

Poietiques-based methods of self-investigation during the creative processes of design

Koutaro Sano, Yukari Nagai* and Toshiharu Taura **

* *Japan Advanced Institute of Science and Technology, Japan, {skoutaro, ynagai}@jaist.ac.jp*

** *Kobe University, Japan, taura@kobe-u.ac.jp*

Abstract: In the process of designing, it should be noted, the observation of the creative process from an inner perspective is difficult when one is deeply engaged with the work. Observing the creative process can broaden our understanding and provide us with significant knowledge about creativity. The aims of this study are to propose methods of self-investigation when one is engaged in the creative process, and to examine these methods. We propose the basic framework of such self-investigation methods, apply these methods to a designer and outline the criteria required. Moreover, we show a case study that was conducted wherein a designer researched the proposed method. Our method has nine steps and is based on three reports: first, a designer's; second, an art researcher's; and third, the designer's again. We assessed the reports by analyzing their structures. We could find evidence to verify the effectiveness of our proposed method.

Key words: *Creativity, Creative design process, Self-investigation, Research methodology, Flow.*

1. Introduction

Our study aims to clarify the features of the creative process that contribute to our comprehension and knowledge of human activity. This study analyses the features of the creative process in design and proposes a method to capture the dynamics of this process from the designer's inner perspective. The issues to be discussed are associated with self-investigation. First, it should be noted that the observation of the creative process from an inner perspective is difficult; as proposed by the psychologist Csikszentmihályi [1], this is due to the fact that a designer, typically, is deeply engaged with work, mentally absorbed in the "flow" condition, and this makes it difficult for him/her to track and report exhaustively on his/her own activities. "Flow" refers to the mental state in which a person is fully immersed in what he or she is doing—a state of energized focus, full involvement, and devotion toward success in a given activity. In particular, "self-oblivion" in psychology (that is, "a loss of the feeling of self-consciousness, the merging of action and awareness") is a typical feature of the flow condition. This limits a designer's self observation, particularly when he/she is in a highly creative situation. Thus, finding a way to capture a designer's activities from his/her own inner perspective, in a highly creative situation, is the central issue of this study.

Concerning this issue, a significant study about the self reflection undertaken by practitioners was conducted by Schön [2]. His study proposed ways for practitioners to gain precise explanations of their creative activities from their own introspections, by looking back at the time when they were engaged in work. Schön provided a framework and models of reflective practice to describe these processes; Schön's framework was applicable to design, and was able to translate theory to action for the benefit of educators.

There is another important study that is closely related to our subject; this is the study on "poietiques." "Poietiques" was developed by René Passeron (1920-) [3]. According to him, creative work exists in a dynamic

tension between two realms (the self and the world). These realms are understood by a person (the creator) simultaneously and undividedly, as a fact.

In this study, we aim to discuss how a creator (a designer) can describe his/her own creative process from an inner perspective (namely, the first person's voice); moreover, we introduce a new method to address our objectives. First, we review previous studies and methods of description. Second, we propose a new framework that assists in the self-investigation of a designer's creative process. Third, we report a case study that was conducted with the intention of developing a method based on poietiques to describe the creative process undergone by a designer. Next, we analyze the results of the self-investigation described in the case study. Finally, we evaluate our proposed methods and offer our views on the possible direction of future work.

2. Literature Reviews on studying the creative process

We have surveyed previous studies on the creative processes in order to estimate and frame the central issue of this study. We quote a number of studies on art creation processes because these are good examples of activities that are deeply related to highly creative situations: art creation processes manifest the "flow" that was addressed as a concept at the beginning of this paper.

2.1. Cognitive processes

A method to capture the creative process has been developed by adopting a third person's voice, as obtained by observation from an outer perspective. A scientific description follows a similar style.

