openness to novelty
(the ability to entertain ideas that at first may seem outlandish or risky)
2. Tolerance for ambiguity
(the ability to deal with uncertainty and to avoid leaping to conclusions)
3. Tolerance for complexity
(the ability to stay open and persevere without being overwhelmed by large amounts of information, inter-related and complex issues, and competing perspectives) (Puccio, Murdock, & Mance, 2007, pp.51-53).

Effect of CPS Training – Changes in Behaviors

CPS changes problem-solving behaviors (Puccio, Murdock, & Mance, 2005; Puccio et al., 2006). These changes are described as “enhancing creative-related abilities, such as those skills associated with divergent thinking (i.e., fluency, originality, and flexibility in thought) or with the creative process (i.e. problem finding, evaluating ideas, etc.)” (Puccio et al., 2006, p.26)). Puccio, Murdock, and Mance (2005) lists research that describe the following improvements to individuals’ abilities as the results of CPS training:

- Ability to generate many original solutions to problems
- Accuracy in evaluating original ideas
- Fluency in generating solutions to problems
- Enhanced ideation in problem finding
- Improved problem-finding performance (p.52)

These improvements also appear to last for several months after the training is complete (Puccio, Murdock, & Mance, 2005).

Effect on Individuals and on Groups

If individuals can change their attitudes and behaviors positively by undergoing creativity training, it stands to reason that when such “enhanced individuals” get together in teams or groups, they perform better than if they would have otherwise done. Research such as that summarized by Puccio et al. (2006) bears this out. The positive changes identified above were also noted with regards to improvements in group-based problem solving (Puccio, Murdock, & Mance, 2005; Puccio et al., 2006).

Key Aspects of CPS Training

Scott, Leritz, and Mumford (2004) note that CPS and CPS-type training owed part of its success to “developing and providing guidance concerning the application of requisite cognitive capacities.” (p.382). Furthermore, since CPS training is too short to provide anyone to develop real expertise, it appears that what is happening is that “training provides a set of heuristics, or strategies, for working with already available knowledge.” (ibid, p.382).

The above point out one of the ironies of CPS and CPS-type creativity training: We already “get it.” It is not so much the case that people must learn and master entirely new

cognitive or affective skills, as it is that people must be shown how to re-organize, structure, and use their mostly pre-existing knowledge. The fact that some individuals may need specific training in the use of any one specific tool or technique does not invalidate this discovery.

Even though Scott, Leritz, and Mumford (2004) focused mainly on the cognitive approaches to creativity, and CPS: TSM seeks to expand beyond these into openly acknowledging and using affective thinking, they went on to describe key elements of successful creativity training. These include:

1. Basing the training on a sound, valid, conception of the cognitive activities underlying creative efforts;
2. Making the training lengthy and relatively challenging with various discrete cognitive skills, and associated heuristics, being described, in turn, with respect to their effects on creative efforts;
3. Following up the articulation of these principles with illustrations of their “real-world” applications (or other contextual approaches such as cooperative learning, etc.); and
4. Following up with a series of exercises, appropriate to the domain at hand, that provides people practice in applying these strategies and heuristics in a more complex and realistic environment. (p.383)

Scott, Leritz, and Mumford (2004) also remind us that creativity is not the result of a program or the application of some techniques, but as a vehicle to enable people to better express and enhance their innate creative thought.

CPS: TSM

So the above brings us specifically to the CPS: TSM. What exactly does the TSM bring to CPS, and how does it do it?

Origins of the TSM

Puccio, Murdock, & Mance (2005) note that CPS: TSM was “developed primarily to facilitate more explicit teaching and learning of the CPS process, and to make these teaching and learning processes more generally accessible to different audiences” (p.58). It originates “not only from CPS literature..., but from the thinking skills literature as well” (ibid., p.58). It is a theoretical model supplemented with its authors’ years of practical experience teaching CPS in academic and non-academic environments. In short, it works, and works very well.

But how and why does CPS: TSM work so well? What does CPS: TSM bring to the table that previous versions did not? Again, Puccio, Murdock, and Mance (2005) note that their deliberate linking of CPS with cognitive and affective skills was effective for a number of reasons:

1. Using thinking skills provides an additional way to differentiate one CPS step from another;
2. As fundamental building block of teaching and learning, thinking skills can link the teaching and learning of CPS to thinking in concrete ways;
3. CPS process provides teachers, trainers, and learners with a cognitive “mind map” of how the creative process works. It is a mental “Rosetta Stone” that translates basic tacit learning processes inherent in creativity and *for identifying the creative process in other content areas* (emphasis mine);

4. *A connection to thinking skills helps the basic concepts of CPS to be more transferable in other contexts* (emphasis mine);
5. The thinking skills framework renders the theoretical TSM model's steps into more actionable ones than were possible using the older CPS models. It also opens up potentially overlapping theoretical and practical information areas for articulating what CPS does and how it functions; and
6. The introduction of thinking skills allows the introduction of many more critically-needed problem-solving tools, including those in new contexts and content areas. (pp.59-60)

Practitioner's Corner:

While CPS: TSM's creators declare that it was designed to help in the teaching and learning of the CPS process, I think this understates its power. Perhaps it is because I am a coach, consultant, and creativity practitioner that I find that anything that makes CPS easier to remember and use is of great utility in the field.

Even TSM's creators seem agree with this conclusion. Their 2007 book *Creative leadership: Skills that drive change* focuses on the synergy between leadership and creative thinking (and not on just teaching or expounding upon CPS per se). (Puccio, Murdock, & Mance, 2007) In 2008, they declared that "CPS: TSM promotes more efficient thinking in individual users and groups." (Puccio, Murdock, & Mance, 2008a, p.149)

The TSM – Main Conceptual Stages

The TSM consists of three main conceptual stages or phases. The TSM's three main stages are designed to match the beginning, middle, and end of one's natural creative thinking processes, and are called: *Clarification*, *Transformation*, and *Implementation* (Puccio, Murdock, & Mance, 2005, 2007).



Figure 2 - The Basic TSM Model

SOURCE: © 2007 Puccio, Murdock, & Mance. Reprinted with permission.

The TSM – Key Steps within each Conceptual Stage

Each TSM stage is divided into two steps – one divergent, the other convergent – with a seventh⁶ step performing the executive function of directing or controlling the entire process. (Puccio, Murdock, & Mance, 2005, 2007). Each of these steps is

⁶ For the mathematically-inclined, this is more appropriately called the “zeroth” (0th) step, as it precedes all others. It is listed first in tables outlining the steps. However, for the lay public, this number could cause major confusion.

responsible for key thinking results that move the problem-solver through to the final end-result.

Table 1

The TSM Stages and their associated Purpose(s) and Step(s)

Stage / Phase	Purpose	Associated Step
Clarification	<i>What needs to be resolved (generally as well as specifically)</i>	Exploring the Vision
		Formulating Challenges
Transformation	<i>Identify potential ideas and turn them into workable solutions</i>	Exploring Ideas
		Formulating Solutions
Implementation	<i>Refine solutions and put together a plan for taking effective action</i>	Exploring Acceptance
		Formulating a Plan
(Executive)	<i>Find, gather, or select the information, hunches, and facts needed</i> OR <i>Evaluate the situation's current evolution in the TSM and determine how to best carry out a process step or choose the next best process step(s)</i>	Assessing the Situation

Based on Puccio, Murdock, & Mance (2005) p.65; (2007) pp.35, 89

Note how the TSM's stages listed above align with the three revised steps of Osborn's 1963 CPS model (Puccio, Murdock, & Mance, 2005).

Table 2

Similarities between the TSM's Structure and Osborn's 1963 CPS Model Structure

TSM		Osborn's 1963 CPS model	
Exploring the Vision	Clarification	Fact-Finding	Problem definition
Formulating Challenges			Data gathering
			Analyzing
Exploring Ideas	Transformation	Idea-Finding	Idea production
Formulating Solutions			Idea development
Exploring Acceptance	Implementation	Solution-Finding	Evaluation
Formulating a Plan			Adoption

This alignment is to be fully expected, as the two models share the same history. However, Puccio, Murdock, and Mance (2007) note that other researchers have noted that three-phase processes for problem-solving or decision-making were the norm in the literature.

Diverge / Converge

Is the success of CPS uniquely due to its structure? No. For CPS to yield results, there has to be some source of dynamic energy: This is found in the contrast between divergent and convergent thinking.

Table 3

Definitions and Rules for Divergent and Convergent Thinking

Divergent Thinking	Convergent Thinking
<i>A broad search for many diverse and novel alternatives</i>	<i>A focused and affirmative evaluation of the alternatives</i>
<u>Rules:</u> <ul style="list-style-type: none"> • Defer judgment • Strive for quantity • Seek wild and unusual ideas • Build on other ideas 	<u>Rules:</u> <ul style="list-style-type: none"> • Be affirmative • Be deliberate • Check your objectives • Improve ideas • Consider novelty

Definitions – Puccio, Murdock, & Mance (2007), p.39

Rules – Miller, Vehar, Firestien, (2001a), pp.22-23

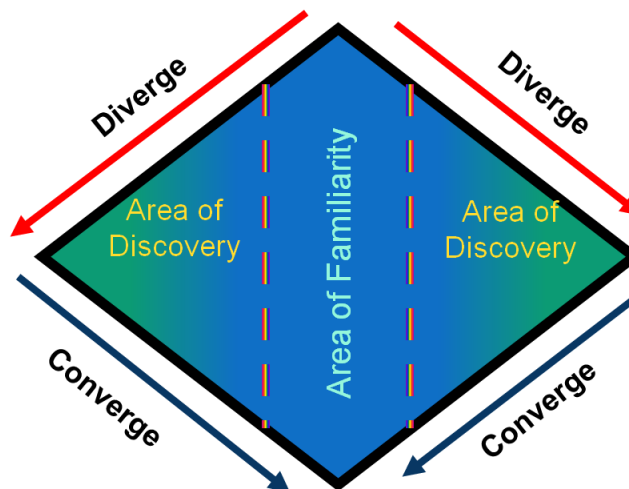


Figure 3 - Diverge-Converge Model

SOURCE: © 2007 Puccio, Murdock, & Mance. Reprinted with permission.

A careful review of the names for each of the TSM's steps will show a strict adherence to the duality of divergent and convergent thinking. Divergent steps are labeled *Exploring*: The deliberate moving away from areas of familiarity into unknown areas (of discovery) – new visions of the future, new ideas on how to realize these visions, new understanding of the implementation environment, etc. Convergent steps are

labeled *Formulating*: The deliberate return to (new) areas of utility – newly discovered gaps blocking the way to the vision, new solutions from the new ideas, and new implementation plans to better address the implementation environment, etc. In each case, the effort is to move from more abstract towards more concrete thinking as one travels through each stage (Puccio, Murdock, & Mance, 2005).

TSM – The Detailed Graphical Model

The net result of incorporating all of the above into their respective TSM stages and adding in the seventh *Assessing the Situation* data-gathering and meta-cognition step is shown below.

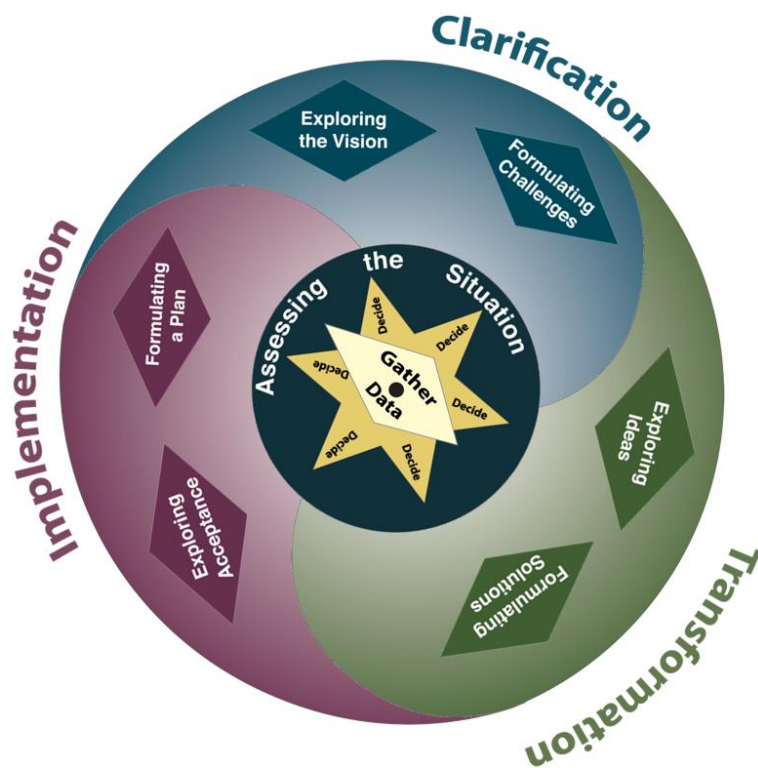


Figure 4 - The Full TSM Model

SOURCE: © 2007 Puccio, Murdock, & Mance. Reprinted with permission.

