

存在感：探討書本互動脈絡

Beyond the Function: Exploring the Presence of Material Books

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摘要

長久以來人造物便不斷地隨著時代而演進，它們反映了當代文化、社會、宗教和人們的生活情況，因此人造物便成了相關領域研究時的重要參考依據。然而隨著科技的進步，人造物的面貌與角色也逐漸改變；新的科技產品改變了人們與傳統人造物之間的互動方式，傳統低科技的人造物所具有，經過長期社會累積所發展出的特殊意義在科技發展的腳步下逐漸被取代。

近十年來電子書的技術逐漸成熟，不論是專門的電子書閱讀器或平板電腦中的一項服務，再再宣告了書本數位化時代的來臨。關於電子書的研究紛紛因應而生，例如頁面排版的效益評估，模擬真實互動的行為等「功能」層面的考量。然而，在人機互動的領域中卻鮮少以傳統書本在人們生活中所扮演的角色出發，定位電子書與人們之間的關係。本研究的目的是在於探討傳統書本在互動過程中的角色與定位，討論傳統書本的「存在感」，藉以提出未來電子書的設計建議。

本研究採用了文化探針、半結構訪談、扎根理論、工作模型等質性研究法，讓參與者透過自我檢視的方式重新體驗並分享不同的脈絡背景，並且在資料解構與重組的過程中，逐步找尋書本以及相關人造物在人們跟書本的關係，最後建立書本互動的模式並提出書本「存在感」的關聯架構。

結果指出，人們與書本間的互動模式由對應於社會互動、收藏、閱讀三個主要互動層面的三個現象所組成：期盼感、占有感、滿足感，三現象彼此之間呈現線性的交互影響，並且透過「接受」這核心概念來連結彼此；在這些互動下書本具有以下特質：未來的典範、經驗投注與誘發、人格特質的延伸表現。因此本研究提出書本的「存在感」即是在「閱讀」與「社會互動」所產生的兩股力量牽引之下，最終在收藏層面上所加以呈現的一個特質。最後本研究基於上述結果，對未來電子書提出以下的設計建議：(a)電子書應提供個人化的差異來表現不同的閱讀習慣，(b)提供更自由的收藏方式來表現個人偏好，(c)藉由實體的代表物來強化虛擬書本的擁有感，(d)適時地聯結他人與社群。本研究針對「存在感」所提出的設計建議涵括了三個互動層面，具體且彈性地提供相關互動介面設計師與服務商電子書未來可能的參考方向。

關鍵字：電子書、存在感、使用者經驗、文化探針、扎根理論

Abstract

With the development of the human beings' history, artifacts which reflect the cultures, societies, religions and lives of contemporary people have been evaluating continually. Hence, artifacts have become the important references of related studies issues.

However, the appearances and characters of artifacts are changed because of the advancement of technology. The new digital objects have changed the current ways we interact with traditional artifacts, and the symbols of traditional artifacts which have been developed during hundred years are replaced and eliminated gradually.

In recent years, the proposing of ebook readers and Tablets seems that the epoch of digital books is coming. Researchers and designers have proposed related issues of "function" aspect such as the effects of screen layout, or the simulative interactions on digital device. However, there are few studies which propose design issues of ebooks based on the relation between people and physical books in HCI. The aim of this thesis is to propose design implications which are produces from the research of the relationship between physical books and people for future ebook design.

This thesis adopts the culture probe, semi-structure interview, grounded theory and work model to make the participants re-experience and share the contexts after self-documenting. Then, the relationship between physical books, artifacts and people is revealed through the processes of data dissolving, comparing and reorganizing. Finally, the core pattern of books' interaction and the structure of books' presence are proposed.

The result indicates that the core pattern of interaction between physical books and people are consisted with three key phenomena which are reflected to the three main interactions: "social interaction", "collection" and "reading" named "expectation", "possession" and "satisfaction". These phenomena are affecting each other in a linear and two-way process. Besides, the whole process is linked and maintained by the

core concept named “acceptance”. Physical books have several characters under these interactions: books are the paragons of the future; books are thought as experience recorders and triggers; books are the extensions of personal characteristics. Therefore, the presence proposed in this thesis is considered as the performance which is extruded by the forces from social interaction and reading of collection. Based on the arguments above, the design implications for future ebook design are suggested that (a) The ideal e-book should provide personalization and high control to meet the various demands of users such as reflecting the reading habits, (b) different collection preferences, (c) substantial representation, and (d) connection of communities. These design implications including the three interactions lead the interaction designers, interface designers and service providers a distinct and flexible way for ebooks design.

