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## ON TECHNOCULTURE: A PARADIGM SHIFT IN CREATIVITY?

**Ruly DARMAWAN**

Doctoral Candidate - Art Science and Design Studies Program,  
Faculty of Art and Design, Institute of Technology Bandung -  
INDONESIA  
*ruly.darmawan@gmail.com*

### ABSTRACT

*The information and communication technology (ICT) has already penetrated into human everyday life. In Indonesia, the ICT is being implemented in several sectors, including education. The promises notified by the ICT have made this ever-developing technology more adaptable by the society. Furthermore, the Indonesian government, through the ministry of communication and information, has initiate several ICT developmental programs. This program is only a small part of the national grand plan in order to survive in the global competition.*

*However, as some scholars are noted, the frequent usage of ICT may contribute in paradigm shift in human perception which will eventually lead the people to be a technocultural community. Some critiques about technoculture are being issued by some scholars, particularly on the ICT in dehumanization context. In fact, technoculture might be appeared as the starting point to explore the ideas on creative industry development.*

*Creativity can be formulated in four P-s; Person, Process, Product, and Press. Each "P" generally considers the human interaction with environment. However, with the potential shift of human's perception of environment and the way human interact with environment in technoculture society, it might affect the "four P-s" that in turn will affect the creative outcome itself.*

*This paper would like to seek out the relationship between technoculture with the four P's formulation; and will trace some potential towards better understanding of the creativity in the recent cultural transformation.*

**Keywords:** *ICT, technoculture, four P's of creativity*

### INTRODUCTION

Creativity, as an object, is an easy thing to find in the daily life. In establishing a civilization, creativity plays an important role which contributes some significant things for human life. In a more specific case, human needs tools to make the activity more efficient and more effective in everyday life. This situation encourages the human to be more creative in the context of determining the problem and seeking the alternatives for solution. The birth of technology appears as promising enlightenment towards the better future. Henceforth, the presence of technology might be equated as "a creative companion" for the human in every single life sequence.

As a companion, human and technology may potentially influence each other. In this case, the human will always have to make some

substantial adjustments according to the ever-developing technology. In one hand, this situation is conditioning the human to be more adaptive for the future possibilities. However, in the other hand, this situation may be problematic for human, especially in the context of shifting the mentality, or even shifting the world-view.

## TECHNOCULTURE

The utilization of ICT in everyday life opens the chance for human to form an alternative culture. Technoculture is a paradigm shift of human perception as a consequence of technology utilization in everyday life. However, not all of technological products may be potential to the production of technoculture. In this case, there are things that should carefully be investigated before justifying a technological product as potency towards technoculture. Lelia Green (2001) saw that technoculture rises from the information technology by which human perception of space and time is changing (see Green, 2001: xxvii-xxviii). From this perspective, it can be concluded that the development of technoculture begins around the last two decades, especially when the revolution of communication and information dissemination through computer network took place. In contradiction, Lars Løvlie (see Løvlie 2006: 2) noted that the society has already been experiencing the technocultural symptom along with the development of printing technology. Løvlie saw that this kind of technology, in particular The Gutenberg, has changed the human perception about writing and language. From these perspectives, it can be concluded that the technology towards the technocultural paradigm should really possess the ability to change the human perception, human mentality, or human world-view. Nowadays, as noted by Lelia Green, the technology that appropriates to be considered as technocultural potency is the communication technology or the ICT by which human may have a paradigm shift in perception of space and time.

## CREATIVITY

Defining creativity might be as complicated as becoming creative itself. Creativity may appear as a final result of creative activity, or as the process of creative activity itself. However, towards a comprehensive understanding, the creativity can be approached from the formulation of the four P's.