The TSM's Cognitive and Affective Skills

As expected, there are specific cognitive and affective thinking skills associated with

each of the steps in the TSM. A full analysis of these would be getting into too much detail for a simple review. Readers are invited to consult Puccio, Murdock, and Mance (2005, 2007, 2008a, 2008b) for more information. The skills are named in Table 4 below.

Table 4

Key Cognitive and Affective Skills of the TSM

TSM Step	Thinking Skills	Affective Skills
Assessing the Situation	Diagnostic	Mindful Curiosity
Exploring the Vision	Visionary	Dreaming
Formulating Challenges	Strategic	Sensing Gaps
Exploring Ideas	Ideational	Playfulness
Formulating Solutions	Evaluative	Avoiding Pre-mature Closure
Exploring Acceptance	Contextual	Sensitivity to Environment
Formulating a Plan	Tactical	Tolerance for Risk Taking

Practitioner's Corner:

In my experience, the **Formulating Solutions** Affective Skill *Avoiding Pre-mature Closure* is better understood by using the label *Keeping Options Open*. People generally find it easier to focus on what they must do vs. on what they must avoid doing.

Section Three: NDC Overview & Analysis

This Overview & Analysis section will explain key aspects of NDC as explained in two germinal books that have helped define NDC (Downey, 2003; Gallwey, 2000). At the same time, the commonalities and distinctions between NDC and CPS: TSM will be presented.

Key Researchers

Myles Downey

Myles Downey is one of the founders of the London School of Coaching, a school that specializes in teaching NDC. Thus, Downey's 2003 book *Effective Coaching: Lesson's From the Coach's Coach* can be appropriately seen as being an early, comprehensive, authoritative work in NDC.

W. Tim Gallwey

The author of 1974's hugely influential *The Inner Game of Tennis*, Tim Gallwey's philosophy has led directly to the development of NDC. Gallwey has written a number of *Inner Game* follow-on books – of interest to us here is *The Inner Game of Work: Focus, Learning, Pleasure, and Mobility in the Workplace*, published in 2000.

NDC Overview and Analysis

Coaching Defined

Downey's definition of NDC used at the London School of Coaching was: "Coaching is the art of facilitating the performance, learning, and development of another." (p. 21). Note that only one of these three elements relates to the end goal of results, with the other two relating more to individual and personal growth, i.e., key components of result sustainability and future result-generating capacity, but not easily-measurable results in

and of themselves.

Origins of NDC

Downey stated that the seminal work by Tim Gallwey called *The Inner Game of Tennis* (1974)⁷ revealed an approach to learning and performance that eventually became the philosophical basis for NDC.

Directive vs. Non-Directive Coaching

The first distinction Downey made in his book is between sports coaching and business coaching⁸. Understandable, given that most people's initial experience with coaching is through sports coaching. Sports coaching is the epitome of the coach-as-expert, the one who transfers knowledge, who corrects and teaches proper technique, and who sanctions when necessary⁹. Downey also noted that this knowledge/expert model is also used almost exclusively in the educational system¹⁰.

The above approach is called directive coaching. Its pervasiveness in our early years is why most of us apply a directive-coaching bias to the idea of "coaching."

⁷ Gallwey wrote the foreword to Downey's book, highlighting their strong philosophical affinity.

⁸ The author has noticed how the expression "business coaching" has only recently gained traction with listeners. Downey's experiences of almost a decade ago would have been even more stark.

⁹ In one large organization where I consulted, to "coach someone" was an organizational euphemism for a direct, managerial lecture designed to immediately change a subordinate's behavior or performance.

¹⁰ Even the classic movie *Dead Poets Society* unwittingly reinforced this model, with Robin Williams's teacher character, John Keating, challenging the students' pat answers all while projecting *his* views of poetry (and living) on to the students. However, Keating did allow for greater freedom in his student's thinking than traditional teachers did.

This active-coaching model is so powerful and so pervasive that Downey's NDC students tried to tell tennis players how to play tennis even though a) the whole purpose of the exercise was to be *non*-directive and b) the students themselves had *never, ever* played tennis! (Downey, 2003).

Practitioner's Corner:

Sadly, as crazy as Downey's example appears to be, I have seen managers try to tell subordinates how to do a job they had never done. Everyone was frustrated, yet this cultural mono-focus on active coaching being the exclusive coaching model meant that no one understood *why* they were frustrated!

Downey advocates using the opposite approach, a non-directive approach that actively avoids having the coach as expert giving advice or even suggestions. As stated in the origins of NDC section, this NDC approach is based on supporting the student's innate capacity to learn what is needed when it is needed. As Downey (2003) notes:

One thing that makes this approach different is that it does not rely on the knowledge, experience, wisdom or insight of the coach but rather on the capacity of the individuals to learn for themselves, to think for themselves and to be creative. (pp.9-10)

The reference to creativity is not accidental. Downey fully believed that learning and innovation were lost to those work organizations whose managers imposed solutions (i.e. were being directive) vs. allowing their workers to come up with their own solutions.

Right Approach at the Right Time

Before we become overly focused on NDC as the primary coaching model, consider this: Downey's focus on the absolute need to achieve results (see *Power of Results*

section) allows for the use of directive coaching where necessary. The trade-off for gaining the immediate results of directive coaching is the loss of learning and development that could have been fostered by NDC.

This is just like CPS – CPS is not prescriptive on the exact method to achieve the next step. However, it is focused on getting past the next step with good material for the one following. Downey illustrated this in the following coaching spectrum (Figure 1).

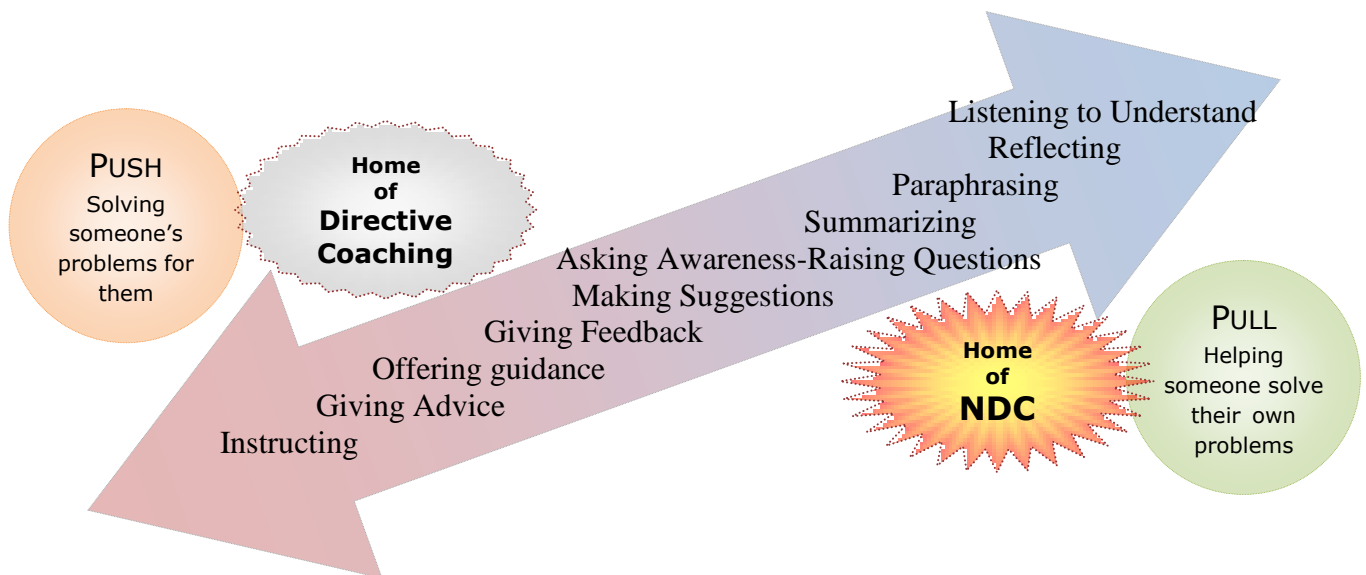


Figure 5 - Coaching Spectrum from Directive to Non-Directive

Adapted from Downey, Diagram 1 (Downey, 2003, p.23)

Downey recommended the use of directive coaching when a player is stuck and the coach knows what the player should do, as well as when the player actively solicits feedback or advice. The caveat is that a coach must ensure that these temporary moments of directive coaching do not become crutches used by the player to abdicate responsibility to the coach, as this would defeat the whole purpose of effective coaching.

Similarly, creativity practitioners are likely to be above average at each of the TSM

steps. So, does this mean the practitioner should ideate for the problem owner? No, not unless it was done just once to showcase a divergent skill that the problem owner or resource group must exhibit assuming they are stuck at that point.

Power of Results

Downey (2003) stated that effective coaching is to be defined by its outputs – “the results that we need in our places of work.” (p.10) – and not by the more common temptation of using the inputs – “the philosophies, models, and approaches” (p.10) – brought by the coaches who champion them)¹¹. Downey clearly believed that the appropriate coaching approach to be used was the one that provided the desired results (see *Right Approach at the Right Time* section).

This parallels CPS: TSM, which declares that for creativity to exist, it must be yield something novel and useful (Puccio, Murdock, & Mance, 2007). There is really no other useful way to evaluate either NDC or TSM.

So how effective is NDC in generating desired results? Downey noted his never-ending amazement at his students’ results using the non-directive approach. Using measurable results as the best barometer of success, his students achieved much more than order-of-magnitude improvements when compared to results from the more common directive (sports) coaching techniques. Unsurprisingly, looking at the list of breakthroughs brought about by CPS and other creativity-enhancement approaches, creativity practitioners often experience a similar amazement. On a more personal scale, I

¹¹ Strangely enough, Downey definition of coaching contains but one results-focused element, with the other two being more about capacity for future results (see Coaching Defined section).

have witnessed student creativity practitioners describing stunning breakthroughs when they reported back on individual and group problem solving exercises.

The GROW Model – Downey’s Process Model for NDC

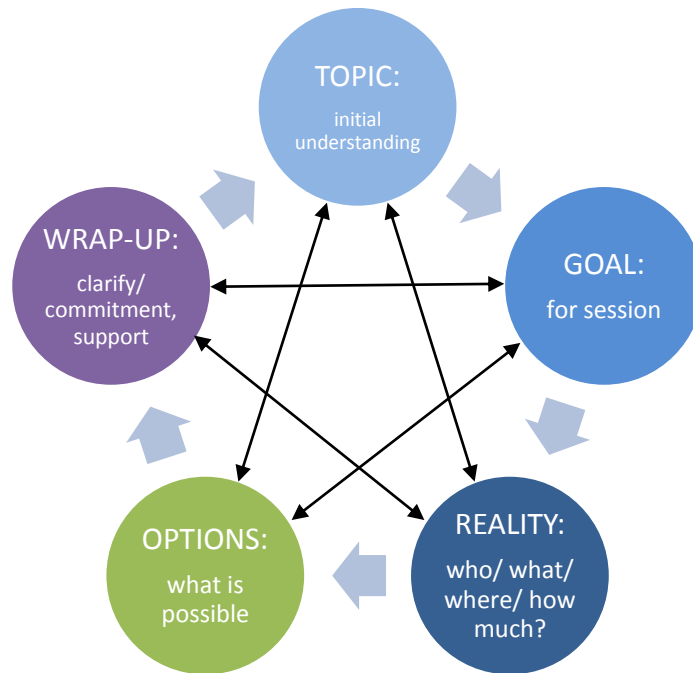


Figure 6 - The GROW Model

Adapted from Downey, Diagram 2 (Downey, 2003, p.25)

- **Topic:** Clarification as to the scope of the NDC interaction with the player.
Focus is not on detail but on sense of long-term vision of goal.
- **Goal:** The desired outcome. This is to be achieved within the confines of the conversation.
- **Reality:** The achievement of the most accurate picture of the situation possible. The goal of the coach is to understand, not to analyze or fix. As the coach develops understanding, the coach’s goal is to help the player get the “clearest possible understanding of the topic” (p.29). This is essential.
- **Options:** The goal is to draw out a list of all that is possible for the player to

do, and to do this “without judgment or evaluation.” (p.31).