Key words: ebook, presence, user experience, culture probe, grounded theory



誌謝

比當初預估晚了一年，也可說早了一年，原本現在應該是要準備去好好玩耍揮霍人生最後一個可以任性的一年...不過人算不如天算，一命二運三風水四陰德五讀書(by ㄉㄨ)·這一兩個月的時間每每看到先前在右元帥那看的句子更能體會：

天下事無所為而成者極少，有所激、有所逼而成者居其半

天下事焉能盡如人意，古來成大事者，半是天緣湊泊半是勉強遷就

如果這是我必須學習的一部份，那也只好默默含淚硬吞下來—即使到現在我還是沒有想到有甚麼做得還不夠好或還不夠資格的地方。

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「IAA 太棒了，我考一百次也要念這裡！(温千慧，2010)」

林珂蓓

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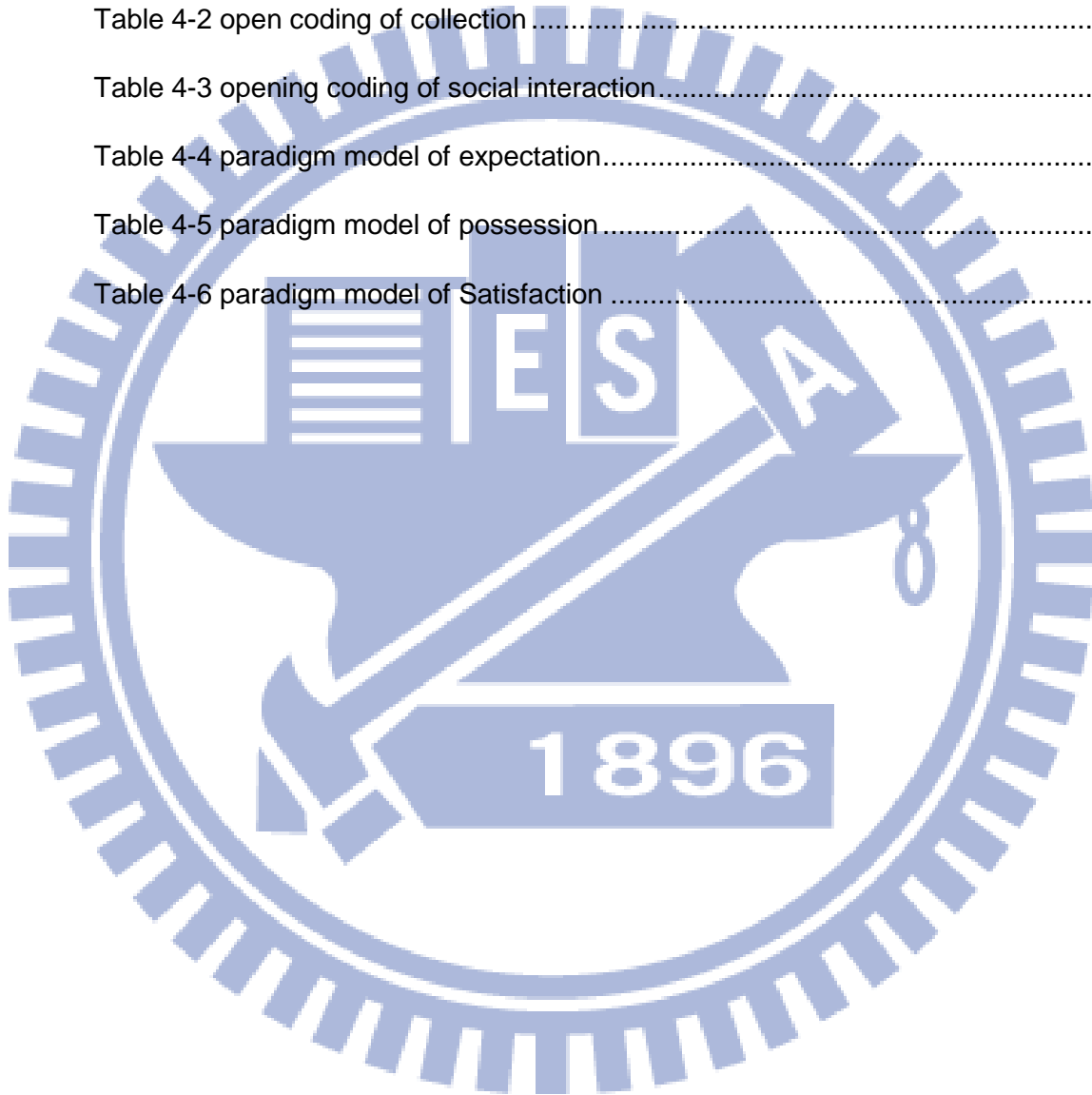


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Chapter 1 Introduction

1-1 Background

People create objects, use them and stand with them in the world (Baudrillard, 1996).