### a. The Four P's

The four P's is a well-known formulation in the theory of creativity which stands for person, process, press, and product. These P's are an entry point towards the discussion of creativity and its developmental effort as well. Some definition of creativity focuses on each P's or the combination of it (Munandar, 1999: 26). Brief explanations of each P's are as follows:

**Person.** Person refers to the capability of someone in pursuing a creative action and in interacting with environment. Sternberg in "Three Facet Model of Creativity" (see Munandar, 1999: 26) noted that the creativity is an identical point where three attributes of psychology meet. They are intelligent, cognitive style, and motivation. The central issue of this person is on how a person develops potentials so s/he can do activities and, all at once, can overcome the arising problem with an appropriate solution.

**Process.** Process is dealing with the effort in creative activity. Kneller (1965) formulated the creative process as first-insight, preparation, incubation, illumination, and verification (see Lawson, 1997: 151). In short, process will focus on how a person pursues a creative-oriented activity sequentially.

**Press.** Press may be considered as a motivating situation. In this sense, press may appear as a situation that encourages someone to bring out the creative potency. According to this, Altier ([http://www.winstonbrill.com/bril001/html/article\\_index/articles1\\_50.html](http://www.winstonbrill.com/bril001/html/article_index/articles1_50.html)) noted that obstacle(s) is needed as a primary condition towards creativity:

*[But] the creative process does not start until it is first triggered. The trigger the seemingly innocuous events that lead people to say "aha" are everywhere. They are present in the events of the day, in everyday dissatisfactions, and in everyday searches for satisfaction. They are present in thoughts like "Wouldn't it be nice if...?"*

In this sense, the press appears as the important requisite before a person can be creative or undertake a creative action.

**Product.** Product in this sense is the result of the creativity process itself. As Sternberg (as cited in Duch, <http://www.fizyka.umk.pl/publications/kmk/07-Creativity-CIM.pdf>) defines the creativity as the capacity to create a solution that is both novel and appropriate; and Akin and Akin defines creativity is the process that leads to the creation of products that are novel and valuable (Akin and Akin, <http://www.andrew.cmu.edu/user/oa04/Papers/OnProcCreat.pdf>), so it can be concluded that the product of creativity should be something novel, appropriate, and meaningful as well. These three criteria can be useful as parameter in measuring the quality of creative products in achieving a better life in the future.

The phenomenon of creativity in everyday life may vary from time to time; from generation to generation. In fact, the creativity can also obviously be influenced by the advancement of technology. In this sense, the technology may offer several features that can be used in performing the four P's of creativity and, in other hand, shifts the paradigm of the four P's itself.

## THE FOUR P's IN THE TECHNOCULTURAL WORLD

*Students of today think digitally and they are willing to take creative risks with their use of technology. They will need to learn how to apply these powerful forms of technology, in ways that enable them to work creatively, to innovate and develop original outcomes, using other sources ethically without plagiarising or meaning harm to others. **Gast, G. "The place of ICT in enhancing creativity"***

Within the discourse of technocultural society, there is a cyborg (Cybernetics Organism) which is presented as a metaphor of the situation of contemporary society who are used to live with the machine, and are depending their life in the machine functionality (see Løvlie, 2006: 4). In the recent everyday life, there are a lot of examples which represent the contemporary cyborg where, for instance, the existence of home is being replaced by e-mail or by the testimonial in the friendster.

In accordance with creativity, the cyborg has the potential to see the opportunity in manipulating the technology as a support to the creative activity. Loveless (as cited in Jones, 2004: <http://www.aare.edu.au/04pap/jon04499.pdf>) noted that a characteristic of creativity with digital technologies would be the recognition of the potential of the features of ICT to be exploited and experimented with to support creative processes. In short, the creativity in the digital age will mostly deal with the process on how people gather, process, and publish the idea.

