Discussion Paper Series

No. 2010－01

Analysis of the new product development process using the creative cognition approach: A Case study of the Japanese '*shôjo manga*' (girls' comics)

川又啓子（Keiko KAWAMATA）

2010 年 6 月（June 2010）

The Society of
Education & Research
in Management

Kyoto Sangyo University

Abstract

The purpose of this article is to further understand the creators' cognitive processes in content (manga) development. This article focuses particularly on the initial stage of the manga creation process: from ideation to storyboard. In the field of product development, it is said that the decisions made during the early stages lock in 75% to 85% of the subsequent costs for manufacturing and marketing. Although these decisions are regarded as very important, thus far, not much has been done towards further examining them. The analytical framework adopted in this article, the 'Geneplore model' of creative cognition, is introduced after a brief review of the current situation of Japanese manga. A case of well-known female author of Japanese shôjo manga (girls' comics) is analysed using the model. Findings suggest that, she develops her story as suggested by the Geneplore model of creative cognition.

Keywords

product development, content, Japanese manga, comics, Geneplore model

Introduction

In 2002, Douglas McGray uses the term 'GNC (Gross National Cool)' and refers to Japan as a cultural superpower. He states that Japan's global cultural influence has quietly grown. From pop music to consumer electronics, architecture to fashion, and animation to cuisine, Japan looks more like a cultural superpower today than it did in the 1980s, when it was an economic one (McGray 2002).

At a time when the Japanese economy was staggering in the 1990s, a star was born: the Japanese content industry. Over the past few years, it has been attracting considerable attention as the next leading industry. According to the METI (Ministry of Economy, Trade and Industry) report, the market size of the content industry is estimated to be 14 trillion yen (125 billion Euros[1]), which is approximately the same as the Japanese automobile industry estimated at 20 trillion yen (179 billion Euros) (Kawamata 2005a). However, in contrast to the optimistic forecast, most of the segments in the content industry have been on the downward trend since around 1998.

On the consumer front, declining youth population, recession, and rising mobile phone tariffs are often cited as the reasons for this trend. With regard to the suppliers, it is sometimes said that the content environment is too primitive and vulnerable to be termed as an 'industry'. For instance, the infamous, harsh labour conditions in the Japanese animation industry attract even foreign sightseeing tours. It appears that the Japanese content industry does not necessarily have the brightest future; however, it does have a tremendous potential and scope.

John A. Lasseter, Executive Vice President, Creative, PIXAR, said that in animation, story creation is the most important aspect (Harada 2004). It is assumed that one of the most important factors for success in the content industry lies in the power of story creation. From among the many content categories, Japanese manga (comics) has been enjoying a reputation of strong story creation thanks to the late Osamu Tezuka.

This article begins by posing a simple question: if story creation is the most important factor, as stated by Lasseter, then, how are these manga created? Undoubtedly, manga have also been affected by the gradual decline in sales. However, for years, several live-action films have been adapted from manga (Table 1). Although there are some long-selling comics in Japan

[1] Foreign exchange rates used in this paper are as follows: EUR/JPY=112.

that are over 30 years old, more than 700 (or 1,000) manga paperbacks are published every month; moreover, most of them are out of market in a short period of time (NHK BS2 2005b).

Table 1: Live-action films based on manga

Release	Live-action film titles in Japan	Author
2005	NANA (Nana)	Ai Yazawa
2005	Tacchi (Touch)	Mitsugu Adachi
2005	Kashiramoji Dī (Initial D)	Hidekazu Shigeno
2005	ALWAYS 3-chome no Yuhi (ALWAYS-Sunset on the Third Street)	Ryohei Saigan
2005	Onaji Tsuki wo mite iru (The Moon Always Watching Over)	Seiki Tsuchida
2005	Tokyo Zonbi (Tokyo Zombie)	Yusaku Hanakuma
2006	Umizaru 2 (Umizaru 2: Limit of Love)	Shuho Sato
2006	Saishu Heiki Kanojo (She, the Ultimate Weapon)	Shin Takahashi
2006	Warau Daitenshi Mikaeru (Laughing Archangel Michael)	Izumi Kawahara
2006	Gegege no Kitaro (Gegege Kitaro)	Shigeru Mizuki
2006	Damenzu Walker (Damens Walker)	Mayumi Kurata
2006	ES (Eternal Sabbath)	Fuyumi Soryo
	Live-action film titles in the US (dates to be arranged)	
	Kiseiju (Parasyte)	Hitoshi Iwaaki
	MONSTER (Monster)	Naoki Urazawa
	Dragon Ball (Dragon Ball)	Akira Toriyama
	Gunnm (Battle Angel Alita)	Yukito Kishiro
	Rupan Sansei (Lupin the 3rd)	Monkey Punch

Source: Adapted from Abe 2005, p.49.

This article focuses particularly on the initial stage of the manga creation process: from ideation to storyboard. In the field of product development, it is said that the decisions made during the early stages lock in 75% to 85% of the subsequent costs for manufacturing and marketing (Dahl and Moreau 2002). Although these decisions are regarded as very important, thus far, not much has been done towards further examining them. Thus, it is considered valuable to examine the creative process of those long-selling, popular authors and obtain suggestions for content development.

