The Future of Post-Human Creative Thinking

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A Preface to a New Theory of Invention and Innovation

By

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CAMBRIDGE SCHOLARS PUBLISHING

The Future of Post-Human Creative Thinking, by Peter Baofu

This book first published 2009

Cambridge Scholars Publishing

12 Back Chapman Street, Newcastle upon Tyne, NE6 2XX, UK

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

ISBN (10): 1-4438-0488-6, ISBN (13): 978-1-4438-0488-2

To Those Beyond Convergent and Divergent Thinking

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- *The Future of Post-Human Mass Media* (2009)
- *The Rise of Authoritarian Liberal Democracy* (2007)
- *Beyond the World of Titans, and the Remaking of World Order* (2007)
- *Beyond Capitalism to Post-Capitalism* (2005)
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- Volume 2: *The Future of Human Civilization* (2000)

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FOREWORD

The beginning of the 21st century has placed an onus on societies everywhere—a call for change, a drive for what is new and improved, an urgent need for progress. And, along with that has come a concomitant call for creativity to meet that need.

Societies around the world are seeking individuals who possess "out of the box" thinking, who bring a new view, rather than the "tried and true" role of traditional caretakers. And, no better example serves as proof than hand-held, hi-tech telecommunications products that are unveiled at monthly consistencies with additional features in a palm sized device.

Dr. Peter Baofu has an astute capacity for observing and analyzing situations that can perplex thoughtful persons in the world. And he is not afraid to criticize what he sees or to share his reactions with his readers. In the present volume he dissects the construct of creativity as a value that is currently uncritically held in such high esteem, thereby allowing the reader to get a better (more insightful) handle on it.

Sylvan Von Burg
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George Washington University

ACKNOWLEDGMENTS

Like many other books of mine, this one is written to challenge conventional wisdom, this time, on creative thinking, and to propose a new theory to understand it better.

Because of its political incorrectness, this book receives no external funding nor help from any formal organization or institution.

My only reward is the amazing feeling to discover something new that the world has not known.

There is one person, however, whom I deeply appreciate for his foreword, and he is Sylvan von Burg at George Washington University School of Business,.

In any event, I bear the sole responsibility for the ideas presented in this book.

ABBREVIATIONS

ALD = Peter Baofu. 2007. *The Rise of Authoritarian Liberal Democracy: A Preface to a New Theory of Comparative Political Systems*. Cambridge, England: Cambridge Scholars Publishing, Ltd.

BCIV = Peter Baofu. 2006. *Beyond Civilization to Post-Civilization: Conceiving a Better Model of Life Settlement to Supersede Civilization*. NY: Peter Lang Publishing, Inc.

BCPC = Peter Baofu. 2005. *Beyond Capitalism to Post-Capitalism: Conceiving a Better Model of Wealth Acquisition to Supersede Capitalism*. NY: The Edwin Mellen Press.

BDPD1 = Peter Baofu. 2004. Volume 1. *Beyond Democracy to Post-Democracy: Conceiving a Better Model of Governance to Supersede Democracy*. NY: The Edwin Mellen Press.

BDPD2 = Peter Baofu. 2004. Volume 2. *Beyond Democracy to Post-Democracy: Conceiving a Better Model of Governance to Supersede Democracy*. NY: The Edwin Mellen Press.

BNN = Peter Baofu. 2006. *Beyond Nature and Nurture: Conceivng a Better Way to Understand Genes and Memes.* Cambridge, England: Cambridge Scholars Publishing, Ltd.

BWT = Peter Baofu. 2007. *Beyond the World of Titans, and the Renaking of World Order: A Preface to a New Logic of Empire-Building.* Cambridge, England: Cambridge Scholars Publishing, Ltd.

FAE = Peter Baofu. 2007. *The Future of Aesthetic Experience: Conceiving a Better Way to Understand Beauty, Ugliness and the Rest*. Cambridge, England: Cambridge Scholars Publishing, Ltd.

FC = Peter Baofu. 2007. *The Future of Complexity: Conceiving a Better Way to Understand Order and Chaos.* London, United Kingdom: World Scientific Publishing Co.

FCD = Peter Baofu. 2002. *The Future of Capitalism and Democracy.* MD: The University Press of America.

FHC1 = Peter Baofu. 2000. Volume 1. *The Future of Human Civilization.* NY: The Edwin Mellen Press.

FHC2 = Peter Baofu. 2000. Volume 2. *The Future of Human Civilization.* NY: The Edwin Mellen Press.