A long term observation of the creative process undergone by an artist has been carried out in a case study in order to classify the interactions with different time spans during the process [4]. Conducting interviews, the researchers recorded the explanations offered by two artists while they were in the midst of creative processes. They spoke about the processes of art work on the basis of the classification of the latter into three types of time spans (expression methods, meta-concepts, and visions of creation); further, they discussed how new expressional methods are being developed by artists, by focusing on the contemporary rhetoric. In the same vein, Yokochi and others [5] performed a qualitative analysis of artists' notes, and with the aid of interviews, strove to clarify the "visions of creation," and the process of developing expertise. These studies reported on the important features of creative activities; people engaged in art work formed the subject group of this analysis. These studies were conducted from outside the creative process and were described in the third person's voice by the experimenters. The results of these studies were not related to the themes of the artists' works. The artists who were observed did not associate with the research.

2.2. Collaborative participants' report

On the other hand, significant descriptions related to the creation of art came from third-person observers who had developed a special association with the artists. These people are thought to have been participants rather than experimenters, as was the case in a few other studies mentioned above. This is because their ideas and activities actually affected the art work. The creative process progressed under the collaboration between the artists and the participants. A famous example of such collaboration is the instance of the joint work of a sculptor (Alberto Giacometti, 1901-1966) and a philosopher (Isaku Yanaihara, 1918-1989). Yanaihara took part as not only a model but also a writer of Giacometti's work [6]. He recorded Giacometti's works, their conversations, lives, and tried to understand Giacometti's creativity by sharing his creative pursuits. They would often share the

same motif for their individual works. Such a case can be called a “second person’s voice” report. However, even under this approach, the elusive “flow” condition is not fully defined.

2.3 Self description

Historically, there have been some great artist portfolios, compiled by the artists themselves; for example, the portfolios of da Vinci, Klee, Kandinski, etc, are important memoirs of their works because they contain the artists’ considerations of their work and accounts of their philosophical and technical exploration. Today, people may study these artists’ works, guided by such notes [7, 8, 9]. However, these portfolios were put together in an uninhibited way, which implies that the content largely depended on the artist, and could, as a result, be unorganized. This study, in particular, draws inspiration from the concept of the poietiques and the practitioner’s self-investigation method (mentioned above). The former was proposed by René Passeron, based on the ‘Poietics’ study implemented by Valery. Paul Valery (1871-1945) was not only a poet but also had a keenly developed sense of aesthetics and originality [10]. He claimed that the more important aspects of study lay in the process of poem creation than in studying a created poem. His claim was based on his own experience. He was against the traditional methodology that involved understanding the structure (or history) of a poem; Valery asserted that learning from the spirit of creation that inspires the poet is more important (in “Cahier” that means “a notebook” in English). Passeron took up the challenge of establishing the domain of “Poietiques” as both a theory and a method that was to be followed by the poietics in order to study the creative process of art as experienced by the artists (creators) themselves. Ozawa introduced Passeron’s work to express the importance of a new paradigm of art research, undertaken, as though, from the artists’ eyes [11]. However, poietiques encouraged only artists’ trials without structuring the details of the technique. We have significantly learnt that the latter method—the practitioners’ self observation method—was proposed by Schön in order to advance the self consciousness of the practitioners [2]. He paid attention to educators who had the talent to contribute to the deep understanding of learners. He found that people who had achieved a high level of creativity were often given to reflection/introspection into themselves. Additionally, he pointed out that a level of self consciousness, including the aspects of action, had a significant and positive impact on creative thoughts. Based on Schön’s work, Suwa [12] studied the role of meta-cognition in enhancing skills and education by paying attention to languages which accelerate precise self consciousness. He proposed meta-cognition as a tool to enhance self consciousness. However, taking into account the high levels of engagement with the work, it is usually not possible to track incomplete memories such as feelings of conviction or misunderstanding. Therefore, we propose a methodology of self-investigation that assists in the fusion of the first person’s perspective with that of a third person, resulting in obtaining a greater consciousness about a creative activity.