Objects, which have become the must-be in the social interaction, lead the Archaeologists, Anthropologists, and Sociologists to the progressing process about culture, religion, politics, and lives of human beings. People are connected and interacting with each other through objects. Yet, objects are always ignored and forgotten until they are mentioned in an occasional chat or vanishing from people's lives (Dant, 1999). In fact, objects are full around us and dealing with us all the time.

Objects are not only produced to meet the basic needs of our subsistence, but they are the expressions of people (Csilzentmihalyi, 1981). Hence, what the character of objects is in the social interaction should be considered before the demands of aesthetic and function.

Due to the growth of communication techniques and development of the Internet, digital products are distinguished for their portability and ubiquitous computing in current days. However, these new products forcing their way in our world have been changing the way we interacted, and replacing the current beings. This has altered the way people interact with things and unavoidably designers must pay more effort for re-seeking the relationship between people and objects.

In traditional way, the interaction between products and users is always taken as a work flow. Designers put their efforts on the usability, functionality, and efficiency of products (Norman, 2002). Most of designers evaluate products on the focus of

reducing mistakes. It pushes users to understand the icons' semantic meanings before manipulating them (Norman, 2002). Hallnäs and Redström(2002) proposed the term named "presence" to advocate the concernment of objects. What is the proper place for object in people's lives? As designers, their missions are not just creating "new functions" or "a new styling", but also disposing the right places of products under the contexts of lives.

1-2 Motivation

Recently, e-book readers and digital reading have become a noteworthy issue among the publishing distributors and product manufacturers (MIC, 2008, 2009). According to the research and statistics from ALA (American Library Association, ALA) in 2010, 65.9% of U.S. public libraries provide the access to e-books. As with other products on the merits highlighted, e-book readers can reduce –or vanish- the physical books' volume and weight. It does reveal the image of reading in the future that people ever imagined. Many world-renowned companies, such as Amazon, Sony, Barnes & Noble and Apple, have announced kinds of e-book readers such as Kindle, Sony Reader, Plastic-Logic and iPad. It seems that the e-book readers will replace the traditional books and for some, it means that books will be withered and die away in the near future.

However, this epoch-making device in human beings' reading history evokes some controversial issues (Carden, 2008). Doctorow (2004) has revealed the doubts and anxieties between physical books and e-books:

“Unless you own the e-book, you don't own the book”.

“I take the view that the book is a “practice” -- a collection of social and economic and artistic activities -- and not an “object.” Viewing the book as a “practice” instead of an object is a pretty radical notion, and it begs the question: just what the hell is a book?”

“...because one of the frequently cited reasons for preferring paper to e-books is that paper books confer a sense of ownership of a physical object.”

Meanwhile, the Pilot Program, which was conducted by Amazon and the Princeton University, had been terminated last September. This frustration revealed the conflict between current habits and e-books (Princeton University, 2010). Most of the students and facilities who partook in this program said they found the Kindles disappointing and difficult to use. Some pointed out that they were dissatisfied and uncomfortable with this device. One of these volunteers said much of physical interaction with the material, such as bookmarks, highlighting, page-tearing, sticky notes, were been lost, or if not lost they were too slow to keep up with his thinking. However, most of the related researches still focus on the “use” aspect such as the simulation of reading behaviors (Chen, Guimbretiere, Dixon, Lewis and Agrawala, 2008), the simulation of artifacts in reading courses (Schöning et al., 2009), or the efficiency of reading experience on digital device (Waycott & Kukulska-Hulme, 2003). Hence, this thesis focuses on the exploring the character of physical books in the interaction with people.

1.3 Objectives

This thesis aims to take another approach, called presence aspect, to find the relationship between physical books and people for e-books design. Through observations of people's interactions, there are two main objectives to achieve:

1. Understanding where the presence is from interactions

Because presence is a strange and ambiguous concept among design fields, its mechanism must be investigated and appeared in this thesis. To achieve this objective, the properties of presence should be found and theorized in a logical method.

2. Proposing the design implication for e-books design

After realizing the presence between physical books and people, design implications are proposed. These implications will indicate designers that what factors can be controlled to enhance the presence, and what effects might be resulted in.

1.4 Issues

To achieve the goal above of this thesis, the issues beneath should be clarified: (a) What kinds of interactions between books and people occur? For understanding the presence between books and people, it's important to select the proper methods to collect the data we need. (b) What are the factors existing in the interactions? Where is the source of the factors? How do these factors affect people and books? (c) What do people respond under these factors? What do they feel?

1.5 Scope

In this thesis, the focus is located on the interaction between books and the user self.

The contexts of different interactions are also discussed in this thesis. However, the divergence caused by the different contents of books is not included. Besides, the measuring and quantifying of the presence are also excluded in this thesis.