- **Wrap-up:** Get the player to select the most appropriate option and agree on the ‘next steps’. Here, both the player’s commitment to the chosen option(s) as well as any support needs must be firmly evaluated.

Note that the GROW model is not a linear model – moving between phases was encouraged if it was needed. Similarly, the CPS: TSM authors have incorporated an explicit step to encourage creativity practitioners to adopt this same approach by incorporating an explicit decision step to determine what should be the next step in the process (Puccio, Murdock, & Mance, 2007).

Practitioner’s Corner:

Experienced practitioners know that there is always a gap between saying one can effortlessly move between stages and actually moving effectively – this is where the real art comes in.

Exploring the synergies between the TSM and the GROW model shows that Clarification corresponds well with the first three GROW steps (Topic, Goal, Reality), while Transformation corresponds well with the Option step and Implementation with the Wrap-up step. This is shown in Figure 7 on the next page.

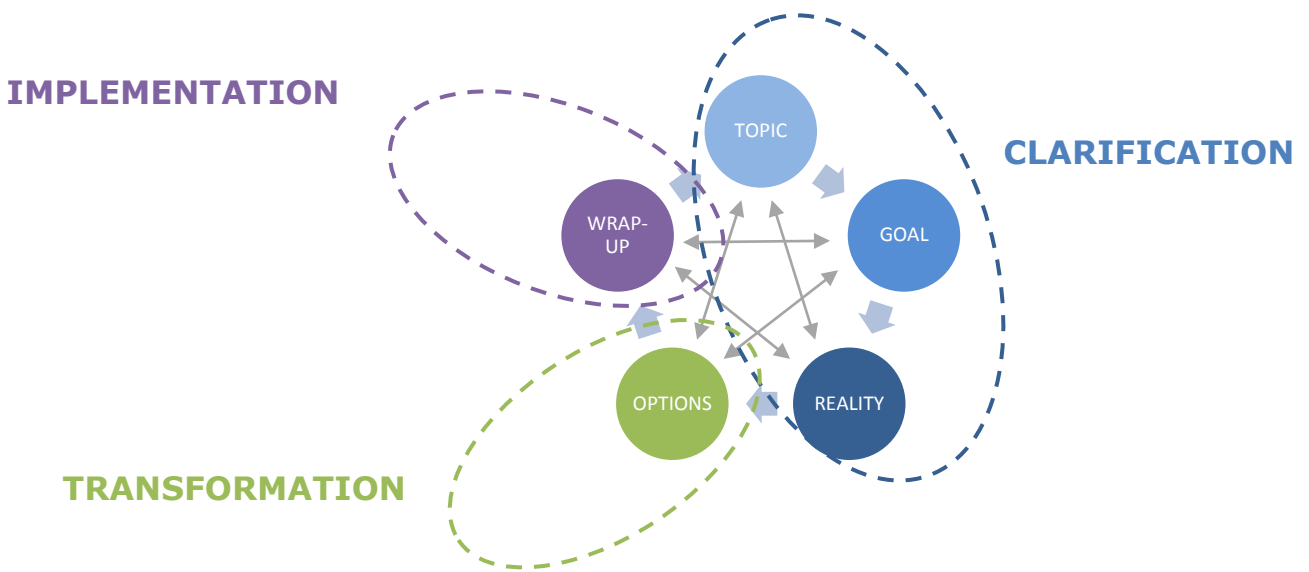


Figure 7 - Mapping the TSM on to the GROW model

Downey's Tactical Model for NDC

Remarkably, Downey's second model shares an even greater affinity with a key CPS model. Downey calls the following model in Figure 8 the Model T because the shape of the graphic used to illustrate it resembles the letter T.

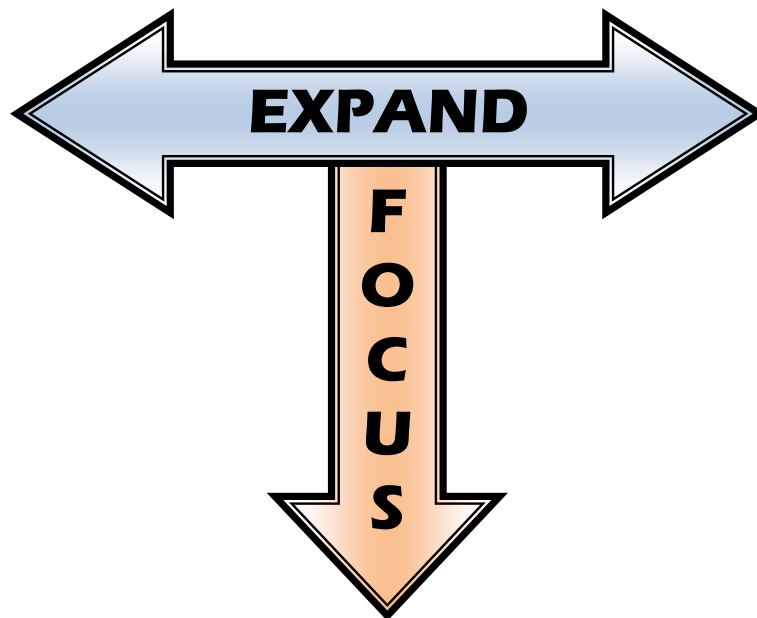


Figure 8 - Downey's Model T - a Tactical Model for NDC

Adapted from Downey, Diagram 3 (Downey, 2003, p.35)

Downey identified the Model T as “a remarkably powerful technique for making progress in the GROW model” (p.34). Coaches follow their players’ interest, as this keeps players focused on what they need to learn and keeps them resourceful (it is always preferable to focus on what one has or can do vs. what one does not have or cannot do). Expansion allows for explorations that eventually lead to the discovery of areas of interest. Focusing is used then to explore these interests in depth to determine their relative importance to the player. This investigation enables the player to learn from what they know and do not know. This strengthens mobility (see section on *Mobility*).

The key to expansion is the “noticing” type of question, and the key to focusing is the “interest” type of question, i.e. refining what it is exactly what is of interest to the player and following that which is the most interesting. This can be difficult, as most people are not used to identifying different levels of interest in surrounding elements. To solve this, both Downey and Gallwey frequently had players rate their observations on a 1-to-10 scale.¹² This simple focus technique kept players focused on a specific area of interest, allowing them to stay resourceful and bypass internal interference (see *Self 1 vs. Self 2* section).

If the Model T is the GROW model engine, then how does it compare with anything in CPS? Very well, if one defines CPS’s engine as the Divergent / Convergent Thinking engine. The Model T process for exploring interest is instantly familiar to those who use CPS’s Divergent and Convergent Thinking to explore new ideas, create new links

¹² This simple technique is not really explicitly mentioned, but occurs often in their illustrative examples.

between ideas, or to drive towards selecting the most promising ideas. Even though the applications of the Model T and the Divergent / Convergent Thinking are not exactly identical, they perform such similar functions as to warrant a serious look at how they both drive their respective approaches.

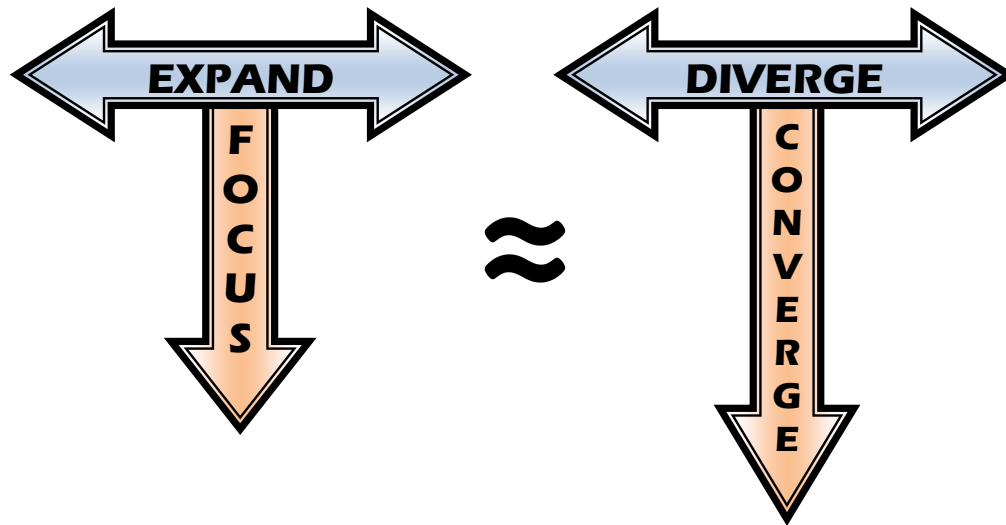


Figure 9 - Mapping of Model T and CPS's Diverge-Converge Model

Focus and Converge are both activated by interest questions. In NDC, it is the player's choice to move the discussion towards an area of interest, i.e. a topic that is important as a part of the solution or as a potential obstacle. This is an exploratory step. In CPS, the interest is found as the problem owner groups idea stems together in order to move to the next CPS step - an evaluatory step – or chooses a promising idea for further exploration in the current step (exploratory).

Expand and Diverge are noticing-type questions. Expand is an obviously divergent step, as the player continues to notice more as areas of interest are revealed. The goal is to eliminate blind spots that would affect success and player mobility. In CPS, diverging

increases the fluency, flexibility, elaboration, and originality of ideas. (Guilford, 1977, as cited in Puccio, Murdock, & Mance, 2008b).

Key Roles

In a nod to *The Inner Game of Tennis*, Downey defined the following roles:

- *Player*: the person being coached;
- *Client*: the (usually different) person paying the coach's bill;
- *Coach*: the person engaging the player in the act of coaching.

Based on the author's experience, these are useful distinctions.

For CPS, the similar roles can be labeled:

- *Problem-owner*: the person with the problem who can implement the creative solution;
- *Client*: the (usually different) person paying the practitioner's bill;
- *Practitioner*: the person facilitating the CPS session.

Practitioner's Corner:

The practical distinction between the client and the player / problem-owner should *never* be lost on the NDC coach or CPS practitioner. In my opinion, more consulting engagements have been lost to this one avoidable error than any other. However, awareness of this distinction should never be allowed to cause any conflicts for the coach. (See *Transparency* section in Section Three for more details.)

Potential vs. Performance

Gallwey's formula for understanding the effect of the inner game on performance is simple as it is elegant:

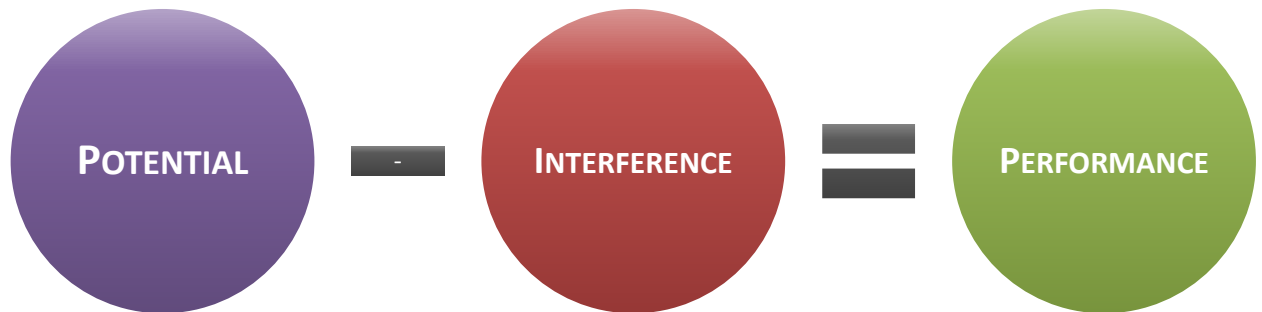


Figure 10 - Performance Equation showing Interference subtracts from Potential

The two core concepts were *Potential* and *Performance*. As Gallwey said: “Performance rarely equals potential.” (Gallwey, 2000, p.17) Gallwey called the source of this difference: *Interference*.