3. Method of the study

Based on the literature survey, we discuss the limitations of each approach—the third person mode (the third person’s voice from an observer’s perspective), the second person mode (the second person’s voice from the participant’s perspective), and the first person mode (the first person’s (creator’s) voice from his/her own perspective). In order to develop our method, it was necessary to modify the poietiques. On the basis of the views of certain creators, we built a framework for the self-investigation of the creative process and constructed an advanced method of self-reporting about a creative process from an inner perspective. We apply this method to investigate the parts of the process that only the creators can recognize, by carrying out a case study of space

design. As we construct a framework, we assert that our research challenge is to incorporate the views of both creators and observers (who interpret the creators' works). In order to form a method of description that is possible for a creator to imbibe without reducing his/her creative motivation, we clarify the role of design by using of the subject of communication in art as the basis for our case study.

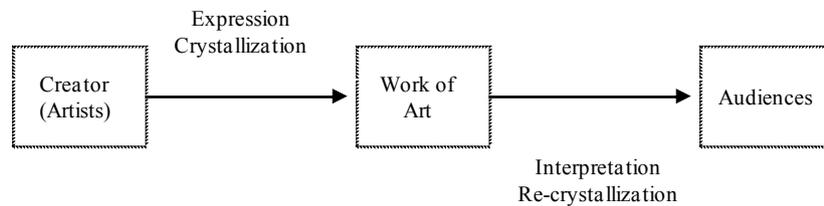


Figure1. A basic communication model of the relationship between creators (artists) and audiences

Normally, the role of art work is held to be that of a bridging media between artists and interpreters (audiences). Figure 1 shows a basic model of the relationship between artists and audiences. In a design, the designers must consider and understand the type of information that users will accept from the designed objects. On the basis of a basic communication model of art, we develop a model for communication of design. Figure 2 represents a relationship between a designer and a user (i. e., appreciator)

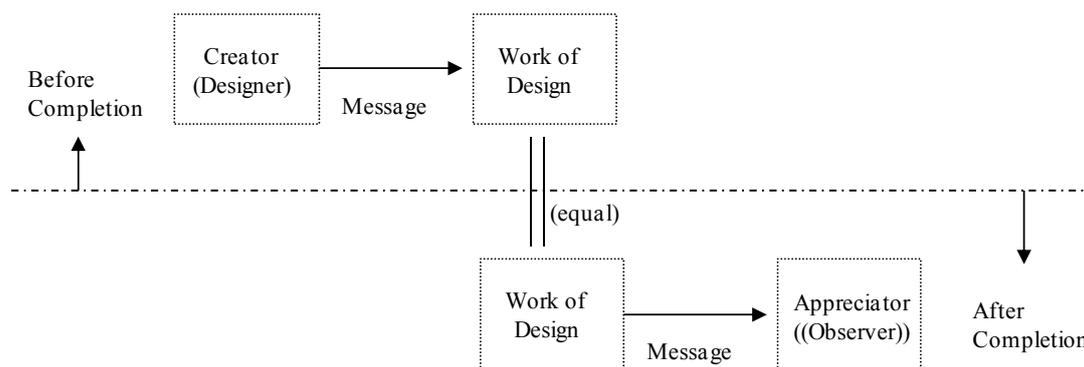


Figure 2. A model of the relationship between creators (designers) and appreciators (users)

4. A designer's self-investigation of a creative process

We developed a self-investigation method and discerned its validity by conducting a case study. The outline of the method is as follows.

A designer records real time creative processes and his/her own daily experiences while conducting a creative activity; taking down notes in sketchbooks in order to remember past experiences in the greatest possible detail is assumed to be a practice commonly employed by creators. Projects can be long term (more than one year), and a designer is expected to present and submit his/her records once/twice a week. After completing a design, he/she describes in the first self-report all sources that have been referred to during the process and the final work (the design outcome). An art researcher, who is expected to have professional experience in interpreting art work, observes the designer's creative process (recorded notes, photos, sketches, diary, etc.) and the final work, and writes an observer's report. Moreover, the designer compares his/her own first report and the observer's report and classifies the two (the classification rule is shown in figure 4). Next, the designer describes a second self-

report about the process and the final work, based on the integration of the two existing reports. The outline of this self-investigation method is shown in figure 3.