In the following sections, the analytical framework adopted in this article, the 'Geneplore model' of creative cognition, is introduced after a brief review of the current situation of Japanese manga. Cases of well-known authors of Japanese *shôjo manga* (literally 'girls' comics', but, in reality, female-oriented comics) are analysed using the model.

Manga, Japanese comics[2]

According to the *Shuppan Shihyo Nempo 2006* (Publishing Indices Annual 2006), in Japan, the total sales of all publications in 2005 were 2.2 trillion yen (20 billion Euros), down 2.1% year-on-year (y-o-y). The manga market (total of periodical magazines and paperbacks), garnering nearly a quarter (22.8%) of the total market share, was estimated to be 502 billion yen (4.5 billion Euros), down 0.5% y-o-y. This represents unit sales of 1.3 billion (down 0.26% y-o-y): 544 million units of paperbacks (up 4% y-o-y) and 805 million units of magazines (down 6.5% y-o-y). This amounts to 37.4% of the total units of all publications sold in Japan.

[2] For further details on Japanese manga, please refer to Matt Thorn's website. 24 February 2007 <http://www.matt-thorn.com>

Given that in July 2006, the Japanese population was an estimated 127 million, it would not be difficult to imagine the magnitude of the manga market in Japan. The latest mega hit of shôjo manga, *NANA* (Nana), recorded 15 million unit sales in 2005; and it has accumulated 32.1 million unit sales since the first volume was published in 2000. Needless to say, the most successful manga authors are multi-millionaires.

In comparison to the huge Japanese market, its overseas equivalents are relatively smaller in size. The overseas manga sales in 2002 were an estimated 48 billion yen (429 million Euros) with France 84%, U.S. 10%, and Germany 6% respectively (Kawaguchi 2003).

One of the characteristics of Japanese manga is that almost 90% of manga authors are categorized as *Tezuka-kei* (Tezuka style). The late Osamu Tezuka, known as the 'God of manga' in Japan, exerted great influence on his successors. His works are story-oriented and labelled as 'story manga'. Hence, it is quite natural for *Tezuka-kei* manga authors to follow his style, and story creation is considered to be one of their strengths. Two television documentaries on the shôjo manga by NHK (Japan Broadcasting Corporation) featured popular Japanese female manga authors who created the golden age of manga in the 1970s and 1980s (NHK BS2 2004, 2005a, 2006). It does not come as a surprise that 11 out of 12 authors admitted to Tezuka's influence on their career and creation style. Hence, it follows that story creation is considered to be a critical factor in the making of Japanese manga.

This article does not focus on the anecdote of a genius. Instead, it focuses on the process of manga creation: from input, or ideation to output, or finalized work. It does not assume personal traits as the most important element in creativity, either. Moto Hagio, a famous *Tezuka-kei* Japanese female manga author, made an interesting comment on story creation. When asked to provide tips on story creation, she referred to academic writing. According to her, the logic used in academic writing is helpful and applicable to manga creation (Hagio 1998). This suggests that the creation of a manga is not limited to merely drawing pictures; instead, it also requires logical thinking in order to write good stories.

The following sections introduce creative cognition and the Geneplore model as well as analyse how manga authors create their work.

Creative cognition

People tend to regard creativity as something mysterious and considerably awesome which is gifted to only a limited few. Smith, Ward and Finke (1995a) stated in their preface that written work on creativity often lacked scientific rigour, and as a result, many cognitive scientists perhaps viewed creative cognition as being unrealistic or unresearchable. In one of the product development textbooks, the author states that the creativity, which is required in business is different from the one required in arts. This statement needs to be further analysed.

In the field of marketing and consumer behaviour, Moreau and Dahl (2005) claim that the creative cognition approach is appealing because this perspective enables the well-developed traditional concepts in cognitive psychology, such as encoding/retrieval and analogical thinking, to provide the basis for understanding creative thought. It rejects the idea that 'extraordinary forms of creativity are the products of minds that operate according to principles that are fundamentally different than those associated with normative cognition' (Ward, Smith and Finke 1991, p.191). As such, creative and non-creative thinking can be conceptualized along a continuum without a solid boundary delineating the two.

Although these comments may appear to demystify creativity, they do not intend to minimise or degrade the power of creativity. Smith, Ward and Finke (1995a) claim that mental processes are considered to be the essence and the engine of creative endeavours. Further, there are many other useful and productive approaches that can be used to understand

creativity; no single creative process has been identified as the right one. The creative cognition approach focuses on the cognitive processes and structures that underlie creative thinking.

In marketing and consumer behaviour, there are only a few articles which deal with the creators' cognitive aspects in product development. Dahl, Chattopadhyay and Gorn (1999) examined the manner in which visual imagery influences the production of more creative products. Goldenberg, Mazursky and Solomon (1999) derived a framework, termed 'templates', which is a facilitator for replicable new product ideation. In Dahl and Moreau (2002), analogical thinking was introduced in the context of new product development. Moreover, in Moreau and Dahl (2005), the Geneplore model, which will be later discussed in this article, was employed to detect the effects of input and time constraints on consumer creativity.

These experiments have contributed to an uncultivated field of product development in marketing. In actuality, however, it is difficult to imagine that only one of the cognitive strategies is used to generate ideas or develop a concept. In order to better understand the creative process, an integrated model that describes the whole process should be examined.