Specifically, the digital age provides the technology that offers possibilities for people in exploring:

1. the source of basic creative idea
2. the methods as well as approaches of the creative process that are appropriate with the expected quality and visualization
3. the media for creative idea publication or production

Several years ago, these three possibilities were hard to find as the computer performance and its support were very limited. Nowadays, people can do almost anything with computer. Moreover, the computer with an internet connection makes the idea exploration becomes unlimited. Beside the idea exploration, the power of computer graphics makes the idea manipulation works easier. With the support from software with a large numbers of its variants, a computer graphics can support the work from photo retouching to vector image manipulation with best resolution quality. In the context of creating an artwork, this situation makes everybody

possesses the same opportunity. Amazingly, even a newbie (a beginner in computer) can produce an artists-quality work, and can have an equal appreciation in a prestigious event. From a brief study, the press for the creative process in this computer era is on the effort in learning and adapting the software tasks and environments. Mastery in software operation becomes a must before winning the competition in the digital age. The more advance a user in software operation, the easier for him/her to generate and manipulate ideas, the bigger chance to deliver creative products and win the competition. In this sense, choosing the right method and approach in producing the creative work with computer software is vital. The chance to publish the work in the digital age is also opened wide. Currently, there are numbers of online gallery that can be visited by anyone, anywhere, anytime. Moreover, this online gallery can be a retail showcase, and someone can make money from each works over online transaction.



Figure 1. Sample of Vector Illustrations  
([www.ndesign-studio.com](http://www.ndesign-studio.com))

Below are the samples of computer support to the creative activities in two dimensional works: Another example of the computer support for the creative activity is generative art. Generative art is developed through combining several principles of art, science, and technology. The website of generative.net delivers two definitions that may reveal the conception of the generative art:

*Generative art is a term given to work which stems from concentrating on the processes involved in producing an artwork, usually (although not strictly) automated by the use of a machine or computer, or by using mathematic or pragmatic instructions to define the rules by which such artworks are executed.*  
**Adrian Ward**

*Generative art refers to any art practice where the artist creates a process, such as a set of natural language rules, a computer program, a machine, or other procedural invention, which is then set into motion with some degree of autonomy contributing to or resulting in a completed work of art.* **Philip Galanter**



Figure 2. Winners of Fractal Art Contest in 1999 under Abstract Category:  
"Taupensky" by Janet Preslar (Left), "Marblemosaic" by Gergely Kiss (Middle),  
& "Thunderhead" by Damien Jones (Right)  
([www.fractalartcontests.com](http://www.fractalartcontests.com))



Figure 3. Sample of Batik Fractal by Pixel People Project ([www.pxlpplproject.com](http://www.pxlpplproject.com))

Among others, fractal art is a kind of generative art. Fractal itself is a term coined by Benoît B. Mandelbrot, a mathematician. Fractal art is developed from the computer-generated math equation. Similar with a computer programming which starts with the code before acquiring a particular interface, the fractal art begins with math formulations which will eventually be generated by computer to have a perfect fractal delineation.

Although the final works look attractive, some people find it difficult in producing a fractal art, especially for those who unfamiliar with math theory and calculation. However, in some cases, people establish a collaboration consisting mathematician, artist, and computer operator. Such collaboration is an alternative for overcoming the obstacles in fractal art production and for placing a man, with a particular skill, on the right job.

Moreover, some people consider a fractal art as starting idea to be re-manipulated and re-developed as a novel product. Pixel People Project, for instance, initiates a different framework of such creative activity; a work from fractal pattern to batik fractal.

In Indonesia, fractal art is also popular.

This superb work has successfully become evidence that computer-manipulated idea is not always ended in the computer-supported media only, such as vector illustration. It may also be developed into wearable products. This batik fractal is such a best practice of a creative work that cyborg can deliver in the context of both technocultural discourse and creative economy.

## CONCLUSION

Within this technocultural discourse, the cyborg is collaborated with computer and produces a different means in producing a creative product. From the previous discussion, the four P's in technocultural situation might be quiet different from the conventional formulation. Nevertheless, such situation still provides a space for cyborg to maneuver along with this paradigm shift and exploring new possibilities of creative experience.

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