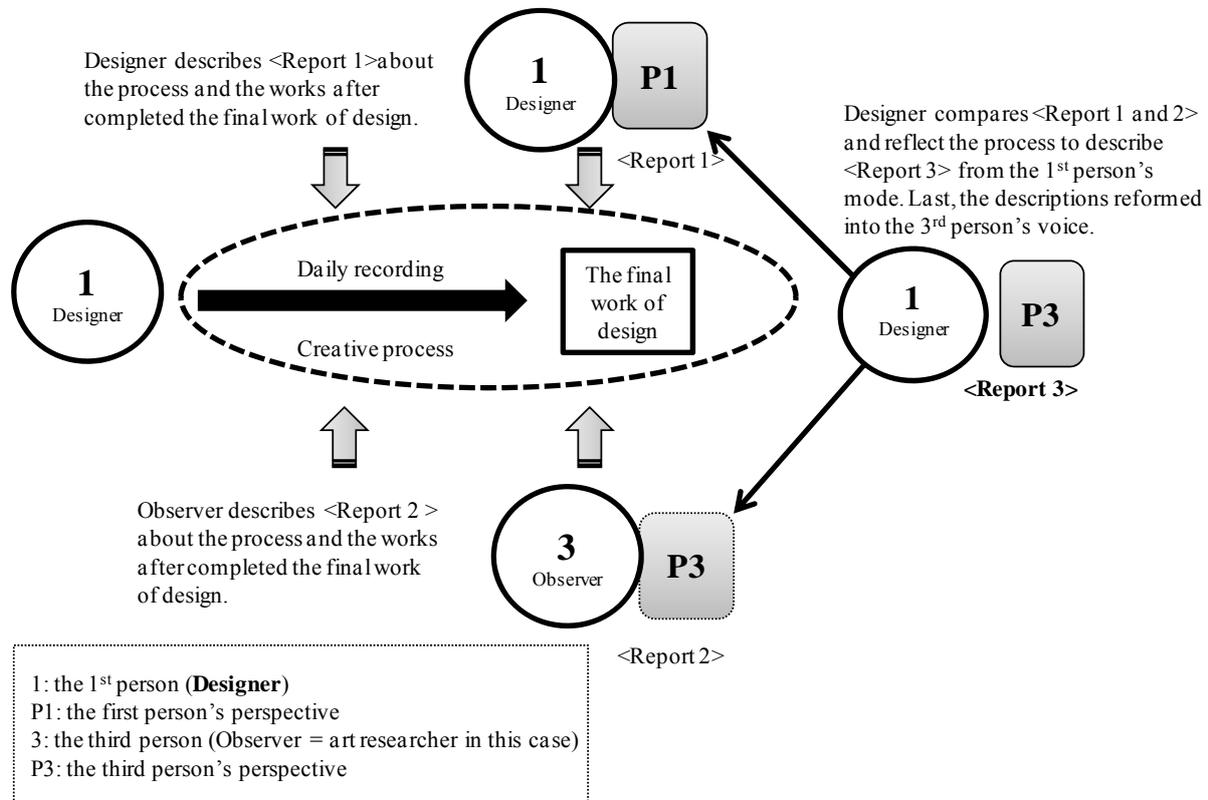


Figure 3. The outline of the self-investigation method

4.1 Detailed method of self-investigation and self-report

We prepared a detailed method in order to maintain consistency over a long-term case study. This detailed self-investigation method consists of nine steps and four separate stages of analysis. Each step produces three types of reports on the study. These are as follows (the stages of analysis will be explained later).

Step 1. A designer starts creative work.