Geneplore model

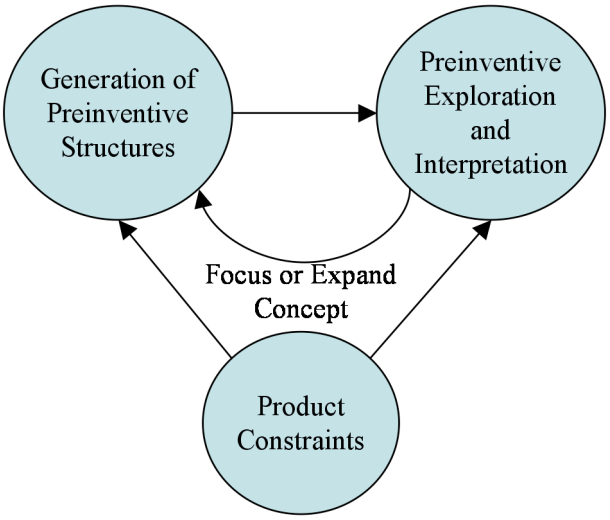
The creative cognition approach (Finke, Ward and Smith 1992) intends to improve and optimise creativity. It distinguishes between generative and exploratory processes in developing creative ideas (Figure 1). In the initial stage of a creative task, generative processes are thought to be used for creating preliminary mental representations of a solution, termed 'preinventive structures' that serve as a precursor to the final product. Generative processes, such as retrieval, association, mental synthesis, mental transformation and analogical transfer, give rise to preinventive structures. They may consist of mental images, verbal combinations, category exemplars or mental models.

Preinventive exploration begins once a preinventive structure has been generated. Subsequently, people search for different meanings to attach to and/or to interpret the rudimentary solution. These exploratory processes include attribute finding, conceptual interpretation, functional inference, hypothesis testing and searching for limitations. Once these exploratory processes are completed, the preinventive structure can be refined or regenerated, depending on what is discovered during the exploratory phase.

As indicated in Figure 1, creative processes involve cycling between generation and exploration, with the preinventive form being altered and updated after each cycle until a satisfactory product is achieved. This cycle, referred to as the 'Geneplore cycle', is then repeated until the structure is developed into a finalized product. At any point in the Geneplore cycle, constraints can be imposed onto the generative and exploratory phase to restrict the nature of the final product. These include constraints on time, the type of products, the general category to which it belongs, the features it possesses and the functions it can have (Finke 1995, p.322-323).

There may be an infinite number of methodologies to generate ideas and create comics. A number of environmental or individual factors may also exist. Yet, in order to better understand how manga authors generate ideas and develop them into final products, this article employs the Geneplore model of creative cognition to examine the creative processes. However, in the actual business scenario, being creative is necessary, albeit not sufficient. The creative ideas and thoughts must be developed into commercially viable products. Thus, the concept of 'creative realism' is briefly discussed in the next section before delving into specific case studies.

Figure 1: Geneplore model



Source: Finke, Ward and Smith 1992.

Creative realism

Finke (1995) considers creative realism as the next step in the creative cognition approach. Creative realism refers to the study of creative ideas that deal with realistic issues or realistic ideas that have creative potential. Finke asserts that creativity should consist of more than just new ideas or wild imagination; it should also have realistic and enduring consequences. Therefore, it is necessary to distinguish between unproductive and productive creativity for creative cognition. Thus, in creative realism, one attempts to combine the best of both worlds: to develop ideas that are not only original and inspiring but also likely to have a genuine impact on actual problems, needs and values.

According to Finke (1995), creative realism has two major themes: structural connectedness and imaginative divergence. To achieve creative realism, it is necessary to have a certain amount of continuity between old and new ideas: structural connectedness. In order to be realistic, creative ideas need to be structured; moreover, that structure should have essentially evolved from previously established ideas and principles. Further, in Finke's view, in order to be practically creative, innovation or invention must not be regarded as a creative leap, but instead as an incremental process.

The second theme is that ideas in creative realism must also exhibit inspirational qualities that excite the imagination and lead to meaningful exploration. This is referred to as imaginative divergence. It distinguishes genuinely exciting and innovative ideas from those that appear sensible and realistic but are unproductive. Imaginative divergence promotes that which has been referred to as divergent thinking, wherein one explores unconventional possibilities, associations and interpretations (Finke 1995, p.303-305).

In the context of product development in business, it is necessary to have some kind of a system that facilitates and encourages continuous creativity; thus, incremental innovation is valued. However, Finke warns that an excessive adherence to prior knowledge results in 'conservative realism'. Therefore, merely having knowledge is not sufficient; one must use that knowledge in unconventional ways to produce creative thoughts.

Since this article deals with manga, which has a huge market in Japan, a manga author's creative process has been analysed using creative cognition, taking creative realism into account.

Case study: Yasuko Aoike, *From Eroica with Love*

Yasuko Aoike was born on 24 July 1948 in Shimonoseki, Yamaguchi Prefecture, which is located at the western end of Honshu Island in Japan. She made her debut in *Ribbon Magazine* with *Sayonara Nanetto* (Goodbye, Nanette) when she was only fifteen years old. Introduced in 1977, *Eroika yori Ai wo Komete* (From Eroica with Love) was a bestseller (31 Japanese volumes from 1977 to 2005), and it is still being serialized. In 2004, Eroica's English version was published in the US.