FIA = Peter Baofu. 2008. *The Future of Information Architecture: Conceiving a Better Way to Understand Taxonomy, Network, and Intelligence.* Oxford, England: Chandos Publishing (Oxford) Limited.

FPHC = Peter Baofu. 2004. *The Future of Post-Human Consciousness.* NY: The Edwin Mellen Press.

FPHCT = Peter Baofu. 2009. *The Future of Post-Human Creative Thinking: A Preface to a New Theory of Invention and Innovation.* Cambridge, England: Cambridge Scholars Publishing, Ltd.

FPHE = Peter Baofu. 2009. *The Future of Post-Human Engineering: A Preface to a New Theory of Technology.* Cambridge, England: Cambridge Scholars Publishing, Ltd.

FPHK = Peter Baofu. 2008. *The Future of Post-Human Knowledge: A Preface to a New Theory of Methodology and Ontology.* Oxford, England: Chandos Publishing (Oxford) Limited.

FPHML = Peter Baofu. 2008. *The Future of Post-Human Mathematical Logic: A Preface to a New Theory of Rationality.* Cambridge, England: Cambridge Scholars Publishing, Ltd.

FPHMM = Peter Baofu. 2009. *The Future of Post-Human Mass Media: A Preface to a New Theory of Technology.* Cambridge, England: Cambridge Scholars Publishing, Ltd.

FPHST = Peter Baofu. 2006. *The Future of Post-Human Space-Time: Conceivng a Better Way to Understand Space and Time.* New York: Peter Lang Publishing, Inc.

FPHU = Peter Baofu. 2008. *The Future of Post-Human Unconsciousness: A Preface to a New Theory of Anomalous Experience.* Cambridge, England: Cambridge Scholars Publishing, Ltd.

• PART ONE •

Introduction

CHAPTER 1
INTRODUCTION—THE SEDUCTION OF CREATIVE THINKING

> Everyone can be creative, even if you don't always feel that way. Don't accept "I'm just not creative" as an answer. People have to believe in themselves to think creatively in a successful way.
> —CSUS (2008)

The Fashionable Nonsense on Creative Thinking

What exactly makes creative thinking so magical that, somehow, "everyone can be creative" and, by implication, creativity is a good thing to have—to the point that this popular view is fast becoming a fashionable nonsense in this day and age of ours?

To put things in a historical perspective—this popular view contrasts sharply with the opposing view in the older days (e.g., during the Enlightenment and Romantic eras), when people used to think that creativity was primarily for the selected few with extraordinary abilities. (S. Mizrach 2008; WK 2008o).

Contrary to the respective conventional wisdom in each of the two opposing eras, neither of the two views is valid. Ours is no more so than theirs.

This is not to imply, of course, that there are only a few instances of creativity in human history, or, in reverse, that creativity can be equally taught to everyone—and, for that matter, that there is absolutely nothing good about creativity. Obviously, extreme views like this are far from the truth.

The point in this book, however, is to show an alternative (better) way to understand the nature of creative thinking, which goes beyond both convergent and divergent thinking, while learning from them all.

In the end, there is nothing intrinsically good (or bad) about "creative thinking"—just as there is nothing essentially good (or evil) about "God," "the king," or the like, by analogy. They have all been used and misused in accordance to the interests and powers that be over the ages.

If true, this seminal view will fundamentally change the way that we think about the nature of imagination and intuition, with its enormous implications for the future of invention and innovation, in a small sense, and what I originally called its "post-human" fate, in a large one.

The Multiple Dimensions of Creativity

At the outset, the word "creativity" has its etymological root in 14th-century Latin, from "*creatus*, past participle of *creare*," which means "to grow" or "to bring into existence." (MWD 2008)

Over time, the word has evolved into different meanings. In fact, C. W. Taylor (1998) once went so far as to collect and identify more than 60 different definitions of creativity. (WK 2008)

To add some more confusion to the literature, creativity can even be known by different names (e.g., "lateral thinking," "divergent thinking," "flexible thinking," "thinking outside the box," "fluid intelligence," or even "TRIZ"). (WK 2008, 2008a, & 2008b; TRIZ 2004)

With this caveat in mind—creativity, not surprisingly, is not monolithic, since it has appeared in all shapes and sizes.