1.6 Outline

This thesis is consisted by six chapters. The research background, motivation, objectives, issues, research scope are addressed in Chapter One. The reviews of related researches about presence studies, artifacts and research methods are introduced in Chapter Two. The research structure and procedure, which including the data collecting and analyzing process are explained in Chapter Three. The results summarized and inducted by work model and grounded theory are demonstrated in Chapter Four. The discussions, which including the interaction theory and the theoretical structure of presence and the design implications, are proposed in Chapter Five. In the end, the conclusion and recommends for future works are introduced in Chapter Six.

Chapter 2 Literature Review

In this chapter, the researches of presence in different study fields such as communication, sociology, design and HCI field are reviewed and the definition of presence in this thesis is proposed. Then the research approaches, culture probes and grounded theory, are also introduced.

2-1 Presence and Artifacts

Researchers from different study fields have various definitions of the term of presence. In communication studies presence is considered as the psychological property between mediation and users. In the other way, sociologists focus on the influence of artifacts placed in the social lifeworld and researchers devoting to the HCI fields concentrate on the interaction between artifacts, information and users.

2-1-1 The Presence in Communication Studies

For illustrating the impacts and influences emerged from new mediation, Short, Williams and Christie (1976) proposed the Social Presence Theory. They thought that presence is “a sense of a psychological similarity between actual and virtual objects when people experience, perceive, manipulate, or interact with, virtual objects”. In the further period, presence is defined as “the sense of being in an environment” (Steuer, 1992), “the perceptual illusion of non-mediation” (Lombard & Ditton, 1997), or “being there” (Slater, 1999) and separated into different kinds. Lombard & Ditton (1997) categorized presence into six types: (a) As social richness, such as subjective or objective social richness; (b) As realism, social and perceptual realism; (c) As transportation, "being there", means you're there, or, it is here, also said, "We are together [shared space]"; (d) As immersion, perceptual or psychological immersion;

(e) As social actors within medium, social interaction with an entity within a medium; (f) As medium as social actors, social interaction with a medium itself.

Biocca (1997) also sorted presence into three main types: (a) Physical presence. At any moment of technology use, users feel being present in any one of the following environments - physical or virtual environment, or in the imaginary environment; (b) Social presence, the sense of being together with another and mental models of other intelligences; (c) Self presence, a psychological state in which virtual (para-authentic or artificial) self/selves are expressed as the actual self in either sensory or nonsensory ways. In addition, some scholars thought that the social and physical presence sorted by Biocca contains six types of presence proposed by Lombard (Ijsselstein, de Ridder, Freeman, & Avons, 2000)

From the description above, we can find that in the recent researches presence is re-conceptualized a property emerged from interaction of communication process, which had considered as a property of the mediation in early researches. Hence, the interactions between physical books and participants are focused and analyzed for investigation of presence in this thesis.

2-1-2 The Artifact and Presence in Sociology

Sociologists have had great interest and paid attention on the relationship between artifacts and human beings. They make efforts in realizing the progress that how artifacts affect the people's lives. Baudrillard (1996) pointed that function of furniture and objects is to personify human relationship, to fill the space that they share between them, and to be inhabited by a soul. Here is a description of Baudrillard which has revealed the character of objects and artifacts:

“...Human beings and objects are indeed bound together in a collusion in which the objects take on a certain density, an emotional value - what might be called a “presence”. What gives the houses of our childhood such depth and resonance in memory is clearly this complex structure of interiority, and the objects within it serve for us as markers of the symbolic configuration known as home.”

In the perspective of culture and social value, the function of artifacts is leading to a social relationship through which the artifacts becomes incorporated into people's lives (Tim Dant, 1999). Artifacts are the carriers which social value is express as a trace of people, occasions and culture contexts that inscribed value in the object (Arjun Appadurai, 1986). Csilszentmihalyi and Rochberg-Halton(1981) explored the meanings of households and proposed that people give things a place in our lives and let them enter people’s lives. Tim Dant (1999) also concluded the properties of artifacts which are summed up from studies of other sociologists to give them a role in material world: (a) function, (b) signification, (c) sexuality, (d) knowledge, (e) aesthetics, (f) mediation.

a. Function:

The object extends or enhances the human physical action of this user, e.g. as a tool the car actually transports its user.

b. Signification:

The object signifies the social group membership of its user, e.g. the distinction of a tiara, the clan identification of a football scarf.

c. Sexuality:

The object arouses its user or others or both, as a sign from a code indicating sexual action, identity and interest, through bodily display, sensuality or substitution, e.g. the wearing of tights or tight fitting jeans.

d. Knowledge:

The object delivers knowledge to its user by storing simple information or a synthetic understanding of some aspect of the world, e.g. book or any other complex textual object.

e. Aesthetics:

The beauty or form of the object directly moves the emotions of users by representing pure values, e.g. the art work.

f. Mediation:

The object enables or enhances communications between humans, e.g. a telephone, the decorative item that is a talking point, the heirloom that links generations.