From Eroica with Love follows the adventures of a British aristocrat, Dorian Red, Earl of Gloria, who moonlights as an international art thief using the alias 'Eroica' and his opposite number, a German NATO intelligence agent named Major Klaus Heinz von dem Eberbach. Dorian leaves notes behind at the crime scene signed 'From Eroica with Love' (http://www.eroicafans.org/).

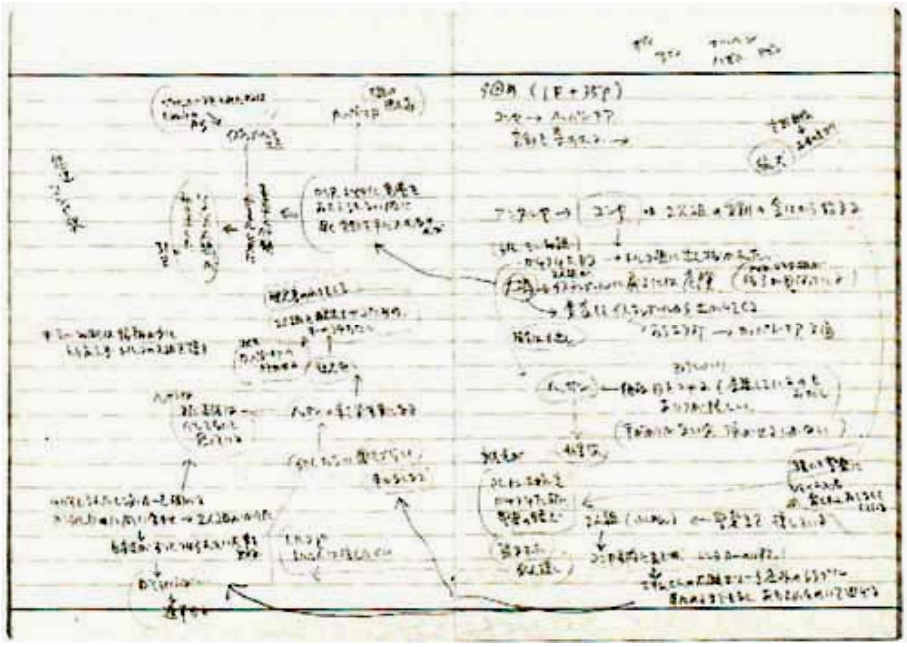
The initial process of creating Eroica[3]

Aoike's creation process pertaining to Eroica involves the following five steps: (1) plot, (2) revised plot, (3) script, (4) storyboard and (5) finished work (Aoike 2005, NHK 2005a).

(1) Plot

One week after the deadline of the previous episode, Aoike holds a meeting with her editor regarding the next episode. Such meetings take about three to four hours in a casual setting such as a coffee shop. At the initial idea generation stage, she is loyal to her interests and the story is sketchy. The meeting resembles a brainstorming session, but at times, the idea is immediately judged; the story of a psychic, one of Aoike's original ideas for Eroica was rejected in the beginning. She is also informed of the feedback from fans. It is indicated that Aoike's idea generation process begins rather interactively. She makes a note of all the ideas that have been discussed at the meeting on her B6-size notepad (Figure 2).

Figure 2: Plot



Source: Aoike 2005, p.113.

[3] This part is based on Aoike (2005) and NHK BS (2005b).

(2) Revised plot

In Aoike's story creation process, she carries out steps (2) to (4) by herself. Aoike scrutinizes each plot, (1) above, and revises it to make it consistent. When this plot extends across approximately 34 pages of manga (one serial of monthly manga), she begins considering new ideas. The next step, i.e. writing a script, is conducted approximately two days later. In 'Yomikiri, (one-shot manga)', or two-volume story, the story line is decided upon in detail, even before the creation process begins. Contrarily, in long serialisations, only a rough plot is determined and the details of each episode are created as the story progresses.

(3) Script

Aoike transcribes the revised plot, (2) above, into a script. She writes down every single conversation and actions of the characters after visualizing the images of the scenes in her mind. During this process, she creates and recreates the stories. She attempts to generate ideas, sequentially, in a manner described as 'imozuru shiki (sequentially)'. At times, even a whim can be expanded into an organized story. Ideas generated in one story can also be transformed and used in another story at a later time. Thus, even at this stage, if different ideas emerge, Aoike changes the theme. Eventually, this leads to her editor's astonishment, 'Konna tenkai ni nattan desuka?' (Was the plot developed in this manner?). After completing the script, she sets it into 34 pages of manga. Searching for necessary information, she attempts to improve the script over the next two or three days. The script consists of four pages (Figure 3).

Figure 3: Revised plot and Script

Source: Aoike 2005, p.114-115.