Step 2. The designer keeps a record of his/her creative processes (daily).

Step 3. After completing the final work of design, the designer starts on a description (the first self-report) of his/her creative process and the final work, referring to his/her daily records. This report is termed as <Report 1>.

Step 4. An art researcher looks at the work and goes through the designer's records—sketch books, photos, etc.

Step 5. The art researcher writes an observer's report of the designer's creative process and the final work. This report is termed as <Report 2>.

Step 6. The designer compares <Reports 1 and 2>.

Step 7. The designer deconstructs all sentences in <Reports 1 and 2> and reforms them, based on certain rules (we shall explain this in the next section); the sentences are formed into a continuous structure, and the designer numbers each sentence within a time-lined structure.

Step 8. The designer classifies all sentences into categories <Seven Types> from his/her own perspective. These categories <Seven Types> are without R-4 from the eight categories shown in Figure 4.

Step 9. The designer reflects the process and describes the second self-report based on <Reports 1 and 2>. This report is termed as < Report 3>. To describe it, the designer holds on to the viewpoint of a creator and re-describes <Report 2> to integrate it with <Report 1> within the first-person mode. All sentences in < Report 3> are reframed to be in a third person’s voice, and from a first person’s view.

4.2 Description items

The information recorded by the designer is spread over various media: (1) daily drawings and notes, (2) design sketches (esquisse) to track the work in progress, photographs, and notes, and (3) portfolios made alongside the creative process (photographs of mid-term work). From such recorded information, the designer and the observer describe their reports. In this case study, we involved rigorous description rules. First, we decided on the description items for <Report 1> by the designer and <Report 2 > by the observer. The descriptions of the creative work were generally meant to be formed from the following topics: (A) motifs, (B) concepts, and (C) materials & techniques and others. We adopted these topics for the two categories with regard to descriptions of the processes and the resultant works. The description items are shown in Table 1.

Table1. The description items for <Report 1> by “Designer” and <Report 2> by “Observer”

Process	1— Progress 2— Technique 3— Motif 4— Concept (Philosophy)	P1 (Others) P2 (C) P3 (A) P4(B)
Works	1— Domain 2— Methodology 3— Material 4— Motif 5— Concept (Philosophy) 6— Completeness	W1 (Others) W2 (C) W3 (C) W4 (A) W5 (B) W6 (Others)

5. Analysis

The steps for analysing a case study are shown in figure 3, as steps 10–13. The steps for analysis are as follows (4 steps in all).

Step 10. The designer confirms the detailed categorization of the description items shown in Table 1 on both <Reports 1 and 2>.

Step 11. The designer codes <Reports 1, 2 and 3> with code labels (Figure 4). Some sentences that were constructed in step 9 are checked with reference to the original sentences in <Report 2> and labelled.

Step 12. <Reports 1 and 2> are classified into seven categories (without taking into account R-4 from figure 4) and <Report 3> is classified into eight categories.

Step 13. The designer investigates his/her own creative process, on the basis of the analytical results and all the steps mentioned above.

Finally all sentences are classified and coded using the description rules, as explained above. Figure 5 expresses the coding rules of the analysis. In this case, “fP1-1” refers to the following. The beginning letter “f” means that it was described by the designer in <Report 3>. P1 means that it was categorized as one of the items under

“progress,” which described the creative process (see Table 1). “-1” means that it was the first sentence of the description (in step 7). “R-0” implies “Definite accordance” to description rules in <Report 3> (Figure 4). On the right corner, “sP1-1” and “kP1-1” mean that this sentence was originally described in both Report 1 and Report 2 and categorized under the items of “progress” in the first sentences.