For instance, creativity can be about a "trait" (e.g., "that some people have and others do not"), a person (e.g., who engages in creative work), a "state" (e.g., "that people sometimes enter into"), a "product" (e.g., that "creativity" produces), a "process" (e.g., where creativity can occur in stages like what Graham Wallas and Richard Smith once called "preparation," "incubation," "intimation," "illumination," and "verification"), a "creative technique" (e.g., Alex Osborn's "brainstorming," Genrikh Altshuller's "TRIZ," and Edward de Bono's "lateral thinking"), or an environment (e.g., an "inventive organization"). (S. Harnad 2008; WK 2008; G. Wallas 1926; A. Osborn 1948; E de Bono 1992; D. Hughes 1998; J. Mauzy 2003)

Creativity can also be "eminent" (viz., "'recognized' or 'ingenious,' e.g., Einstein's creativity; sometimes referred to as 'Creativity' with a capital *C*)" or, conversely, "mundane" (or less important, that is, creativity with a small *c*). (WK 2008c) In fact, creativity with the capital *C* can also be called "radical," or even, "revolutionary" creativity—while creativity with a small *c* can likewise be known as "incremental," or "small" creativity.

These multiple dimensions of creativity are summarized in *Table 1.1*.

Creativity, Invention, and Innovation

Creativity, in addition, can also be understood in relation to the faculties of imagination and intuition, which make creative thinking possible in the first place.

After all, what is creative has much to do with the ability to think "analogously" (as in imagination) or "intuitively" (as in intuition), just to cite two instances (as there are others too, of course). (S. Harnad 2008)

In this sense, what is creative is not about the ability to think logically (as in deductive reasoning and inductive reasoning), or, for that matter, to learn by rote memory or to imitate blindly, for instance. (S. Harnad 2008)

Imagination and intuition can be more deeply analyzed, when put in the context of invention and innovation, in relation to creativity.

Yet, one should not confuse the three terms (viz., creativity, invention, and innovation), although they are closely related.

Firstly, creativity, in one definition, refers to "the act of producing new ideas," or, in another one, "a mental process involving the generation of new ideas or concepts, or new associations of the creative mind between existing ideas or concepts." (WK 2008)

Secondly, innovation, on the other hand, is "the process of both generating and applying such creative ideas in some specific context." (WK 2008) For instance, "[i]n economics the change must increase value, customer value, or producer value. The goal of innovation is positive change, to make someone or something better. Innovation leading to increased productivity is the fundamental source of increasing wealth in an economy." (WK 2008d)

And thirdly, invention, however, is often contrasted with "innovation," since the former refers to "an idea made manifest" (especially, though not exclusively, in the arts), whereas the latter means "ideas applied successfully" (especially, though not exclusively, in "economics, business, technology, sociology, and engineering," for instance). (WK 2008d; M. Mckeown 2008; WK 2008e).

Thus, invention is "a highly creative process" and when it "gets out into the world," it becomes "innovation." (WK 2008e)

In other words, both invention and innovation involve creativitiy. Yet, what is inventive, for instance, is creative, but what is creative may not be inventive (as it may be innovative instead). The same is true for the relationship between creativity and innovation.

Or to put it yet in another different way, when creativity is ideational and original, it becomes inventive, but when creativity is applied and useful, it becomes innovative.

The Theoretical Debate

With this distinction among creativity, invention, and innovation (as summarized in *Table 1.2*) in mind—the next business to do is to introduce different theoretical approaches in the literature on creativity.

Four main theoretical approaches can be summarized hereafter (and in *Table 1.3*), as a way to introduce the complicated theoretical debate on creativty, with the fourth to be my original contribution to the literature).

In the absence of better words, these four theoretical approaches can be called, namely, (a) the *bio-psychological* argument, (b) the *socio-cultural* argument, (c) the *serendipitous* argument, and (d) the *comprehesnive* argument—to be addressed hereafter, respectively (and summarized in *Table 1.3*).

The Bio-Psychological Argument

Firstly, a main theoretical approach focuses more on both biological and psychological factors and can be called, in the absence of better words, the *bio-psychological* argument.

This bio-pschological argument can be divided into two major camps, which can be labeled, in the absence of better words, namely, (a) the view on *innateness* and (b) the view on the *unconscious mind*.

The View on Innateness

The view on innateness consider creativity as biological in origin, in that it is hard-wired in the brain and is unevenly distributed by way of a genetic lottery, to the extent that those who are creative are biologically more endowed with creative abilities than those who are not so creative (or even not at all in other cases).