According to the arguments from sociologists about the relationship between artifacts and human beings, it is thought that the artifacts are not only the meaning carriers but the avatars of people. They represent the owners' tastes, experiences, values, and status of the society. Therefore, the treatments of different participants are noticed and discussed in this thesis.

2-1-3 Design, Artifact and Presence

Hallnäs & Redström (2002) proposed the concept -“design for presence”- which focused on the “meaningful presence” rather than “efficient use” for computing products design. They took some example for explaining the relationship between meaningful artifact and people:

" When we ask questions about this particular table, we do not ask for its general use, but about its existence in our friend's life,"

"a phone becomes a personal object and not just a tool for communication suggests that this phone has become a part of someone's life; my phone will not just be any phone, but a unique thing that belongs to my lifeworld, just as my house is not just any house but this particular house of mine."

They made an definition in terms of presence is related to a particular meaning given to a specific unique thing and argued that to understand what it means for an artifact to be part of someone's everyday life as well as eventually to design for this, the presence must be considered beyond.



Figure 2-1 the prototypes from Djajadiningrat, etc.(2004)

In the HCI field, there are some studies which eventually delivered prototypes for investigating and examining about the interaction between artifacts and people.

Djajadiningrat, Wensveen, Frens and Overbeeke (2004) demonstrated the well-known and classic prototypes (figure 2-1), a video tape player and a camera, to discuss the possibility that connects action and semantic of artifacts design. They

argued the meaningful couplings with functions depend on making use of the rich appearance, action potential and inherent feedback of physical objects.

Danhope-Smith & Patel (2005) also demonstrated a prototype named Pollen after contextual researches to explore people's attachments to objects which is reinforced by Donald Norman's view (2004) that "Our attachment is not really to the thing, it is to the relationship, to the meanings and feelings the thing represents".

Besides, according to the design perspectives from Verbeek(2005), function, symbolism and material qualities, Odom, Pierce, Stolterman and Blevis (2009) inducted the four properties about the people's attitudes to non-digital artifacts: (a) engagement, (b) histories, (c) augmentation, and (d) perceived durability. Meanwhile they also responded the concept "ensoulment of an object " proposed by Nelson & Stolerman (2003) to explain the specific property of artifacts:

"An important general takeaway interpretation of our observation work is the contrast between the ensoulment of things non-digital and the unensoulment of things digital: for the most part, things ensouled—things with a high strength of attachment—were not digital things and digital things were things unensouled—things with a low strength of attachment."

2-1-4 Brief Summary

Based on the literature reviews above, we realized that the definition of presence is changing depended on the study background. In this thesis, the purpose of our research is not classifying or sorting the kinds of presence but focusing on the various contexts of the interactions between people and physical books. Hence in this thesis

we define the presence of physical books as “the sense of the diversified and aware performances of books among the interactions with people. “

2-2 Culture Probe

Culture probes which allow participants express themselves are an approach of user-centered design for understanding human phenomena and exploring design opportunities (Mattelmäki, 2003). There are three features (Mattelmäki, 2005) of probes: (a) basing on user participation by means of self-documentation, (b) looking at personal context and perceptions, and (c) an exploratory character. The purpose of probes are encouraging participants to collect and document the materials actively. Probes focus on participants' attention and daily lives including social, aesthetic and culture environment, values and attitudes. They explore new opportunities rather than solve problems that are already known. Also the probes which are conducted for creating a dialogue between designers and users (Gaver, 1999) help users express their own views by provoking and stimulating their imagination. They also help designers listen to other people and understanding their action (Gaver, 2001). According to the discussions of relevant reports about probes, there are four reasons (Mattelmäki, 2005) proposed for using probes: (a) inspiration, (b) information, (c) participation and (d) dialogue.

a. Inspiration:

As a source to support and enrich designers' inspiration, probes provide creative thinking among designers and in the design team in the early design phase.

b. Information:

Probes can be used for reasons such as the difficulty of accessing people in any other ways to collect information about potential users, experiences, attitudes and needs.

Probes can help design teams to find the signals of interesting opportunities in early stages of design process.

c. Participation:

As an incentive to participation, probes support users to observe their experiences and monitor themselves actively from different angles. They provide the users with an opportunity to participate in ideation process.

d. Dialogue:

Probes support the emergence of dialogue and become the communication between researchers, users and designers, and generate an inner dialogue when designers use their experiences to understand the users better. That is, probes create an interaction between designers, design teams and users in accordance with the user centered design principles.

According to the description above, probe is considered as an invitation for users to bring new stimulations for design or research courses. Besides, the reason of probe adapting is that participants will review their lives and rediscover the unnoticed stuff around them. They might be curious about the contents of probe: "Why do they need to know this? Is it very meaningful for these researchers and designers? Why?" That means probe offers chances to make participants bring more deep and unexpected thoughts out.