(4) Storyboard

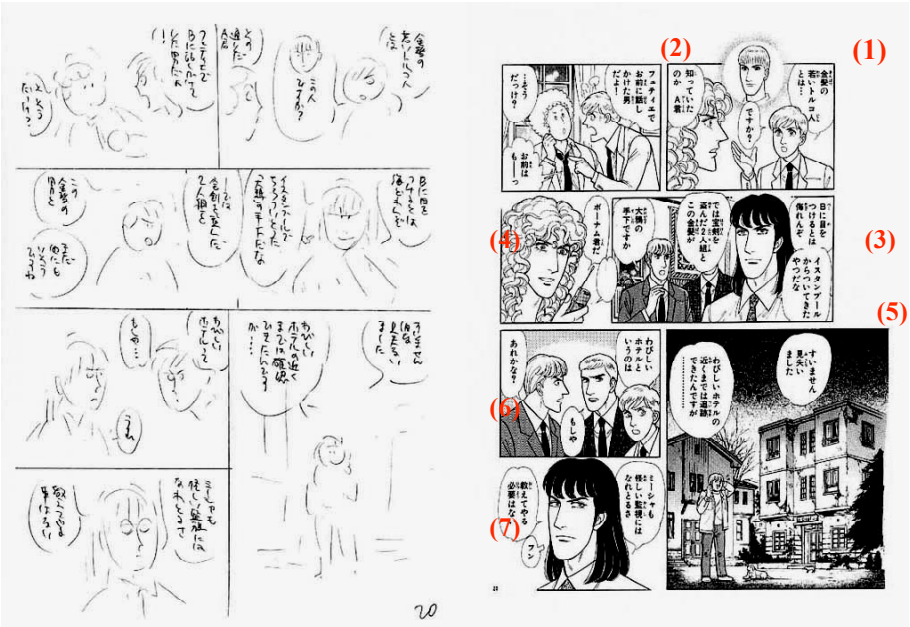
For manga authors, creating a storyboard, or 'nêmu', is the most rigorous part of the process, and Aoike is no exception. Based on the revised script, (3) above, she puts all the images in her mind into frames on the storyboard, or 'koma wari'. It takes three to four days to complete the storyboard (Figure 4).

(5) Finished work

Upon completion of the storyboard, she draws a rough draft. Even at this stage, prior to finalization, she may decide to change the placement of certain frames or the entire storyboard itself. Thereafter, her assistants join in to help her complete the work (Figure 4).

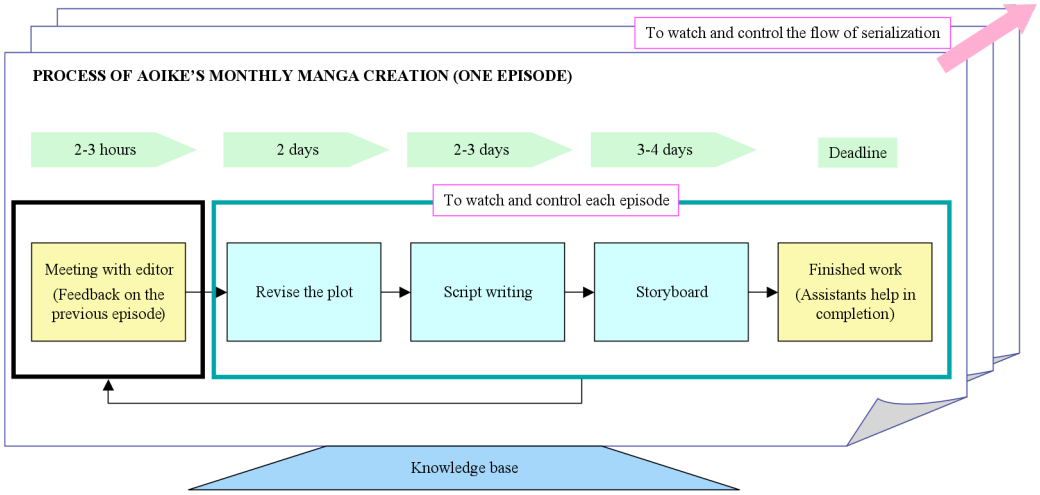
Figure 5 summarizes the creation process of one episode by Yasuko Aoike. The green arrow-shaped boxes in the middle indicate the passage of time. The yellow boxes indicate the other people's contribution to the process, i.e. her editor and assistants. Within the green frame (under 'To watch and control episode'), Aoike's individual creation process from the plot to the storyboard is depicted. Throughout the process, she individually scrutinizes and controls each episode. The pink arrow at the upper right-hand corner indicates the sequence of episodes. During this phase as well, she scrutinizes and controls the flow of the story. This cycle is repeated every month. The blue trapezium at the bottom indicates that Aoike's manga creation is based on her solid knowledge base.

Figure 4: Storyboard and Finished work



Manga is usually published in the Japanese right-to-left format. The page above begins with (1) (upper right-hand frame) and follows from (2) to (7). Each character's lines read vertically from right to left.
Source: Aoike 2005, p.116-117.