Interference

Interference could be some expression of the negative thoughts (such as fear or doubt) that are often experienced as a negative little voice in one's head. Interference could also come from incorrect assumptions, misunderstood process, or any similar source.

Many of the same interference forms affecting NDC can also inhibit CPS. While a complete list of interference sources could never be compiled, more common ones such as fear, doubt, holding back, undue pressure, trying for perfection, unhelpful distraction, negative expectations, past negative experiences, limiting beliefs, lack of self-confidence etc. are all creativity attenuators.

Downey referenced Gallwey's formula unchanged in his book (Downey, 2003, p.11).

The strength in this simple formula is that for NDC, as with CPS, it is not so much what must be done to succeed, as what must be avoided. For NDC, anything affecting the level of trust between player and coach will immediately introduce massive interference. In CPS, anything bringing the facilitator directly into content risks stopping a CPS session in its tracks.

Conversely, if interference is minimized, then a coach or creativity practitioner seems to generate results almost effortlessly.

Downey also recognizes that coaches occasionally coach teams (he devotes an entire chapter to the subject). He uses the same tools with teams as he does with individuals, namely the GROW Model and the Model T. However, Downey does identify that interference affects teams, and they will exhibit different characteristics than individuals.

Table 5 below details relevant team characteristics.

Table 5

Key Traits of Teams Suffering from Interference and Free from Interference

Teams Suffering Interference	Teams Without Interference
Lack of trust in other team members	An apparent absence of hierarchy
Fear of ridicule	Listening to each other
Fear of being dominated	A desire to understand each other
Pursuit of personal agendas	Clear feedback sought and given
Need to lead	The pursuit of “impossible” goals
Lack of clarity about the task and goals	Focused activity
Pursuit of incongruent goals	An intuitive sense of each member
Hidden agendas	Request and offers of help and support
Not understanding each other’s intentions	Flexibility in roles
Distrusting each other’s intentions	Willingness to cover each other’s roles
No agreed process for working together	Creativity as part of the toolkit
An absence of ground rules	Imagination as part of the toolkit
Rivalries	Intuition as part of the toolkit
No listening	Team members caring for each other
No meaningful collective work	Fun, joy, and pleasure of being together
Rigid beliefs and positions (how things are or should be)	Silent thoughtfulness before decision & action
	Mutual accountability for goal achievement

Based on Downey(2003), pp.152-153

Fortunately, effective CPS training helps practitioners recognize and avoid some of the team interference issues while at the same time promoting those aspects that reduce team interference.

Stuck? Look for the Interference

Always look for the interference if the player or the coaching conversation becomes stuck. This is critical, as it is the coach's role to spot this, as the players are likely to be oblivious to the moment they have crossed over into an automatic pattern or become frozen in their thinking. Again, a coach promotes awareness and enables the players to start the process of moving on towards finding their solutions.

Creativity facilitators perform similar roles when they identify where groups have become stuck. It may be in the application of a relevant TSM thinking skill, by not engaging in divergent or convergent activities, or by breaking the rules for diverging or converging thinking.

Practitioner's Corner:

The meta-cognition skill demanded of CPS: TSM is the best way to evaluate the operational mechanisms of those non-CPS processes and methodologies that are candidates to be augmented by the TSM. Of course, a decade's worth of field experience as a business coach involved in change management helps!

Focus / Flow

For both Downey and Gallwey, a key way to reduce interference was to focus the player's attention away from judging performance (from the perspective of a control-obsessed external observer) and towards observing aspects of the activity that are of interest to the player.

Focus is not driven by force of will. As Gallwey said: “Focus follows interest, and interest does not need coercion.” (Gallwey, 2000, p.57). Focus is also nonjudgmental.

Focus helps the player enter a mental state called “flow” (Csikszentmihalyi, 1990, 2003).

Similarly, practitioners seek to keep those in a CPS session in a state of flow by facilitation skills and by effectively using the CPS process and focusing everyone’s attention on the process step at hand.

Capacity to Learn

Another key distinction for Downey was that “the coach is working with the individual’s capacity to learn” (Downey, 2003, p.13). This is analogous to the creativity practitioner’s working with an individual’s capacity to create. Downey stated that “learning is hard-wired (into our brains)” (p.13); similarly, because creativity is innate, many creativity professionals believe the same about creativity.

It is intriguing to note that making creative connections is a key component of learning (Murdock & Keller-Mathers, 2008). Perhaps it could be argued that creativity may be another form of learning, or more appropriately, the application and extension of learning. Or is learning merely a form of creativity? Sadly, this cannot be explored further here, but it opens an intriguing possibility of creating yet another philosophical link between NDC and CPS: TSM.

This is why Downey felt that “the coach’s primary responsibility is not to teach but to facilitate learning” (p.17). Similar thoughts could be used to frame the work of a creativity practitioner when they do not contribute ideas themselves, but facilitate the creative discovery and development of ideas from others.

Mobility

Among the other concepts Downey pulled from Gallwey's *The Inner Game of Work* is the concept of mobility: the capacity to move (The choice to move always rests with the player, but there must be a capacity to move for this choice to have any meaning.).

Gallwey considered this to be one of his most contributions. It elevated Self 2 beyond being in the flow to having “conscious wisdom” (Gallwey, 2000, p.138). From a CPS: TSM standpoint, this is analogous to maintaining excellent meta-cognition.

This is personally fascinating to me, because freedom is a key part of my definition of creativity, with freedom having been defined as: being able to choose from an expanded set of possibilities (McAlpine, 2004). Expanding on this, McAlpine (2007) wrote:

Creativity helps make people and civilizations free of their own paradigms, mental blocks, and personal constraints. It is change ... from past limits and problems towards a future of potential and possibilities....

Does creativity enable freedom or does freedom enable creativity? Both.

Creativity is synergistic with freedom. Prisoners and slaves can be creative.

(Viktor) Frankl noted how he became free while in the concentration camps. He retained the ultimate freedom of choice as to how to react to what was happening to him - this led him to develop an entire new branch of psychotherapy. I believe it was his innate creativity that enabled him to reframe his experience (and) see a “way out”, a way to not only cope but transcend. It was a key step to his discovering the big “why” that permitted him to overcome the difficult circumstances, the “how” of the concentration camps. This is an example of how creativity brings forth *internal freedom*. (pp.9-10)

Note that in Frankl's case, it was his internal freedom that was important, not his external freedom. Others who had their external freedom did not invent logotherapy, regardless of their freedom to consult other psychotherapists or visit research libraries. Just as the coach attempts to increase the mobility of a player, the internal freedom, so does the creativity professional seek to increase internal freedom to think about new ideas, to express them and to act to bring them to pass.

Responsibility

Responsibility means a sense of ownership. By definition, a manager or coach solving a problem for a player makes it highly likely that the player will continuously return for more guidance whenever obstacles are encountered – after all, it was that other person's solution! Downey claimed that the key to retained responsibility for players to set their own goals, solve problems themselves, or develop their own plans. This parallels one of the key requirements of CPS: the need for those seeking creative solutions to own the problem. No one can effectively seek for a creative solution to a problem they do not own, because either they cannot guide the CPS engagement effectively or they cannot use / implement the solution provided, making a mock of the second criteria of creative output: new and useful.

Self 1 vs. Self 2

Does a player's performance differ when following interest, and if so, why? Downey's reference to Gallwey's work on tennis players identified two critical things about players who seem to have internal discussions with themselves:

1. These conversations are almost always very negative, harsh, judgmental, and commanding; and

2. If someone is talking to themselves, there must be
 - a. a talker who gives instructions, and
 - b. a listener, who acts on these instructions. (Gallwey, 2000, pp.6-7)

If so, who are these two?

Gallwey called the talker/teller “Self 1” and the listener/doer “Self 2”. Downey (2003) used the following definitions at the London School of Coaching:

- **Self 1:** internalized voice of our parents, teachers, and those in authority. Self 1 seeks to control Self 2 and does not trust it. Self 1 is characterized by tension, fear, doubt, and trying too hard.
- **Self 2:** the whole human being with all its the potential, including the ‘hard-wired’ capacity to learn. It is characterized by relaxed concentration, enjoyment, and trust. (p.45)

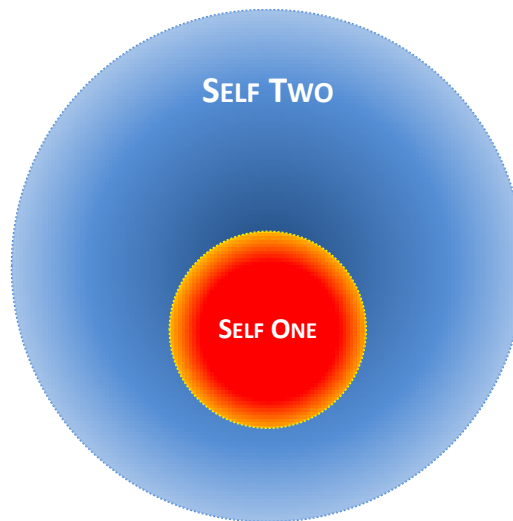


Figure 11 - Self 1 and Self 2

“As a coach the aim is to operate from Self 2. ...When you coach another the aim is to help the player get into and stay in Self 2” (p.45). Downey argued that this applied not only to the coaching moments, but also when the player was actively engaged in mission-

critical tasks (e.g. key meetings, presentations, negotiations, etc.) (see *Coaching Situations* section). This is especially important for coaches who are the player's manager or boss. Thus an effective coach helps a player move beyond the coaching moment by influencing how that player interacts with "everyday life" (and by not increasing interference enough to drive them back into Self 1).

How does one help a player get into Self 2? Downey stated that one way to enter Self 2 is via Gallwey's "relaxed concentration," a state that is "focused, relaxed, and trusting" (p.46) (see the *Focus / Flow* section). This is a benefit of following what the player notices (interest), and refining it by following and exploring what is most interesting to the player. This takes the player's focus away from performing and prevents the player from slipping back into Self 1.

Awareness is Curative

Downey agrees with Gallwey when he says that awareness is curative, that the very act of noticing one's performance puts one into Self 2, able to positively affect performance (Downey, 2003; Gallwey, 2000).

While awareness is very powerful, especially when behavior arises from a lack of awareness – when people get stuck into unconscious, automatic patterns of which they are rarely aware – it seems hard to believe that awareness is by and of itself all that is necessary to move players from Self 1 to 2 long enough to enable meaningful performance improvements. If that were true, no one would ever need a coach or even self-help book, only a plaque that said:

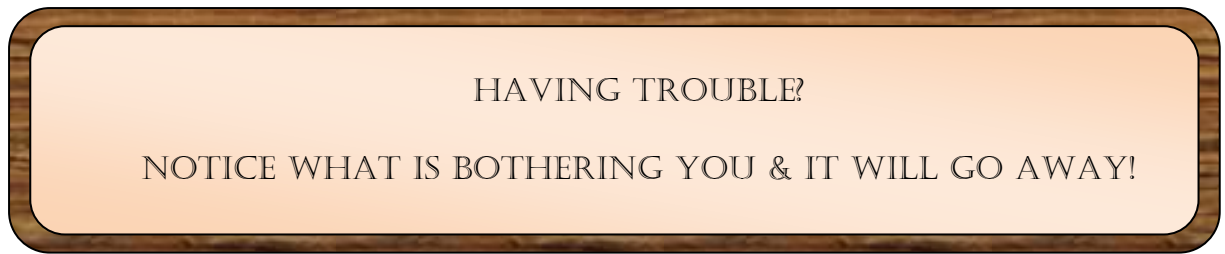


Figure 12 – “Panacea Plaque” - Solving all of your problems via awareness alone!

Admittedly, it is wrong to say the above is an accurate portrayal of the “awareness is curative” statements made by Gallwey and Downey. Awareness by itself may help set the stage but cannot by itself be curative, i.e. it may be a necessary to resolution, but not sufficient for resolution.