2-3 Grounded Theory

Grounded theory which is extensively conducted in qualitative research with systematic sets of procedures as a methodology was originally developed by Glaser and Strauss (1967). A well-constructed grounded theory must be in keeping with four criteria: fit, understanding, generality, and control (Glaser and Strauss, 1967).

Following the criteria above, grounded theory is inductively derived from the study of the phenomenon it presents. People who adopt grounded theory do not begin with a theory, then prove it. On the contrary they begin with an area of study and what is relevant to that area is allowed to emerge (Corbin & Strauss, 1990). The purpose of grounded theory is to develop a faithful theory to illuminates the area under study. Therefore there are three main established operating coding procedures we need to follow: (a)open coding, (b)axial coding and (c)selective coding.

a. Open Coding:

Open coding is the basic analytic procedure which is a process of breaking down, examining, comparing, conceptualizing and categorizing data to identify and develop the concepts.

b. Axial Coding:

Axial coding is a set of procedures to connect subcategories to a category after open coding. It is done by utilizing the paradigm model which is involved casual / intervening conditions, context, action / interaction strategies and consequence.

c. Selective Coding:

Selective coding is a process of selecting the core category, systematically connecting it to other categories to move beyond description to conceptualization and uncover the pattern for telling the whole phenomenon analytically.

Grounded theory is thought as a phenomenon analyzing tool which is consisted of dissolving-constructing procedures. In this thesis, it is forced that all the raw data are collected from independent events. These events which are performed by different participants have their special contexts and grounded theory become the useful and helpful tool to find the whole pattern of people.

Chapter 3. Research Methodology

This research which is conducted with user experience and qualitative research methods aims to explore, induct and analyze the contexts of the interactions between people and physical books. The figure 3-1 reveals the whole structure of this reach.