For instance, in one version of this view, Charles Peirce proposed the existence of “abduction,” which is a third thinking process besides “induction” and “deduction,” whereby “people find the right generalization from considering sample cases even though the probability of finding it is much too low.” (S. Harnad 2008)

For Peirce, “the reason we succeed so often in finding improbable generalizations is that the solutions are somehow already built into our brains. Hence, according to this view, creativity is a kind of 'remembering,' much the way Plato thought learning was remembering [anamnesis] (not conscious remembering in either case, of course). If it is true that the innate patterns of our brain activity play such a crucial role in creativity, then of course no 'preparation

is more important than this (evolutionary?) one, and creativity turns out to be in part an instinctive skill." (S. Harnad 2008)

This biological instinctive skill allows the creative mind to work creatively in two major ways, namely, either (a) by "eliminating many of the possible false starts we could take by rendering them (literally) unthinkable in the first place," or (b) by guiding it "in how…[to] select and evaluate the possibilities." (S. Harnad 2008)

This is not necessarily to assume, however, that the evolutionary process for creative thought must be Darwinian for nautral selection. As Liane Gabora (2005) critically pointed out, "[s]election theory does not provide us with a formal description of how creative thought evolves, not only because of the oft-cited assumption of randomness, but because of the requirement that we enumerate up front all possible alternatives, and the impossibility of describing situations wherein the outcome emerges spontaneously through interaction between problem constraints and context. But this does not necessarily mean that creative thought is not an evolutionary process," but that "creative thought could evolve without natural selection. First…evolution need not be Darwinian. Then…creative thought may fit into a more general, encompassing description of evolution as context-driven actualization of potential."

Even with this qualification—the problem in relation to (a) is that "it seems to attribute too much specific innate structure to the mind (and in this respect it has an element of the magical view). Since language, logic and the mechanical sampling of possible variations by trial and error seem to allow us to conceive of so much, it is hard to see how the first form of abduction—limits on what is conceivable—could have much of a role. The problem of creativity seems to begin once we take the vast array of conceivable alternatives as given: How do we then find the 'right' ones?" (S. Harnad 2008)

And the problem in relation to (b) is that "it is unclear to what extent this 'guidance' function, the one involved in hunches, conjectures, intuition, etc. (whatever they are), is an innate, evolutionary one, arising from the structure of our minds, rather than an effect of experience, preparation, analogy and even chance." (S. Harnad 2008)

In the end, this "abduction view seems to attribute too much to innate structure without giving any explanation of its nature and origins." (S. Harnad 2008)

The View on the Unconscious Mind

There is another version of the bio-psychological argument, in that creativity is "the working of the 'unconscious mind'"—which is something that Jacques Hadamard (1954) on mathematical invention and Sigmund Freud on the psychoanalysis of creativity had propounded.

This "magical" version of the bio-psychological argument "offers no real explanation of the creative process, merely attributing it to a mysterious (and very creative) unconscious mind." (S. Harnad 2008)

Their concern here is that "for a time one works consciously on a problem, and when one fails, one's unconscious mind somehow continues and mysteriously accomplishes what the conscious one could not." (S. Harnard 2008)

But the problem here, then, is that "[f]rom the perspective of modern cognitive science this is not very helpful, because all cognitive processes are unconscious, and as such, require an explanation, not merely an anthropomorphic attribution to another, wiser (or more primitive) mind analogous to the conscious one." (S. Harnard 2008)

Yet, the good part of this "magical" view is that it points us "to the incompleteness of the role of conscious, deliberate efforts in the creative process. Note, however, that Pasteur's dictum had already indicated that preparation was necessary but not sufficient….Moreover, 'conscious, deliberate effort' is not even sufficient to explain such altogether uncreative cognitive activities as remembering a name, recognizing a face or adding two and two." (S. Harnad 2008)

So, if the bio-psychological argument is problematic, then what alternative one is available?

The Socio-Cultural Argument

An alternative argument, then, opposes the first and can be called, in the absence of better words, the *socio-cultural* argument.

The socio-cultural argment can be summarized below by way of two good examples, namely, (a) the view on preparation and (b) the view on creative principles, to be addressed hereafter.

The View on Preparation

This version of the socio-cultural argument focuses more on the process of "preparation" to learn what has been handed down to culture and society as "conventions," wherefrom the creative leap can take off. (S. Harnad 2008)

Louis Pasteur put it well, when he said that "le hasard favorise l'esprit prepare" (that is, in English, "chance favors the prepared mind"). (S. Harnad 2008)

For Pasteur, although "[there is a (perhaps very large) element of chance in creativity,…it is most likely to occur if the mind is somehow prepared for it. Context shows that by 'preparation' Pasteur did not mean being born with the 'creative' trait. He meant that existing knowledge and skills relevant to the