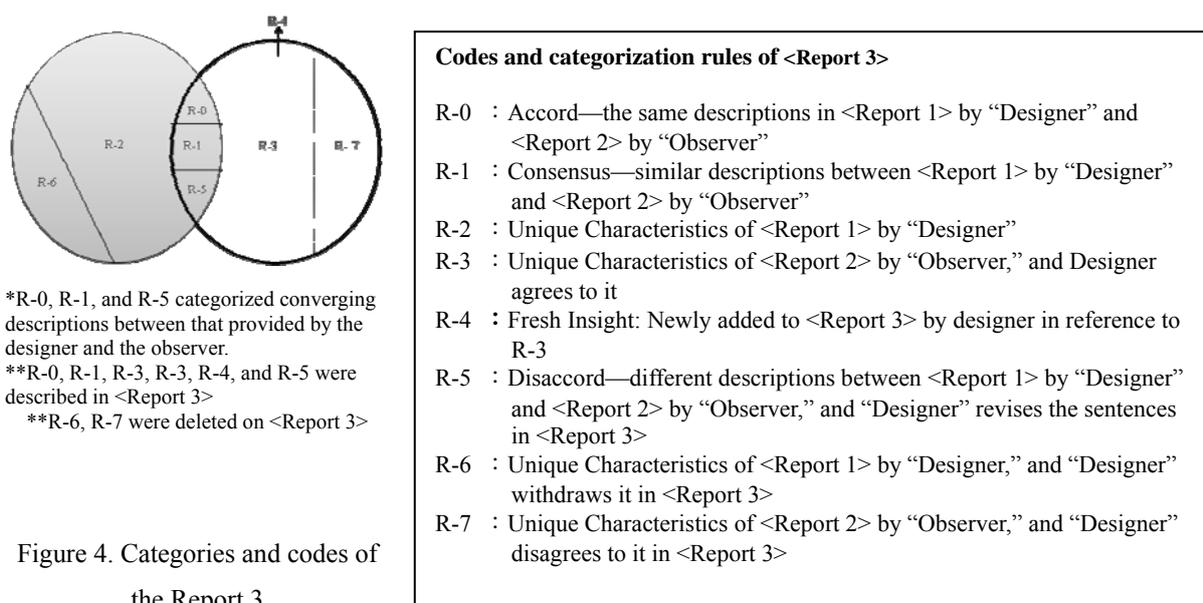


Figure 4. Categories and codes of the Report 3

s	described by Designer at the first report <Report 1>
k	described by Observer <Report 2>
f	described by Designer at the second report <Report 3>

fP1-1	An artist from Ishikawa Prefecture, specializing in “Kutani” pottery, started making a ceramic mural as an assignment for a school.	R-0	sP1-1 kP1-1

Figure 5. Example of the labels (code and numbers) on the descriptions

6. Case Study and Results

This case study was carried out between June 2005 and October 2006 (16 months). The participants included a designer who has majored in sculpture, architecture, crafts as well as 3D design in an education that spans over more than 8 years, and is also a researcher (one of the authors of this article), and an art researcher (observer). The said designer is a professor of art and is employed in a profitable career as that of an art investigator. Two experimenters controlled the conditions of the case study and checked all procedures that were undergone during the course of this study. The designer started his work in keeping with a plan to submit his entry for the Space

Design Exhibition. The final work was submitted to the competition and later selected for a public museum exhibition.

There were 108 extracted sentences in <Report 1> and 149 in <Report 2> (Table 2). In both reports, the highest number of sentences is devoted to the description of certain chronological issues within the process. The results are summarized in Table 3. <Report 3> had 288 sentences, which was reduced to 265 after the deletion of certain sentences that were not agreed upon by the designer.