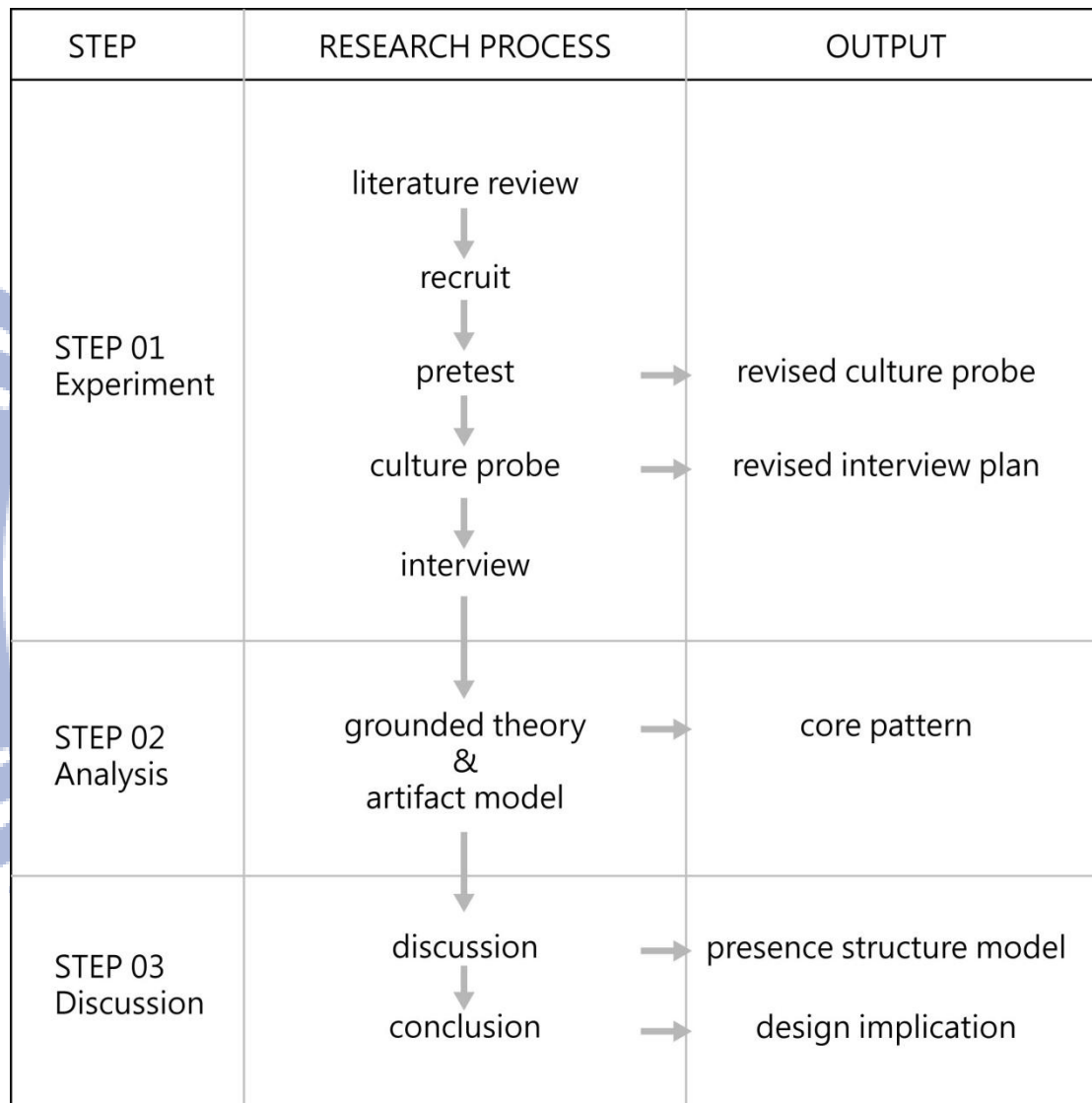


Figure 3-1 the research structure

3-1 Recruit

For investigating the presence from interactions more precisely, the participants who are highly sensitive about reading and books are required for this research. According to the report from GVSRC (2007), the reading time of people over 18 in Taiwan is 2.7

hours in average. Therefore, there are several recruiting criteria of participants: (a) first, people from 18 to 30 years old are the target in this thesis. People in this age group are familiar with technology, and they might have experienced digital reading and ebooks. Therefore this thesis takes this age group as the target to understand the way they interact with physical books. (b) Participants must live in the north Taiwan and (c) The average reading time of physical books must be more than 3 hours per week. Participants were recruited from snowball sampling (Patton, 1990) and the Internet such as BBS and reading communities. Two females were recruited for the pretest, seven females and two males were recruited for the formal experiment. The table 3-1 beneath shows the basic information of all participants.

Table 3-1 the basic information of participants

| Number | Gender | Age | Location | Title |
|-------------|--------|-----|----------|---------------------|
| Pretest | | | | |
| A | F | 25 | Hsinchu | Student |
| B | F | 27 | Taipei | Student |
| Formal Test | | | | |
| C | F | 28 | Hsinchu | Assistant Editor |
| D | F | 24 | Taipei | Assistant Designer |
| E | F | 24 | Hsinchu | Student |
| F | F | 26 | Taipei | Industrial Designer |
| G | F | 26 | Taipei | UI Designer |
| H | F | 25 | Taipei | Social Worker |
| I | F | 26 | Taipei | Sale |
| J | M | 26 | Taipei | Industrial Designer |
| K | M | 26 | Taipei | Planner |

3-2 Pretest

The pretesting probe which is based on the conclusion of Odom (2007) has two main parts: Environment observation and reading experience review. The first part, environment observation, includes photographing, map drawing, searching for meaningful artifacts in the environment and artifacts involved reading courses. Meanwhile, the reasons and location of these artifacts need to be noted.

The second part, reading experience review, requires that participants need to follow the indication to find and take shots for the specific books in their environments. According to the conclusions and properties of artifacts which are found by sociologists and researchers in the previous chapter, it is curious that what kinds of books will be chosen if people were asked to give specific meaning to books? Do these chosen books have any special property or unusual context? In the pretest step, the participants are asked to find the seven specific books, each represents memorial, high reading frequency, recommendation, enlightenment, oblivion, self and the most important one. After receiving the pretesting probe, the participants were requested of the semi-structure interviews which were conducted for understanding the participants' reading habits, living environments and related social activities.