Downey himself gave a clue as to a possible operational mechanism behind the curative power of awareness. After returning to tennis following reparative surgery, he was surprised at how bad his tennis playing had become. To resolve this, Downey tried a technique to get himself into Self 2, but despite trying very hard, the effort was fruitless. He then noticed that he was really not *enjoying* himself, and noting to himself that he *should* be enjoying both the game he loved and the success of the surgical intervention. Downey began to rate¹³ his enjoyment level, i.e. he began to pay attention to it. Once he paid attention to his level of *enjoyment* of tennis, he began to raise it, and by-and-by placed himself more and more into a Self 2 state. (Downey, 2003, p.51)

So there is the rub: awareness of difficulty and even techniques designed to focus attention in order to enable one to get to Self 2 are not sufficient and may even be counterproductive (Downey got ever more frustrated by his inability to “technique”

¹³ On a scale from 1 to 10.

himself into Self 2, and so continued to suffer his ineffectiveness, thereby guaranteeing his mental state at that moment would prohibit his ever getting into Self 2). So there has to be one or more essential differences between what Downey first noticed and paid attention to that failed to help him get into Self 2 – remember, the approach he used was *designed* to get him into Self 2 – and what he eventually ended up paying attention to in order to get to Self 2.

So, to modify Downey (and Gallwey): It is not attention *per se* that is curative, but the right kind of attention, or attention on the right things that is curative. And this moves us away from simplistic bromides back to the art of coaching.

Art vs. Technique

Downey also stated that if coaching is done with excellence, it becomes an art that needs no attention to technique (Downey, 2003, pp.21-22). While this may be true for those who have mastered coaching, care must be taken less anyone feel tempted to excuse poor technique with claims that since “coaching” is an art, there is no need to focus on discipline and mastery. As with CPS, NDC requires time and effort to master.

Underlying all great art is excellence in technique. The mastery spectrum is:

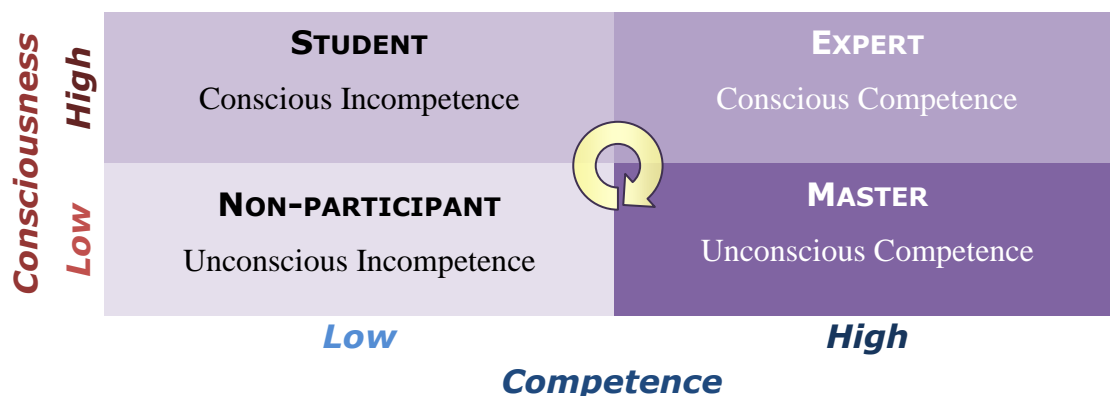


Figure 13 - Consciousness - Competence Matrix tracing the evolution from non-participant towards mastery

Based on "Four Stages of Learning" – attributed to Abraham Maslow

Unless one continues towards the Master stage, there is no real excellence, no way for art to emerge, no way to reap the benefits of NDC. The same is true for CPS: TSM. Even worse, there are few “safe” practice places – moving to mastery either in NDC or CPS requires “live” experience.

However, in Downey’s defense, he quoted on page 22 an old acting maxim to highlight a key point (“there are no rules but you’ve got to know them”). When coaching is done with excellence, with unconscious competence, then the coach ceases to be a source of interference and becomes a valuable contributor. Thus, NDC coaches must tread a similar path to CPS facilitators, in that anything less than fluid unconscious incompetence can easily lead to poor, sub-optimal results.

Practitioner’s Corner:

In my opinion, this need for mastery is one of the biggest unacknowledged hurdles facing both domains, and it is one reason for the slower-than-desired uptake by coaches of NDC and CPS creativity practitioners.

Need for Suspension of Judgment

Downey identified another similarity between NPC and CPS – the absolute need for the suspension of critical judgment. Both NDC and CPS encourage experimentation and playfulness. For NDC, these are pre-requisites for players to be able to learn from their own experiences, and good coaches seek to tap into that instinct, by providing a safe, judgment-free environment. Similarly, for CPS, these encourage the kind of wildly divergent thinking that uses the skills of fluency, flexibility, elaboration, and originality to produce the richest set of useful ideas (Guilford, 1977, as cited in Puccio, Murdock, &

Mance, 2008b).

Coaching Situations

Downey (2003) also identified two very different situations in which coaching conversations can occur:

- **On-line situations:** This is when a player is actively considering how they will perform in a specific activity. The focus is on the actual performance. The Inner Game approach is most useful here.
- **Off-line situations:** This is when a player is planning for a task or an on-line moment, such as planning for a future event, reviewing a past event or problem solving. The GROW model is most useful here. (p.50)

This is a useful distinction to keep coaches flexible as to their approaches, adapting the coaching style to the need of the moment (see *Right Approach at the Right Time* section). As with CPS, there is no one-size-fits-all path to achieve results.

It is perhaps not surprising that off-line situations, the ones most associated with exploratory problem solving are best suited to the GROW model. These situations are also suited to CPS.

But on-line situations are also related to creativity – after all, it almost certainly involves thinking, saying or doing something new and useful. It seems impossible to imagine, with all of the measurable improvements to thinking skill brought about by CPS training (Puccio et al., 2006; Scott, Leritz, & Mumford, 2004), that none of these improvements would be available to the player in a moment of on-line stress. Indeed, Torrance's longitudinal study on the value of divergent thinking skills showed that divergent thinking skills were correlated positively with creative achievement levels

makes such a conclusion obvious (Torrance, 2004, as cited in Puccio, Murdock, & Mance, 2008b).

Can basic divergent or convergent thinking skills or TSM-related affective or thinking skills to promote a Self 2 state? This is beyond the scope of this project to answer. Yet, to improve on-line performance, one need not be in an extended Self 2 state during the entire situation – even being in Self 2 at the critical moments in an on-line situation can make all the difference in the end results (e.g. the flash of inspiration that rescues a difficult presentation).

Practitioner's Corner:

This has definitely been the case in my experience. Divergent thinking has permitted me to regain mobility, which has helped in many an on-line situation.

Downey noted that Self 2 is comparable to Csikszentmihalyi's concept of Flow (Csikszentmihalyi, 1990, 2003). Many of the conditions for producing a flow state or experience are similar to those described for producing a Self 2 state, including the need for clear goals, instantaneous feedback, reduced / excluded distractions, no worry for failure, and a disappearance of self-consciousness. Absence of one or more of these produces (potentially serious) interference (Downey, 2003, p.52).

But how to maintain Self 2 in everyday situations? The challenge for most players is that, unlike performance in a physical sport where feedback is instantaneous, most performance moments feature delayed, ambiguous, missing, or even erroneous feedback. In fact, in certain cases (e.g. negotiations), false feedback may be given purposefully. Feedback time lag accounts for many of the problems in managing systems – Peter Senge

created his Beer Game¹⁴ to illustrate how large a problem time lags in feedback loops can be (Senge, 1990). In control systems engineering, for every system, this time lag is described by the system's time constant, and if the system response is slower than the control signal input, the response can be erratic at best and run-away at worse.¹⁵ This means that players may actually completely *misinterpret* the signals they receive. All of this would induce serious interference to being in Self 2.

Need for Care

Downey (2003) and Gallwey (2000) agree on the principle of caring: caring for the external result and for the person being coached. One critical key reminder from Downey is that a good coaching is founded upon care only. A coach may not like a player, but must care for the player. "I can care for someone I do not like" (Downey, 2003, p.137).

Practitioner's Corner:

From my experience as a business coach, the need for care is *critical*. Coaches cannot be effective unless they care deeply about those they coach, even if they do not like them (believe me, I have experienced this). Coaches must also simultaneously care deeply about achieving the targeted result(s). The art lies in achieving a dynamic balance between the two, where *both* are achieved.

¹⁴ The beer game is a simulation where players assume different roles in a supply chain trying to deal with a sudden surge in beer sales for a minor beer brand. Most players do not take systemic production and delivery delays into account, and this causes surges and gluts in the supply chain.

¹⁵ An example of this is an old computer taking too long to respond to keystrokes.

Intent

For Downey (2003), the notion of intent was also critical. He took to task those who look upon competencies, behaviors, and skills as being sufficient to create a coach, because these are devoid of any guidance as to when they should be deployed.

Poor or inexperienced coaches often use the wrong competencies, behaviors, or skills, or use them at the wrong times, usually to move the player in a direction the coach wants or to protect the coach (from being wrong or losing control, etc.). Obviously, the coach's intent in such cases is to serve the coach's needs first – hopefully the player's needs can also get served (or at least not be damaged too seriously).

For Downey, the only valid intent behind a coach's actions was to: “help the player become more aware or to retain responsibility” (p.57). His most important goal was to help each player gain an increased understanding of self or of their situation. Therefore, coaches must always apply skills, behaviors, and competencies with the intent of generating understanding and raising awareness. Downey also said that such a clear, honorable intent allows for the coach to remain in Self 2, hence ask better questions of the player.

It takes awareness of both the inner and outer game – from both the coach's and the player's angle – to know best how and when to act. “The primary function for the coach is to understand” (p.59) as this guides the coach to help that player become aware and understand. For Downey, this was the core of effective coaching. Yet, he claimed that most people struggle to overcome their own agendas, often because they want to be *seen* to be making a difference, to be making a contribution that can be clearly traced back to

the *coach's* input. As Downey said:

The magic is that it is in that moment of understanding that the player understands for himself (sic), becomes more aware and is then in a position to make better decisions and choices than he (sic) would have done anyway. This is how coaching is profoundly simple and simply profound. (p.59)

This is where I have been the most psychically rewarded personally as a coach, but paradoxically, it rarely has been the source of any financial rewards for results attainment. And this has been true even when employed by a professional coaching organization that *extolled* the power of non-directive coaching and *taught* it as a major component in their gold standard of coaching excellence. Financially-speaking, NDC was seen as enabling long-term paying relationships to be formed, but the gap between the many players and the lone senior management check-signer is usually so huge as to blur, hide, or even completely reverse any causal link between NDC-wrought changes and end-result improvements. Ultimately, it is the improvements in the end results (almost regardless of means used to achieve them) that generate the financial payouts for the coaches. In Downey's defense, he was writing about effective coaching, not effective consulting, but as this trap is the reason behind why so many companies struggle between quick fix but unsustainable vs. fundamental change (and coaching) approaches, it must at least be identified if practitioners are ever to deal with it effectively.

Returning back to the dilemma of contributing vs. being seen contributing: the same dilemma haunts the creativity world: The need to be seen as the *source* of a winning idea or as a key contributor to a winning idea. This is one of the biggest hurdles for creativity practitioners and professionals. This is especially true for those weaned on the ideator-

heavy approaches of creativity popularizers such as de Bono, von Oech, or Van Gundy.

To let others take the limelight for a winning idea is quite foreign to most people's models of how we are *supposed* to do things in Western cultures. And the issues identified earlier affecting paid consulting relationships are also at play here.

Section Four: Skills of Effective Coaching

Downey (2003) identified skill sets related to effective coaching, a number of which could be related to creativity enhancement. This is of course of interest given the TSM is all about thinking skills. However, Downey did not organize his skills in ways that would permit a direct head-to-head comparison to TSM skills.¹⁶

Downey's identified skill sets are:

- Generating awareness / raising understanding – helping the player make better decisions
- Proposing – directive coaching skill set useful at times in helping a stuck player
- Managing self – reducing interference
- Structuring – getting the player to achieve meaningful results
- Building relationships – creating a safe, nonjudgmental environment
- Understanding organizational context – meeting the client's needs (p. 55)

Interestingly, Downey put “evoking creativity and innovation” as a skill in the *Proposing* skill set, the most directive of all skill sets! Yet it is precisely the affinity between creative facilitation and the *non*-directive spectrum of coaching that should be the strongest, not the links between creative facilitation and directive or “tell” coaching. Furthermore, the strongest links to creativity appear to be to *Structuring* and to *Generating awareness / raising understanding*. Assuming no misunderstanding in definitions, could it be that Downey is making a simple mistake about the nature of

¹⁶ It is possible that an in-depth review of thinking skills literature may provide material or the ability to make such comparisons with more certainty. Sadly, such an effort is beyond the scope of this project.

creativity by linking it in with concepts such as Challenging?