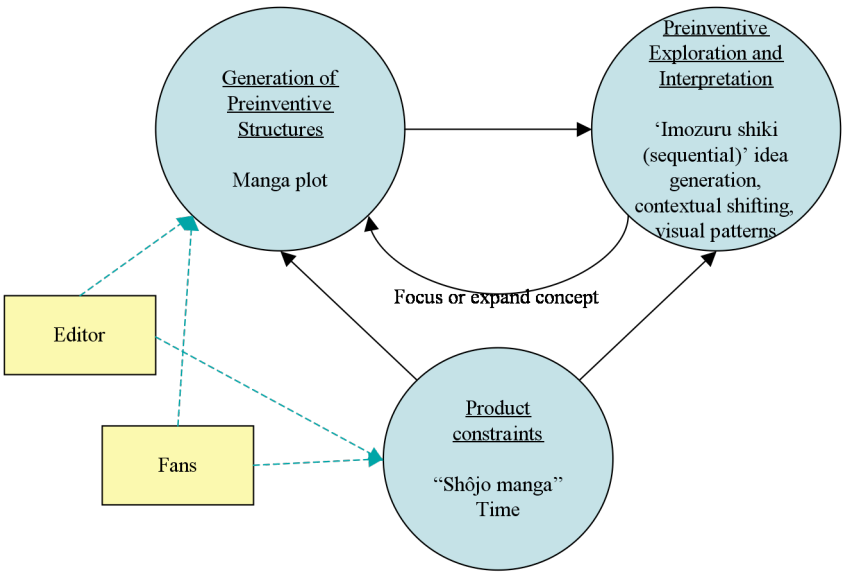
Figure 5: Process of Aoike's Manga creation (monthly)



Analysis of Yasuko Aoike's creation process using the Geneplore model

At the initial stage of idea generation, 'Generation of Preinventive Structures' of the Geneplore model (Figure 6), 'retrieval' from her knowledge database and 'association' of the retrieved ideas occur. All ideas or thoughts that are generated in the meeting with her editor are written down, regardless of their meaning. Her plot has the properties of preinventive structures, divergence and ambiguity. Arrows are drawn when a connection between the ideas is found, and the direction of the story is roughly determined. In terms of creative realism, when she initiates a new story, she follows shôjo manga's tones and manners, which could be considered as a preinventive structure. In serialization, the new episode follows the old one, and thus, structural connectedness is maintained.

Figure 6: Geneplore model (Yasuko Aoike)



Before her assistants complete the work, Aoike undergoes other cognitive processes during the stage of plot revision through to storyboarding: exploration and interpretation of preinventive structures. The plot is considered as one of the preventive structures, and she explores and interprets the ideas sequentially ('Imozuru shiki'). Throughout the process, her cognitive process shows the 'imaginative divergence' of creative realism. Visual patterns and

contextual shifting occur during the preinventive exploration and interpretation stage. She places and shifts the leading characters within the various contexts in her mind. Subsequently, she 'focuses and expands' her ideas until the story is completed.

The next step in the process is storyboarding. Storyboarding is considered to be the most rigorous aspect of the entire process. At this stage, Aoike finally draws rough pictures on the storyboard. Not only Aoike but also other story-oriented manga authors write words before drawing pictures. They clarify that the visual patterns and images are in their mind while writing the script (Kawamata 2005b). The influence of language on creativity is mixed; at times, it constrains creativity and promotes it at the other times. Some contend that visualizations help in exploring new approaches towards solutions in the problem-solving context (Finke, Smith and Ward 1992). It is interesting to examine whether language facilitates creativity more than visualization, or vice-a-versa, in the creation of manga as well as the manner in which it does so.

As illustrated in Figure 6, in the Geneplore model, the Geneplore cycle between generation of preinventive structures, and preinventive exploration and interpretation continues during the expanding or focusing of the concept, until the completion of the product. Aoike's creation process also moves between the generation and exploration phases. Furthermore, as previously stated, she dares to change the story whenever new ideas or concepts emerge. This process continues within the time constraint, until the deadline approaches.

In Moreau and Dahl (2005), some constraints facilitate the consumer's creativity. While time is sometimes a constraint for creativity, at times, it can also act as a facilitator. Expert knowledge may or may not enhance creativity (Smith, Ward and Finke 1995b). If it is contained too much, structural connectedness of creative realism could also become creative conservatism. Given the ambivalent nature of the properties of product constraint in the Geneplore model, the tones and manners of shôjo manga are considered to constrain Aoike's creativity. However, at the same time, they also serve as a structure to facilitate creativity. Fans are moderately enthusiastic about a surprising story. The story of a psychic was considered to be extremely difficult for shôjo manga at that time and was rejected at the outset. Unless there is a time constraint, nothing will materialize. Yet, if there is plenty of time on hand, more creative and complete artwork could be possible. In business, however, except for a very limited number of authors, deadlines should be maintained. Product constraints, as a facilitator of creation should be examined further.

The Geneplore model of creative cognition describes the mental process of creators. However, in manga creation, it is practical to assume that the interaction with the editor and fans plays an important role in the process. Criticism from the editor as well as feedback from the fans could restrict creation; however, it could also greatly motivate authors to keep writing. In order to maintain the Geneplore cycle, the creation of manga requires interaction with someone who can support the project. Creating a manga is an individual effort, but the whole creative process is rather interactive in nature.

Use of existing knowledge

When Aoike is required to provide tips for manga creation, she advises sensitivity to the surroundings; moreover, she suggests that attempts be made to capture ideas from other content domains such as films, television programmes and newspapers. She describes her situation as if the devices of idea generation and exploration are always ready to work at a subconscious level. Further, training in story building is also an important aspect. She attempts to predict the stories of films and books whenever possible. If the story develops unexpectedly, ends surprisingly or provides detailed descriptions of the subject skilfully, she memorizes them and later makes notes. Good films and novels are important sources of information and help improve sensibility.