First, let us discuss the role of Report 2 (the third person’s report) in the scheme of our study. Its first function is to refine the self-investigation objective. This effect can be verified not only from the data on R-0, R-1, R-6 but also from that on R-2, wherein the designer confirms the adequacy of the description supplied by her/himself. Its second purpose is to balance the description by filling in on occasions that were not described or were misunderstood by the designer owing to his/her deep absorption. We can see that 93 sentences (R-3) are judged to have been “Unique characteristics of the observer” and were agreed to by the designer. Here, it is important to take note of the fact that more than 90 % of these sentences were agreed to. The third role of Report 2 is to help the designer reflect/introspect on him/herself. R-4 is understood to play this role. 74 sentences are newly described; the contents are described in neither Report 1 nor Report 2. Furthermore, these numbers exceed 50, which is the number of sentences described as unique in Report 1. This result indicates that the report of the third person not only recalls the unconscious process of the designer but also extracts reflections/introspections of the designer from the depths of his/her inner perspective.

Next, let us discuss the role of Report 1 (the first person’s report). The main function of Report 1 is to collect data that cannot be observed from outside but can be reported only by the first person. This effect can be verified from the data on R-2, wherein about 50 sentences are described, and the number (50) is almost half that of the corresponding data on R-3 (only the third person’s sentences), and R-7.

Table 2. Descriptions of the Designer’s <Report 1> and the Observer’s <Report 2>

	Accord	Consensus	Unique Characteristics of the “Designer”	Unique Characteristics of the “Observer”	Disaccord	Delete Unnecessary Characteristics of the “Designer”	Delete Unnecessary Characteristics of the “Observer”	Total
	1A	1B	2A	3A	1C	2B	3B	
“Designer” /Report1	10	24	50	-	7	17		108
	9.3	22.2	46.3	-	6.5	15.7		100.0 (%)
“Observer” /Report2	17	18	-	101	7	-	6	149
	11.4	12.1	-	67.8	4.7	-	4.0	100.0 (%)

Table 3. Analysis results of Report 3

Descriptions of Designer's <Report3>						Deleted descriptions		Total
Accord	Consensus	Unique Characteristics of the Designer's report (R1)	Unique Characteristics of the Observer's report (R2)	Fresh Insight	Disaccord and designer revised the sentences	Delete Unnecessary Characteristics of the "Designer"	Delete Unnecessary Characteristics of the "Observer"	
R-0	R-1	R-2	R-3	R-4	R-5	R-6	R-7	
18	21	51	93	74	8	(17)	(6)	265

In order to discuss the results from a semantic viewpoint, we examined the exact sentences that figured in R-4 and R-6 of the analysis of <Report 3>. This is because these categories mean that the designer recognized after the comparison between self-report and observer's report. We came across interesting examples of the designer's levels of awareness, wherein he would initially not remember certain details that were then reminded to him by the observer's report. For example, the designer wrote "He probably has a continuous motif that was centered on nature, and bases his imagination on landscapes throughout the process, since the early stages" ob <Report 2> (code kP4-2). He went on to add a new sentence, "The whole concept of the design work was formed based on the sights of the nature that I have gathered through walking in my everyday life," in <Report 3> (code fP4-4). This was an example of R-4. He later mentioned that "it was like a fresh insight for me to be reminded of it, something that I wished to express." Another example is found in R-6. The designer described "Fine grain: that is a distal portion of all structure and is something that occurs organically" in the first report (code sP3-6); the observer, however, did not report on this. He revised this sentence as "The designer thought about the distal portion of structures that occurs organically and called it finesse" (code fP3-52), but eventually deleted it in <Report 3>. This might have been because he understood that finesse of things and structures was related to the theme of the works but was not related to the process.

7. Discussion

Self observation and self reporting have been doubted and avoided by researchers for a long time. However, on a subject such as creativity, the first person mode is really meaningful. To cover for the missing parts of a designer's self-investigation report, we proposed a method to develop a record of not only the creative work in question but also the everyday life of a designer. Then, we analyzed the texts to discover the missing parts. This allows an advantage to our proposed method for it may capture levels of cognition in relation to, especially, the creative activities; the "flow" experience has been considered to have a strong connection with intrinsic motivation that contributes to creativity [13]. Intrinsic motivation is thought to contribute to ongoing involvement. Csikszentmihályi asserted that "flow" is an experience of optimal involvement in an activity and that as people become more skilled in a domain, they will search for even more challenging problems in order to