The relationship of the coaching skill set to the creativity skill sets is listed in Table 1 below.

Table 6

Specific skills in the Coaching Skill Set that could have a bearing on CPS: TSM Skills

Skill Set	Specific Skills also related to CPS	Comments
Generating Awareness / Raising Understanding	Listening in order to understand Repetition, paraphrasing, summarizing Asking questions to follow interest Asking questions to clarify Grouping	<i>All the skills associated with communication – dialogue and group facilitation – are included here Model T work done here – linked to diverging/converging thinking</i>
Proposing	“Evoking creativity and innovation”	<i>Implies that Downey feels that directive coaching approaches are best for creativity enhancement</i>
Managing Self	Clarifying intent Entering ‘flow’ / Self 2	<i>Creativity facilitators need clear and honorable intent to stay in ‘flow’</i>
Structuring	Following interest Using the GROW model and Model T	<i>Creativity facilitators must use a structured approach to avoid chaos</i>
Building Relationship	Withholding judgment Creating a trusting environment	<i>Creativity facilitators must create a “suspension of judgment” environment</i>
Understanding Organizational Context	Ensure the coaching engagement meets the client’s end result needs	<i>Creativity facilitators must ensure work meets client’s “new and useful” needs</i>

Based on Downey (2003) p.55

In his 2003 book, Downey explored the first two skill sets (Generating Awareness / raising understanding & Proposing). These skill sets will be explored in detail below.

Generating Understanding / Raising Awareness Skills

Downey's key skills in the *Generating Understanding / Raising Awareness* skill set included:

- Listening to understand
- Repetition, paraphrasing, summarizing
- Grouping
- Silence
- Asking questions that follow interest
- Asking questions to clarify (p.60)

This is the richest of skill sets in terms of its links to CPS: TSM, but by no means is it the only skill set with links. Clarifying questions obviously fit the Clarification Phase; asking questions that follow interest and grouping fit any of the three converging steps. Note that Downey states that questions can start with who, what, where, when, how, but advises avoiding the use of why as it “does not create distance” (p.72). Also, the why question starter is so often used when accusing or blaming that it is very risky to use for all but the most experienced of coaches.

It would be interesting to see how much use the CPS evocative questions / statement starters would be a to the NDC's repertoire. For example, if a player expressed interest, instead of asking “could you tell me more?” the coach could prompt the player to dig deeper (i.e. divergently) by asking “In what ways could you...?”; “How might you ...?”; “What might you ...?”; or “How could you ...?” (Miller, Vehar, & Firestien, 2001b; Puccio, Murdock, & Mance, 2007). Note that the references generally list such CPS statement starters as “I questions” (e.g., “How might I ...?”). For NDC, coaches must ask

the player the questions, hence the “you” in the questions form. Naturally, some non-directive coaches may be using such questions already, but the idea of formally suggesting CPS statement starters would be to help NDC make it purposeful vs. happenstance.

Proposing Skills

Downey’s (2003) list of key skills under the *Proposing* group skill set:

- Giving feedback
- Making suggestions
- Giving advice
- Instructing
- Challenging
- Evoking creativity
- Transparency (p.78)

All the above Proposing skill set skills exist to help “make available the coach’s observations, knowledge, experience, intelligence, insight, intuition, and wisdom” (p.92). Given the overall focus on NDC, using these mostly directive skills effectively requires executing them in ways that are different from what many readers may find familiar. A full investigation here would take us outside of our scope – investigating CSP: TSM and NDC synergies. However, readers are cautioned against falling into the trap of saying too quickly “I know how to do that!” As with actual coaching work, it is the subtleties that make all the difference in the world.

Transparency

Given that all the above skills in the Proposing skill set only exist to help “make

available the coach's observations, knowledge, experience, intelligence, insight, intuition, and wisdom" (p.92), Downey's four tests of transparency exist to ensure the coach has removed neither choice nor responsibility from the player.

Practitioner's Corner:

In my experience as a business coach, the question of transparency is essential to establishing and maintaining trust with the player. Any hint of duplicity or "hidden agenda" on the part of the coach will immediately and irreparably damage the coaching relationship – the coach will then be seen as a "tool" driving said hidden agenda. This is so important that coaches must avoid even the *appearance* of any lack of transparency.

The best way to avoid any such appearance is to pro-actively disclose *all* expectancies others have placed on the relationship or expected results (e.g. from the client (i.e., the bill payer), the player's boss, etc.).

Downey's four tests ensure that the coach's decision to switch from NDC to directive coaching is the right thing to do from the player's perspective. Downey's four tests are:

1. Will it raise awareness?
2. Will it leave responsibility and choice with the player?
3. Is the relationship strong enough to withstand the intervention
(i.e., is there sufficient trust in the coach's intention?)
4. What is my intent? (p. 93)

The four test questions could theoretically be asked in any order. Downey states that he asks himself the first three questions before moving on to the fourth – I have assumed from his words that he can ask himself the first three questions in any order before moving on to the fourth. However, when looking back on my past interventions, I have found it more effective to ask the questions in a different order with different ‘hurdles’ or check-gates (see arrows) before progressing. The graphic below highlights the changed question order between Downey and McAlpine:

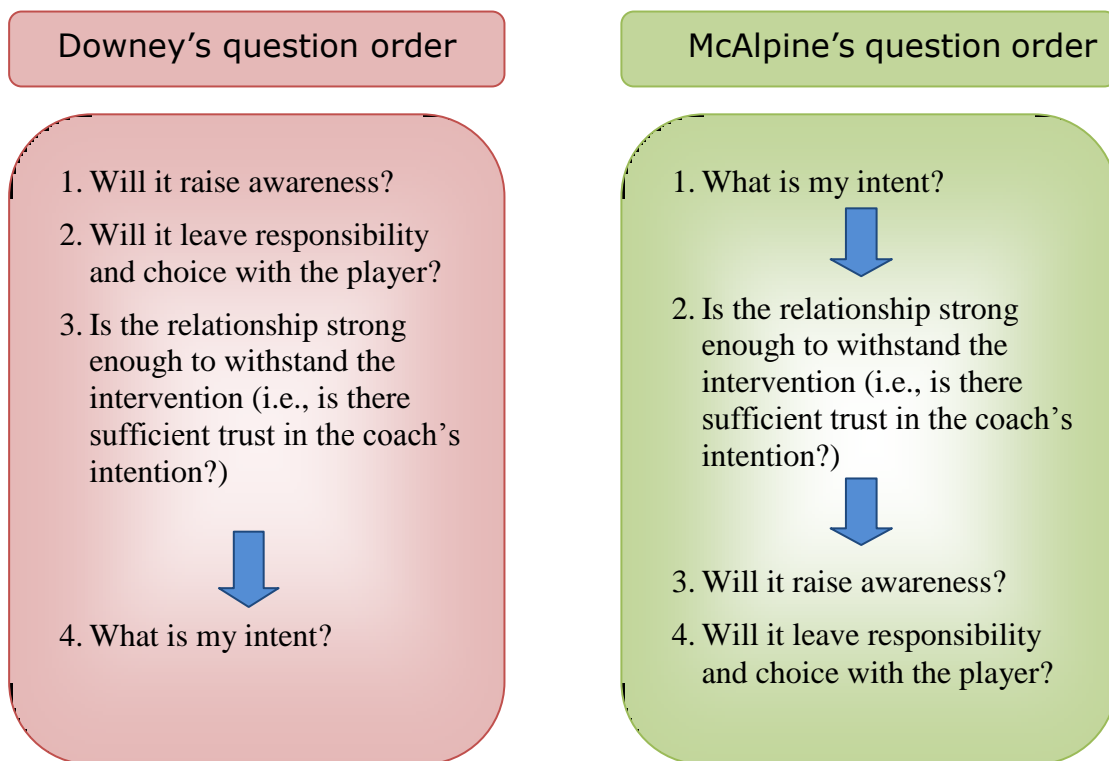


Figure 14 - The differences in question order of the questions designed to investigate intent between Downey (2003) and McAlpine.

The reason for changing the order is simple: it makes no sense to ask any further questions if one's intent is wrong. Nor does it make any sense to proceed if the relationship will be damaged. It really is as simple as that.

Section Five: Evoking Creativity

While *evoking creativity* is a skill that Downey included in Proposing, it obviously must be explored in some depth in this project, so merits a more detailed analysis in a separate section. It also is the logical place to begin to look at how CPS: TSM could more effectively help NDC better enable a player's creativity

Have we Arrived yet?

Aha! I can well imagine that you, the reader, must be thinking: “This is it! We have arrived at the core linkage between NDC and creativity! I wonder why we have spent and will yet spend so much time even looking at all those other skills?” Well, gentle reader, unfortunately, life is not so neat. For all of his qualities, Downey spends just over three pages formally discussing creativity. That is it – just over three pages. A book that struck me as being all about operationalizing creativity in a daily work setting which spends only three pages talking about creativity means that perhaps: 1) Downey does not understand the depth of the linkage between the two fields; 2) I have grossly over-estimated the inter-connection between the two fields; or 3) Downey does not understand the full nature of creativity, or more accurately, the full range of tools and techniques by which one can actively enhance creativity.

“Creativity is a vital part of coaching” quotes Downey (p.89). Creativity is what “allows the player to break out of a difficult situation, invent a new future or possibility, and make a step-change in their productivity or quality of life.” (p.89)

While Downey acknowledges that creativity “shows up in many ways” (p.89), he focuses only on three steps in the creative process:

1. Creating the future (visioning and goal setting)

2. Innovation (new ways of doing things, new options)
3. Generating success criteria (part of setting goals for the overall coaching program)

Downey warns coaches against always accepting what appear to be perfectly reasonable limits on what can be achieved. This is reasonable, given the need for non-judgmental listening that runs throughout NDC – this would be just another application of non-judging. Note that there are three aspects to limits one can discuss:

1. The coach's judgments of what is achievable;
2. The player's judgments of what is achievable; and
3. The real limits (often are unknowable until they are encountered)¹⁷

Downey states that the player's judgments on what is achievable are often more conservative than his own, and that both are more conservative than what is really possible. Unchallenged, these become real limits to what is possible. He argues: "I am absolutely certain that there is much, much more available to us if we only dare look" (p.90). Why do we impose limitations? Downey identifies one of what I feel are two related reasons:

1. We create the future from the past;
2. We want to be held accountable only to the least demanding goals possible

As Downey only covers the first reason in his book, I will review his input here and

¹⁷ This does not mean they cannot eventually be overcome with further applications of creativity and hard work; however, there may not be time or resources at the moment to tackle overcoming these limits, thus these limits are real limits.

save further analysis and discussion and analysis of the second reason for the Analysis section.

Creating the Future from the Past

Downey's reason for self-imposed limitations in our goal setting is that "most of us, most of the time, create the future from the past" (p.90). Our "pasts" are a mixture of past experiences (successes and failures), our personalities (likes and dislikes), our natures (strengths and weaknesses), and all the unconscious baggage we all carry (family traditions, class and cultural norms, etc.).

Being Held Accountable to the Least Demanding Goals

Whenever the above does not apply, most of us just do not want to undertake the "quest" that stretch goal setting would require of us. We implicitly realize that, if we set a stretch target or goal, then *we* will be the ones that have to work to achieve it and will be held accountable for its achievement.

Resistance comes from all angles, and, paradoxically, the most resistance often comes from those closest to the player – people who may have their own unconscious needs for the player to remain as he or she was. There are a number of reasons for this, not the least of which is that the player's changing would implicitly challenge those closest to the player to move beyond *their* own limitations and change as well. Thus, people who are closest to us, and are supposed to have our best interests, can be our biggest obstacles.