In general, shôjo manga may not be considered highly in the Japanese society, but in order to create a good story, it is essential to gather an enormous amount of information on the subject matter. Aoike asserts, '99% no shinjitsu to 1% no uso' (99% of fact and 1% of fiction) is important. Even though it is manga, Aoike respects the subject matter; hence, she attempts to search for facts and correct information as much as possible. For example, in Eroica, she refers to scholarly books about medieval monasteries in Europe, which are unfamiliar in Japan. In order to gather material, visiting Europe and interviewing experts are essential. She always attempts to enhance her knowledge base.

Based on knowledge, new ideas may come to mind. In view of creative realism, her knowledge base creates and enhances the structural connectedness of her manga. Imaginative divergence originates from this knowledge base. She emphasizes that creating manga in one's own way follows next. 'Kenrô na Sôsaku Sekai', (a solid creative world) can be built on 'Tenuki no nai Kiso koji (solid foundation work)' (Aoike 2005, p.171-182). This leads to her belief that '99% no shinjitsu to 1% no uso' (99% of fact and 1% of fiction) is important in manga creation.

As is evident in Aoike's case, knowledge base is a prerequisite of creativity in creative cognition. Yet, as Smith, Ward and Finke concluded in their book, there are many mixed research results on creative cognition. For example, although prior knowledge is usually needed for creative cognition it is equally necessary to do things in a new way. At times, expert knowledge causes fixation and hampers creative thinking. Smith, Ward and Finke state that distinguishing between the situations in which prior knowledge must be used and those in which it should be rejected continues to be an important issue (Smith, Ward and Finke 1995b, p.331).

Character-oriented manga creation

The latest mega hit of shôjo manga, *NANA* (Nana), is described as a character-oriented manga i.e. the characters overshadow the story. Although it appears to be a recent trend, in fact, Machiko Satonaka, one of the contributors to the golden age of shôjo manga, had already adopted the character-oriented manga creation thirty years ago. In *Ariesu no Otome tachi* (Ladies of Aries), she decided not to give any consideration to the story; instead, she began the serial with context setting and characters (NHK BS2a). Although she emphasized that the story is very important and considered herself to be a strong story-teller, she changed her style after she got divorced and hospitalized due to hard work. Yasuko Aoike, in the same generation as Satonaka, commented that Satonaka is probably the first female manga author who established her own studio in order to streamline the manga producing system and to realize mass production (Aoike 2005, p.120). Satonaka invented *Satonaka shiki kosei hyo* (Satonaka's structure-building grid) (Figure 7). Characters are first created and placed in the column, and then, various contexts are set in the story line. Thereafter, each character is allocated in each context accordingly. By using her structure-building grid, structural connectedness is invariably attained. In Satonaka (1991), she introduced this grid to manga beginners to check and achieve the balance of the whole story.

Another example of a character-oriented manga is a male author, Takao Saito. He is a pioneer of the manga production system and established his own studio Saito-Production Co. in 1960. He introduced *Golgo 13* (Golgo 13) in 1968, which has sold 250 million units (including pocket and related books) since the first edition. According to Saito, he came up with about 10 patterns of stories at the inception stage and thought that the serial was to end in 10 episodes (TV Tokyo 2007). Golgo 13 is a product of team work. More than 40 original writers, and experts from different fields, have been involved in Golgo 13 until date. From the perspective of creative realism, the power of the charismatic leading character, Duke Tôgô, connects each member's creation and gives a structure to the story. Saito commented that not

even a single story until date has depicted Golgo 13 in exactly the same manner that he has in mind. Thus, he always revises his work to some extent in accordance with his image of Golgo 13.

This article does not intend to compare story orientation with character orientation. In order to make mass production possible, team creation may have more potential. However, team creation may require a lot of communication efforts to retain the tone and manner of the manga. How creative cognition or creative realism could work in collective creativity remains an interesting topic.

Figure 7: Satonaka's structure building grid

Source: Satonaka 2005.

Limitations and further research

The purpose of this article is to further understand the creators' cognitive processes in content (manga) development. Findings suggest that Yasuko Aoike, a long-selling manga author, develops her story as suggested by the Geneplore model of creative cognition. Her creative

process also displays the two properties of creative realism: structural connectedness and imaginative divergence.

As this article covers only a single case study, generalization of the findings is restricted. Hence, empirical validation should be conducted in the future. Another limitation is that secondary data has been used for the analysis. Needless to say, there are many other useful ways to approach and analyse creativity. Thus, in order to better understand and enhance creativity in content development, various perspectives should be examined.

Acknowledgements

The financial support from Kakenhi (Grants-in-Aid for Scientific Research) is gratefully acknowledged.

References

Books and journals

Abe, Shinobu 2005. "Manga Jisshaka ga tomaranai! (Making manga into live-action film never ends!)." *Nikkei Entertainment!*, October, p.48-53.

Aoike, Yasuko 2005. "*Eroika yori Ai wo Komete" no tsukuri kata* (How to create *From Eroica with Love*). Tokyo: Magazine House.