continue to experience “flow.” So far, the designing process has been captured and investigated from the outside; however, what is far more necessary is the study of the inner view—the real process of creative design. From the standpoint of creativity, there are two different kinds of creative activities: intrinsically motivated and extrinsically motivated. The former is difficult to study from an outside view. Thus, the issue of creativity in design has been primarily discussed for the latter case (i. e., the problem-solving process) so far. Our findings and our proposed method may potentially be employed in the former case as well. Notably, a designer recognizes with greater clarity his theme of work after a case study such as ours is carried out; then, he may continue onward to the next challenge in creative design. (The design works of this case study were exhibited under the title “A Cross Section of Distant Recollection” at the Museums of Modern Art of Tokyo and Kyoto, in 2008)

8. Conclusion

Our challenge was to capture and observe a highly creative activity which was pushed by intrinsic motivation; therefore, we undertook a case study, led by one of the authors of this article. We identified a suitable framework and a set of description rules; we conducted the case study on the creative process of a space designer. Three modes of descriptions—report from the real time recording (the first self-report), report from an observer’s (art researcher) perspective, and the reflective self-report (the second self-report) from an expanded inner perspective—were planned and tested in this case study. We analyzed these three reports and compared the first self-report and the second self-report in detail. Finally, we found that important descriptions were recovered in the second report which had not been reminded in the first report by the designer, for he must have been too deeply involved with his work to reproduce a complete account of it. We identified the full range of a designer’s awareness through the comparison of the three reports. The findings of this analysis reveal the feasibility of our proposed method in promoting self-investigation and a deeper recognition of the creative process of a designer. Future work will advance in the direction of deriving a self-investigation (monitoring/report/recognition) method that can be put into practice by designers to help form a creator’s viewpoint by fusing the inner and outer views on the creative process.

References

- [1] Csikszentmihalyi, M. (1990) *Flow: The psychology of optimal experience*, New York, Harper & Row.
- [2] Schön, D. A. (1987) *Educating the reflective practitioner*, Jossey-Bass Inc, San Francisco.
- [3] Passeron, R. (1986) *L'oeuvre picturale et les fonctions de l'apparence*, (ed.) J. Vrin, Librairie philosophique (in French).
- [4] Okada, T., Yokochi, S., Namba, K., Ishibashi, K. and Ueda, K. (2007) The Interaction between Analogical Modification and Artistic Vision in the Creation of Contemporary Arts, *Cognitive Studies*, vol 14, no 3, pp303-321. (in Japanese)
- [5] Yokochi, S. and Okada, T. (2007) Creative Expertise of Contemporary Artists, *Cognitive Studies*, vol 14, no 3, pp 437-454. (in Japanese)
- [6] Yanaiharu, I. (1969) *Giacometti, Misuzu Shobo* (in Japanese)
- [7] Clark K. (1939) *Leonardo da Vinci: An Account of his development as an Artist*, Cambridge University Press.
- [8] Klee, P. (1983) *Das bildnerische Denken*, Schwabe Verlag Basel (in Japanese translation).
- [9] Kandinsky, W. (1959) *Punkt und Linie zu Fläche*, Munchen Albert Langen, (in Japanese translation).
- [10] Valéry, P. (1989) *The Outlook for Intelligence*. (in English translation), Princeton University Press.
- [11] Ozawa, M. (2005) *The study on the realization of works: from the point of poietique*, (Doctor thesis, Tsukuba University).
- [12] Suwa, M. (2009) Meta-cognition as a Tool for Storytelling and Questioning, *What Design Is, Special Issue of Japanese Society for the Science of Design*, Vol 16-2 no 62, pp 21-26.
- [13] Collins, M. A. and Amabile, T. M. (1999) Motivation and creativity, in: R. Sternberg (Ed.) *Handbook of creativity*, Cambridge University Press, pp 297-311.