To counter this, Downey says that we must be "strong and courageous to do something different – and that is after you have given yourself permission even to imagine something different" (p.91). So, a coach must respectfully challenge players, and themselves, to move past the reasonable towards the extraordinary (yet achievable).

Creating the Future

Downey suggests three different coaching techniques for creating the future:

1. **Create a vision.** Get the player to define a time frame that is acceptable to the player. Ask: “What might be possible?” in that time frame. Downey suggests having players come up with as many ideas as they can, then edit that same list to keep those to which they are willing to commit. This is an approach very familiar to creativity professionals, especially CPS practitioners.
2. **Deliver an update or victory speech.** Have the player write or deliver a speech given at the end of the project or at a significant milestone listing all of the accomplishments and successes.
3. **Draw a picture of the vision.** The coach has the player draw a picture of the vision. It does not matter if the image is figurative or abstract, but it must be translated back into a written or verbal vision and set-of goals.

Creativity practitioners will recognize that these could be used as effective ways of Exploring the Vision, the first Step in the TSM Clarification Stage. Puccio, Murdock, and Mance (2007) identify a number of effective tools that may be of use for NDC practitioners, including Storyboarding and Wishful Thinking.

Evoking Innovation

Downey suggests three different coaching techniques for evoking innovation:

1. **Brainstorming.** “Get the player to create a list of all the possible options.” (p.92) This is an approach very familiar to creativity professionals, especially CPS practitioners.

2. **Ask an expansive question.** Downey suggests asking a question such as:

“‘If you had a magic wand, what would you do?’ or ‘What is the most outrageous option you can think of?’” (p.92) Interestingly, while Downey claims that these questions are less obvious as a means of evoking innovation, the ‘magic wand’ question is one I routinely ask players to force them to step out of their self-imposed mental limits.

Practitioner’s Corner:

The “magic wand” question works! It has *never* failed me yet in over ten years of coaching.

The magic wand allows even the most hardened of players to willingly suspend disbelief and truthfully answer the question. As a bonus, these players appear to answer with more honesty than they likely intended to give me!

This honesty is validated by the fact that their answers did not vary as our relationship deepened over time. I believe that any less-than-totally-honest answer would have been changed to prevent wasting the opportunity my coaching gave to them of getting what they really wanted.

3. **Ask for the impossible.** Downey suggests asking players to “think of something that would be impossible.” (p.92) As he states: “Identifying something that is apparently impossible can free up the thinking.” (p.92) Note that in his illustrative example, he asks the player “what would be one step less than (the identified impossibility)?” (p.92) This is a key subtlety, without which few readers not versed in creativity approaches would not be able to

effectively use this approach at all.

Three visioning approaches and three divergent thinking approaches are the sum total of creativity evokers Downey suggests to his reader, even though “creativity is a vital part of coaching.” (p.89).

The CPS: TSM-related tools suggested above are the very first steps to reversing that omission.

Practitioner's Corner:

Downey stated that most people do not want to give feedback because they do not want to hurt others. This claim does not sit square with me.

In my experience, many people identify too closely with their ideas and behaviours, so any negative feedback is perceived as a personal attack. Hence, most people do not want to give feedback because they do not want to be attacked directly (ex: retaliation for giving feedback to a boss) or be backstabbed (ex: retribution for giving feedback to a colleague). Sometimes, this even prevents giving feedback to subordinates!

The link to creativity is the link of courage and freedom mentioned earlier. Also, mobility protects one from feeling fact-based negative feedback is a personal attack. This enables the player to engage creative and other problem solving faculties towards resolving identified issues

Section Six: Extending the Learning

My Voyage

This should be the easiest section to write, yet it is the hardest. There are so many places I could extend the learning or ask others to do so. Because of the need to deliver a cogent project, I focused on the synergies between NDC and CPS: TSM at a structural level. Not surprising – it is these that I first noticed and that caused me to embark upon this project. Yet, I cannot help but feel that I could have focused on other synergies, especially concerning the philosophical synergies between CPS: TSM and NDC. Thus, I now feel that I have not been able to share 1% of the connection between CPS: TSM and NDC that I have intuitively used as a coach.

Other Avenues of Potential Investigation Using the NDC

Here are just some of the possible other avenues of investigation I thought about while working on this project:

- Looking at the deep connections linking Self 2 and the affective skills of CPS: TSM. This is the one area I so wish I could go back and fully explore.
- Actively creating a guide to help novice coaches more effectively get their players into divergent and convergent states as needed. Examples of what could be in such a guide include a list the many CPS-inspired statement starters; an expansion of the Option and Wrap-up stages of the GROW model to make explicit use of a convergent and divergent steps; etc.
- Delving into the thinking skills literature to attempt to bridge the individual skills in Downey's skill sets with those of the TSM. Also, it is likely that such research would require personal contact with Downey himself in order to seek

maximum clarity as to links or differences between said skills and TSM skills.

- An investigation into the experiences of coaches using NDC: How well does their experience match those of creativity practitioners and professionals who are using CPS: TSM?

An idea for further research that are a bit tangential to the CPS: TSM / NDC synergy investigation are:

- Both the Torrance Incubation Model of Teaching and Learning (TIM) and NDC are focused on allowing the student/player to learn as much as they can. An investigation into the TIM to see if some of its elements could be incorporated into NDC as a way of deepening their self-directed learning or as ways of really getting players back into mobility if they are stuck. Could the TIM be used to overcome massive interference quickly? Could the TIM be used as a means of accelerating players' learning or of making said learning more useful?

References

- Basadur, M, & Hausdorf, P.A. (1996). Measuring divergent thinking attitudes related to Creative Problem Solving and innovation management. *Creativity Research Journal*, 9(1), 21-32. Period at the end of each
- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York, NY: HarperCollins.
- Csikszentmihalyi, M (2003). *Good business: Leadership, flow, and decision making*. New York, NY: Viking.
- Csikszentmihalyi, M (2007). Video interview hosted by Jeffrey Mishlove. *Thinking allowed: Conversations on the leading edge of knowledge and discovery, (Part 2 of 3 part series: Creativity, flow and the evolving self - (#W372))* [video file]. Oakland, CA: Thinking Allowed Productions.
- Downey, M. (2003). *Effective coaching: Lessons from the coach's coach* (2nd edition). CENGAGE Learning: USA.
- Frankl, V.E. (1985). *Man's search for meaning* (Revised and Updated edition). New York, NY: Washington Square Press. (Original work published 1946{German}, 1962{English}).
- Gallwey, W.T. (1974). *The inner game of tennis*. New York, NY: Bantam Books.
- Gallwey, W.T. (2000). *The inner game of work*. New York, NY: Random House.

- Haggerty, J. E., (2004) Materials for One-on-one and Self CPS Facilitations. *Creative Studies Graduate Student Master's Projects*. Buffalo State, Buffalo, NY Paper 12.
- Digital copy retrieved from
<http://digitalcommons.buffalostate.edu/creativeprojects/12>.
- Homer-Dixon, T. (2000). *The ingenuity gap*. New York, NY: Alfred A. Knof.
- Neilson, L. (2008) Where mediation meets creative problem solving: A case study of a hybrid model. In G.J. Puccio, C. Burnett, J.F. Cabra, J.M. Fox, S. Keller-Mathers, M.C. Murdock & J.A. Yudess (Eds.) *Proceedings from the Second Creativity and Innovation Management Community Meeting*, (Book 2, pp. 97-117). Buffalo, NY: Creativity and Innovation Management.
- McAlpine, T.J. (2004). *Letter of intent for admissions into Buffalo State College Certificate in Creativity and Change Leadership*. Unpublished work.
- McAlpine, T.J. (2007). *Personal Vision Paper*. Unpublished work submitted as partial requirements for the Buffalo State College CRS 635: Creativity & Change Leadership.
- Miller, B., Vehar, J., Firestien, R., (2001a) *Creativity Unbound: An Introduction to the Creative Process*, (3rd ed.). Willamsville, New York: Innovation Resources Inc.
- Miller, B., Vehar, J., Firestien, R., (2001b) *Facilitation: A Door to Creative Leadership*, (3rd ed.). Willamsville, New York: Innovation Resources Inc.

Mumford, M. D., Zaccaro, S. J., Harding, F. D., Jacobs, T., & Fleishman, E. A. (2000).

Leadership skills for a changing world: Solving complex social problems. *The Leadership Quarterly*, 11(1), 11-35.

Murdock, M.C. & Keller-Mathers, S. (2008). Designing and delivering training for

creative thinking using Torrance Incubation Model of Teaching and Learning. In

G.J. Puccio, C. Burnett, J.F. Cabra, J.M. Fox, S. Keller-Mathers, M.C. Murdock

& J.A. Yudess (Eds.). *Proceedings from the Second Creativity and Innovation*

Management Community Meeting, (Book 2, pp. 70-96). Buffalo, NY: Creativity

and Innovation Management.

Puccio, G.J., Firestien, R.L., Coyle, C., & Masucci, C. (2006). A Review of the

effectiveness of CPS training: A focus on workplace issues. *Creativity and*

Innovation Management, 15(1), 19-33.

Puccio, G.J., Murdock, M.C., & Mance, M. (2005) Current developments in creative

problem solving for organizations: A focus on thinking skills and styles. *The*

Korean Journal of Thinking & Problem Solving, 15(2), 43-76.

Puccio, G.J., Murdock, M.C., & Mance, M. (2007). *Creative leadership: skills that drive*

change. Thousand Oaks: CA: Sage Publications.

- Puccio, G.J., Murdock, M.C., & Mance, M. (2008a) Identifying complex thinking skills associated with the Creative Problem Solving model. In G.J. Puccio, C. Burnett, J.F. Cabra, J.M. Fox, S. Keller-Mathers, M.C. Murdock & J.A. Yudess (Eds.). *Proceedings from the Second Creativity and Innovation Management Community Meeting*, (Book 2, pp. 149-163). Buffalo, NY: Creativity and Innovation Management.
- Puccio, G.J., Murdock, M.C., Mance, M. (2008b) Creative Problem Solving: Background and introduction to the Thinking Skills Model. In G.J. Puccio, C. Burnett, J.F. Cabra, J.M. Fox, S. Keller-Mathers, M.C. Murdock & J.A. Yudess (Eds.). *Proceedings from the Second Creativity and Innovation Management Community Meeting*, (Book 2, pp.129-148). Buffalo, NY: Creativity and Innovation Management.
- Scott, G., Leritz, L.E., & Mumford, M.D. (2004). The effectiveness of creativity training: A quantitative review. *Creativity Research Journal*, 16(4), 361-388.
- Senge, P.M. (1990). *The fifth discipline: The art and practice of the learning organization*. New York, NY: Doubleday.
- Thompson, F. (1989). Lectures made and notes handed out to the University of Waterloo ARCH252 – Creative Problem Solving class (Synectics). Unpublished work.

Appendix A - Concept Paper

Exploring the commonalities between CPS (CPS: TSM model) and Non-Directive Coaching

Name: — Trevor McAlpine — **Date Submitted:** Spring 2010

Project Type: Use a Skill/Talent to Improve the Quality of Life for Others

What Is This Project About?

The purpose of this project is to explore the commonalities and links between the Thinking Skills Model (TSM) of Creative Problem Solving (CPS) – (CPS: TSM) – and coaching, specifically the approach to coaching known as Non-Directive Coaching (NDC).

Rationale for Choice:

CPS: TSM is a flexible, concise, non-prescriptive map of the entire problem-solving thought process (Puccio, Murdock, and Manse, 2007). Thus the TSM may be applicable beyond CPS – it may be able to augment other processes and methodologies to enable them to incorporate improved creativity by design.

How linked are the TSM and the models used in other (non-creative science) fields where creativity is asserted to play a part?

How could the TSM be used to improve the creative thinking and/or creative output of these other fields?

In what ways is creativity-enhancement within these other fields clearly and

formally used (if they exist), or is creativity-enhancement sometimes present only because of accident?

There are two major reasons for this work:

1. Proponents of NDC insist that it lets people express their creativity. If so, NDC must be a context (or an environment) in which the person being coached (and for different reasons, the coach) expresses creativity. Since the TSM was designed as a way to promote “more efficient thinking in individuals and groups” (Puccio, Murdock, Mance, 2008a, p.149), all of the above implies that some of the TSM must somehow be present in NDC. Finding elements of the TSM within NDC would help prove that the TSM could then be used to augment other processes or methodologies;
2. Given the above, it stands to reason that an NDC approach, explicitly augmented by more of the TSM (or CPS), would deliver better results faster and with less effort. Experiments proving this to be true is beyond the scope of this project, but within scope is the exploration of the ways in which NDC can benefit from the advances made within the creativity field over the last fifty years AND the ways in which NDC can contribute to the creativity field.