Dahl, Darren W., Amitava Chattopadhyay and Gerald J. Gorn 1999. "The Use of visual mental imagery in new product design." *Journal of Marketing Research*, Vol.36, February, p.18-28.

Dahl, Darren W. and Page Moreau 2002. "The Influence and value of analogical thinking during new product ideation." *Journal of Marketing Research*, Vol.39, February, p.47-60.

Finke, Ronald A., Thomas B. Ward and Steven M. Smith 1992. *Creative cognition: Theory, research, and applications*, Cambridge, MA: The MIT Press.

Finke, Ronald A. 1995. "Creative realism." In *The Creative cognition approach*, Steven M. Smith, Thomas B. Ward, and Ronald A. Finke, eds., Cambridge, MA: Bradford Books, p.303-326.

Goldenberg, Jacob, David Mazursky and Sorin Solomon 1999. "Toward identifying the inventive templates of new products: A Channelled ideation approach." *Journal of Marketing Research*, Vol.36, May, p.200-210.

Hagio, Moto 1998. *Omoide wo Kirinuku toki* (On clipping memories). Tokyo: Anzu do.

Kawamata, Keiko 2005a. "Data: Current status of the Japanese content industry" *Kyoto Management Review*, n° 7, June, p.107-132.

Kawamata, Keiko 2005b. "Analysis of New Product Development Process by the Creative Cognition Approach: Cases of Japanese Girls Comics (Shojo Manga)." *Kyoto Management Review*, n° 8, December, p.41-69.

Moreau, Page C. and Darren W. Dahl 2005. "Designing the solution: The Impact of constraints on consumers' creativity." *Journal of Consumer Research*, Vol.32, June, p.13-22.

Smith, Steven M., Thomas B. Ward and Ronald A. Finke, eds. 1995a. *The Creative cognition approach*, Cambridge, MA: Bradford Books.

Smith, Steven M., Thomas B. Ward and Ronald A. Finke 1995b. "Paradoxes, principles, and prospects for the future of creative cognition." In *The Creative cognition approach*, Steven M. Smith, Thomas B. Ward, and Ronald A. Finke, eds., Cambridge, MA: Bradford Books, p.327-335.

Thorn, Matt. 2001. "Shôjo manga--Something for Girls." *Japan Quarterly*, July-September, p. 43-50.

Ward, Thomas B., Ronald A. Finke and Steven M. Smith 1995. *Creativity and the mind*, Cambridge, MA: Perseus Publishing.

White papers

Joho Media Hakusho 2006 (Whitepaper on Information and media). Tokyo: Dentsu.

Shuppan Shihyo Nempo 2006 (Publishing Indices Annual 2006). Tokyo: The Research Institute for Publications.

Electronic sources

"A New manga imprint in October." (22 June 2004) 20 June 2010 <http://www.animenewsnetwork.com/press-release/2004-06-22/dc-comics-launches-cmx-in-october>

"From Eroica With Love." 20 June 2010 <http://www.eroicafans.org/>

Harada, Yasuhisa. "PIXAR no himitsu (Secret about PIXAR)." Yomiuri On Line (11 May 2004) 26 November 2005 <www.yomiuri.co.jp/entertainment/ghibli/cnt_pixar_20040511.html>

McGray, Douglas. "Japan's Gross National Cool." Foreign Policy (2002) 20 June 2010 <http://www.chass.utoronto.ca/~ikalmar/illustex/japfpmcgray.htm>

Thorn, Matt. "A History of Manga." 20 June 2010 <http://www.matt-thorn.com/mangagaku/history.html>

Saito Takao, "Gekiga on the Web!" 20 June 2010<http://www.saito-pro.co.jp/english/index.htm>

Satonaka Machiko Official Site. 20 June 2010 < http://www.satonaka-machiko.com>

Yasuko Aoike Official Web Site. 20 June 2010 <http://www.aoikeyasuko.com/index2.html>

Visual sources

Disney and PIXAR. *Monster, Inc.* DVD. Buena Vista Home Entertainment, 2005.

NHK BS2. *Shôjo manga no ôgon jidai: sakusha ga kataru meisaku no himitsu* (The Golden Age of shôjo manga: Secret of the masterpiece (Interview with authors)). 27- 29 April 2004 (authors: Riyoko Ikeda, Yukari Ichijo, Moto Hagio).

NHK BS2a. *The Shôjo manga!: sakusha ga kataru meisaku no himitsu* (The Shôjo manga: Secret of the masterpiece (Interview with authors)). 3-5 May 2005 (authors: Suzue Miuchi, Yoko Shoji, Yasuko Aoike), 29-31 August 2005 (authors: Eiko Mizuno, Satoru Makimura, Minako Narita), 23-25 January 2006 (Keiko Takemiya, Machiko Satonaka, Toshie Kihara).

NHK BS2b. *Manga no gemba* (manga studio). 30 July 2005.

Satonaka, Machiko. NHK. *Satonaka Machiko no Comic Jitsugi Koza* (Satonaka Machiko's practical manga lessons). NHK. 1991. DVD. Koike Shoin, 2005.

TV Tokyo. *Manga wo business ni kaeta otoko!* (A Man who changed manga to business). 26 February 2007.