Creativity practitioners find few formal settings in which to apply their craft. CPS and other approaches are often seen as being resource-heavy, awkward, and useful only for special situations. So the emphasis shifts to using creativity-enhancement in informal ways. But how to do this with rigor? And how to do this in the natural, smooth flow of everyday life (work, play, etc.) without it feeling like something artificial, even if it is pared down to the minimum?

The author has over a decade experience as a performance improvement / change management coach. Many times, I used creativity-enhancement to get client personnel to make needed changes, almost never held a formal CPS session. All the work was done by incorporating creative science tools and approaches without formal acknowledgement.

I have been very successful using NDC coaching approaches where more directive coaches have failed. (I have also had to be directive when needed). What would

explain this different in outcome? My superior NDC skills or are there other reasons related to my awareness of the creative sciences?

Since coaching involves helping people do something new and useful, it is inherently a creative. Specifically, I feel that NDC allows for creativity to be expressed by both the person coaching and the person being coached. How creative is NDC, or how creative can it be? In what ways are NDC and CPS: TSM related?

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

Primary:

An identification of the key commonalities and differences between NDC and CPS: TSM .

- An analysis of how these similarities or differences relate to the assertion that NDC enables people being coached to express their creativity.
- Possibly, an extrapolation into incorporating the TSM more fully into NDC in order to improve its ability to allow people being coached to express their creativity.

Secondary (if possible):

Identification of how NDC could gain from CPS: TSM (tools, approaches, etc.) and what CPS: TSM could gain from NDC.

- This potentially expands the utility and effectiveness of both NDC and CPS: TSM .

- Specifically, if NDC is a viable vehicle in which to use much of CPS: TSM , it helps make the CPS: TSM more practical and useful, hence more relevant for practitioners and academics currently “outside” of creative sciences.
- It also may open the door to new ways of using the CPS: TSM or of achieving its purpose when the environment or situation is not one that has traditionally supported the use of CPS.

What Criteria Will You Use To Measure The Effectiveness Of Your Achievement?

The criteria will be personal and subjective. Stating these explicitly:

- Is my understanding of NDC (its models, tools, methods, and underlying philosophies) improved because of this work?
- Is my understanding of CPS: TSM (its models, tools, methods, and underlying philosophies) improved because of this work?
- How much do I understand of how the NDC incorporates the TSM (by design or accident)?
- Do the above explain certain observations made during my decade of field experience as a business coach? Does the project work provide me with a better understanding of past coaching successes and failures?
- Where I disagree with NDC proponents, can I base this disagreement on solid reasons such as creativity science or field experience?

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

This is primarily my personal project with no direct outside help involved. Besides from referenced works, any outside help I expect to receive will be from feedback from select people.

When Will This Project Take Place?

The framework will be created in 2010. Writing will occur in 2010 and 2011.

Where Will This Project Occur?

There will be no field trials or any other sort of public iteration. The work will occur in Burlington, Ontario, Canada.

Why Is It Important to Do This?

Underlying everything, my personal goal has always been to use CPS and other creativity tools, processes, and approaches to help others live better lives. Freedom and courage are the cornerstones of my vision of creativity, but I need as many ways as possible to create them for myself and help others gain them for themselves.

Creativity practitioners like me find few formal settings in which to apply their craft. CPS and other approaches are often seen as being resource-heavy, awkward, and useful only for special situations. So the emphasis shifts to using creativity-enhancement in informal ways. But how to do this with rigor? And how to do this in the natural, smooth flow of everyday life (work, play, etc.) without it feeling like something artificial, even if it is pared down to the minimum?

The author has over a decade experience in performance improvement change

management. Performance improvement helps organizations get improved results, by improving the use of existing resources. Do more of the right things better and faster. It requires knowledge and coaching skills to help people make the changes they need to make. It requires an iterative approach – plenty of feedback – and uses both adaptive and innovative creative styles. It is organic.

This is in contrast to changes (improvements?) resulting from capital expenditures, major strategic (ex: change market or product mix) or operational changes (ex: downsizing), etc. – most of these are imposed, ineffectively use feedback, and may surgically so transform the organization as to effectively render it alien to itself.

Many times, I used creativity-enhancement to get client personnel to make needed changes, but fewer than five formal CPS sessions have ever been scheduled (and one was exclusively devoted to using SCAMPER!). All the rest was done by incorporating creative science tools and approaches without formal acknowledgement.

These informal creativity-enhancement efforts occurred mostly in coaching situations. Leaders sometimes succumb to the temptation to “order excellence.” This leads to failure. But still many managers act as if behaviors can be changed and performance improved merely by demanding the desired change or by creating formal work process for people to follow that will deliver change. My personal work as a business coach demonstrates this. I have been very successful using NDC coaching approaches where more directive coaches have failed. (I have also had to be directive when needed). What would explain this different in outcome? My superior NDC skills, are there other reasons?

Since coaching involves helping people do something new and useful, its output helps

other be creative. Specifically, I feel that NDC allows for creativity to be expressed by both the person coaching and the person being coached. How creative is NDC, or how creative can it be? In what ways are NDC and creativity related?

Other reasons for doing this include:

- It would answer a personal, urgent need to be able to apply creativity-enhanced thinking in as many ways as possible.
 1. NDC is a promising approach to apply CPS: TSM elements informally.
 2. This also would help prove my personal assertion that CPS: TSM is NOT a means to improve leadership as much as *it is a whole new way of understanding human thinking processes.*
- Re-inventing the wheel is wasteful. If coaches can benefit from creativity research and practice, then they should be eagerly invited to the table. They will likely discover the links eventually.
- My bias is that creativity is still seen either as:
 1. An exceptional activity (generally process-driven) to be trotted out with great fanfare when needed then put away until next time. While we do not limit logical thinking to the worlds of formal syllogisms and mathematics, many limit using creativity-enhancement approaches to exceptional circumstances?
 2. Something that is a gift from the muse, spontaneously occurring once the right conditions are present, that cannot be improved upon lest such efforts eliminate it.

Since neither represents reality as creativity practitioners know it, the attempt to link NDC and CPS: TSM is an attempt to show that the creative sciences really do have fundamental utility since similar models and approaches on how we best think and respond to the world have been discovered outside of the creative sciences.

- NDC coaching is not getting its due. It can generate powerful change results. Too often coaching is defined as having to be directive if it is to be successful (some directive coaching fans use the shouting sports coach or drill-sergeant as

archetypes of choice, others the patiently explaining uncle, but all involve the coach talking/teaching vs. enabling the coached person doing the learning). Worse, it seems that many coaches misuse NDC by not understanding how to use it or when it must be used. This dilutes NDC's strengths (fostering the person's growth and learning) and amplifies NDC's weaknesses (ex: applying it when the coaching process needs to shift into directive styles of coaching or even direct managing in order to get effective results).

Secondary – Likely extension of the project work:

This work may lead one day to a formally expanded NPC process and toolbox by adding in the CPS: TSM tools, steps, stages, etc. that best improve NPC's usefulness.

Tertiary – Hopeful extended purpose for undertaking this project:

This work is valuable in its own right, yet it can also be a precursor to a possible future project: creating a framework in which the CPS: TSM (and NDC) is used to provide an effective framework for self-coaching / self-facilitation for personal improvement or personal growth, something I plan on calling Personal Actionable Change (PAC).

Description of a possible future PAC project:

The CPS: TSM is a very new way of combining the creative thinking process of CPS with the cognitive and affective thinking steps or stages required to engage in creative thinking. Since almost all thinking beyond rote recall involves some element of change, it stands to reason that the CPS: TSM model is a useful model of our thinking processes. I believe that it should be used whenever there is a need to think deeply about something of value. And what is of greater value than thinking about personal change and growth?

At the risk of being simplistic, my experience to date with available personal

improvement programs is that they are incomplete. Some problems include:

- Glossing over or omitting key phases in the CPS: TSM process
- Locking into a fixed process vs. focusing on an iterative process
- Bypassing steps in CPS: TSM phases
- Over relying on certain thinking modalities (ex: affective, cognitive)
- Transforming valuable thinking techniques (ex: reframing) into “one-size fits all” gimmicks that are supposed to magically enable breakthroughs
- Overall, the net result is little power to produce lasting change.

For me, creativity represents freedom, and the key requirement to be creative is courage. These are hard to exercise when stuck in ignorance or trapped in dysfunctional behavioral or thinking patterns (ex: ruts). That is why a PAC program based on effective CPS: TSM approaches may help people make the breakthroughs they need. NDC represents another set of tools to effectively help people facilitate others or self-facilitate themselves through the process.

How passionate am I? Well, for me the desire to help others is fundamental, even primordial. I started the Master of Creative Science program with the idea of using CPS to help others. I see the CPS: TSM as a breakthrough in THINKING, not just creative thinking. Eventually I wish to put it to good use by enabling others to use it to its fullest as well without having to go through the M.Sc. program and discover this application of the CPS methodology on their own.

Personal Learning Goals:

- Synthesis of my CPS: TSM knowledge.

- In-depth review of NDC
- Analysis of NDC as seen through the lens of the CPS: TSM .
- Discussions on how NDC can benefit from CPS: TSM .
- Discussions on how CPS: TSM can benefit from NDC (and any other creative science approach tools, models, techniques, etc.)

How Do You Plan to Achieve Your Goals and Outcomes?

The following will be some of the related elements will be used:

- Brush up on the CPS: TSM model – read over Puccio, Murdock and Mance’s book *Creative Leadership*.
- Read Myles Downey’s book on NDC *Effective Coaching* and notes from the London School of Coaching (which he helped create).
- Read key parts of Tim Gallwey’s *The Inner Game of Work*, a book that helps describes the application of *Inner Game* philosophies to work situations. *Inner Game* approaches are what led to the development of NDC. Also read notes from his lecture I attended in the UK.
- Determine areas of similarity and difference between the two. Focus primarily on how NDC can be better understood via an understanding of CPS: TSM . Also be aware of how NDC can be extended by CPS: TSM .

Evaluation:

The criteria will be personal and subjective. Stating these explicitly:

- How much has my understanding of NDC (its models, tools, methods, and underlying philosophies) increased because of this work?
- How much has my understanding of CPS: TSM (its models, tools, methods, and underlying philosophies) increased because of this work?
- How much of TSM is present in NDC? Is this sufficient to explain why NDC proponents feel like it helps people being coached express their creativity?
- How much does the project explain certain observations made during my decade of field experience as a business coach? How does the project work provide me with a better understanding of past coaching successes and failures?
- How congruent is my synthesis of NDC and CPS: TSM with my field experience as a coach?

Identify Pertinent Literature or Resources:

Proposed sources include:

Csikszentmihalyi, M (2003). *Good Business: Leadership, flow, and decision making*.

New York: Viking

Downey, M. (2003). *Effective Coaching: Lessons from the coach's coach* (2nd edition).

CENGAGE Learning: USA

Gallwey, W.T. (1974). *The Inner Game of Tennis*. New York: Bantam Books

Gallwey, W.T. (2000). *The Inner Game of Work*. New York: Random House

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

- Puccio, G.J., Murdock, M.C., Mance, M. (2008a) Identifying Complex Thinking Skills Associated with the Creative Problem Solving Model. In G.J. Puccio et al. (Eds.) *Creativity and Innovation Management: An international conference (the 2nd community meeting) (Book 2)* (pp. 149-163). Buffalo, NY: Creativity and Innovation Management
- Puccio, G.J., Murdock, M.C., Mance, M. (2008b) Creative Problem Solving: Background and introduction to the Thinking Skills Model. In G.J. Puccio et al. (Eds.) *Creativity and Innovation Management: An international conference (the 2nd community meeting) (Book 2)* (pp. 129-148). Buffalo, NY: Creativity and Innovation Management
- Thompson, F. (1989). Lectures made and notes handed out to the University of Waterloo ARCH252 – Creative Problem Solving class (Synectics). Unpublished work.