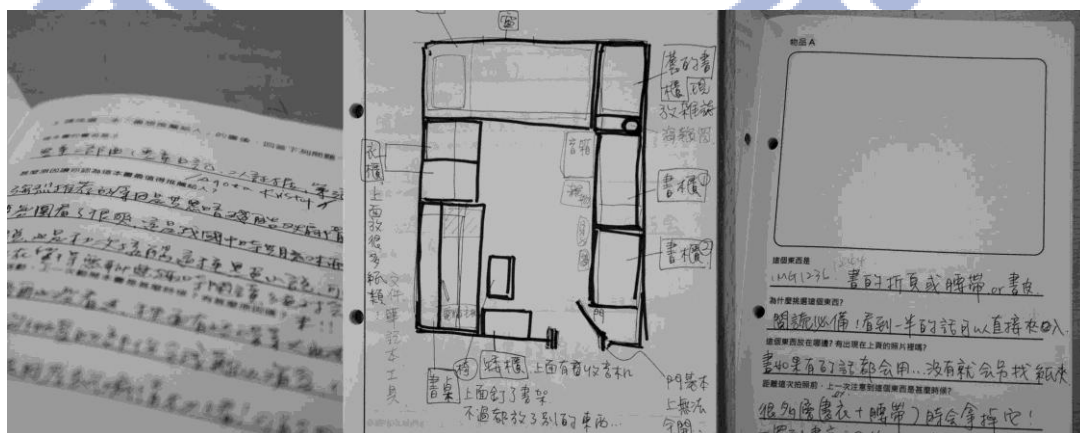


Figure 3-2 the workbook of pretest

According to the interviews of pretest, the formal culture probe was revised from workbook(figure 3-2) to pieces cards for reducing the pressure and extending the experiment time. In addition the quantities of specific books which are used for comparing the different contexts of the participant are increased because of the result of pretest which revealed the confusion of selecting the matched one. Finally the diary was added into the formal experiment for tracing the daily lives of the participants.

3-3 Culture Probe

The formal culture probe which depended on the result of the pretest above includes (a) the help manual with the indications, the demonstration and objectives of activities, (b) environment note, which contains searching the meaningful artifacts in the environment and artifacts involved in the reading courses, (c) specific books search, which based on different requirements, (d) diary to record related events during one week, (e) other kits, such as return envelope, flash drives and drawing tools.

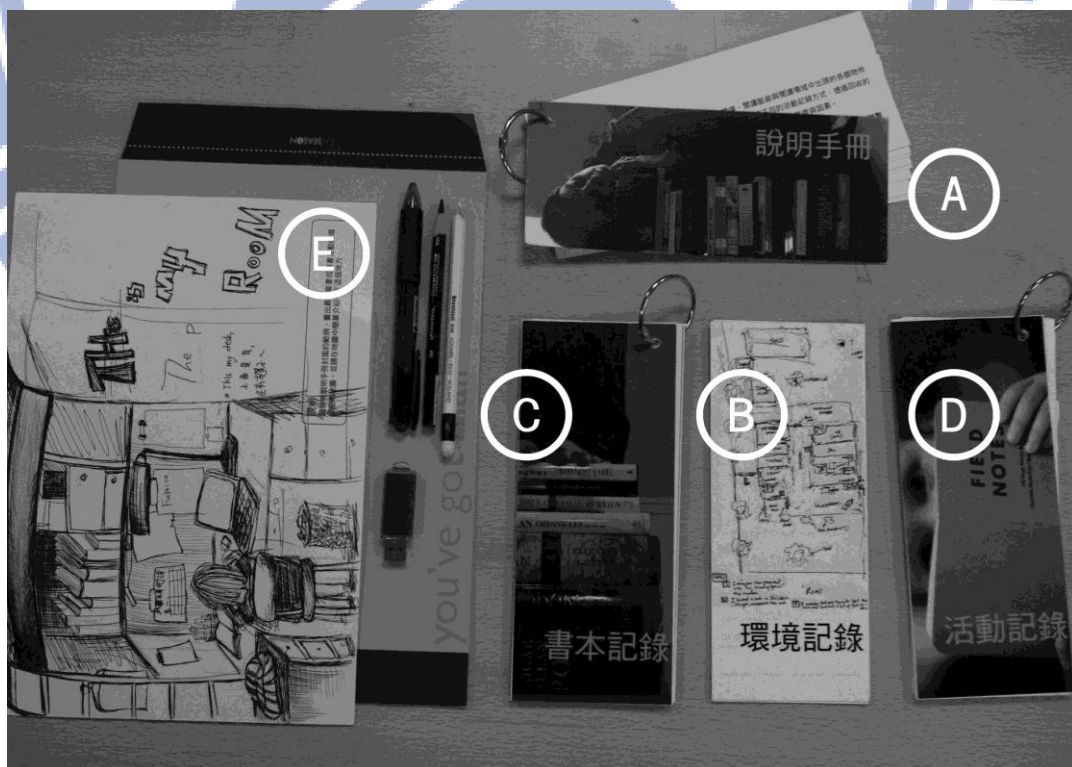


Figure 3-3 the culture probe tools

The following are the formal probe conducting procedures: (a) participants are advised by the help manual to take the environment note as their first task. This easy task which asks participants observing, photographing and drawing is considered as the warm-up activity of self-document. It is considered that the personal characters and preferences are revealed during the selecting processes. For example, the artifacts drawn on the hand-drawing map reveal their statuses in participants' minds. It means these artifacts represent some "meanings" for participants are worthy to be introduced in the map.

(b) After being familiar with their environment again, participants are asked to find the specific books for the probe. They need to take some photos and write some notes to present the books' situations such as the location of books, the appearance and traces of the books, and some special parts of the books. For example, participants need to find three books to represent themselves. The objective of this activity is realizing the contexts of meaning endowing. Why do participants choose these books? How do they "treat" these meaningful books? In addition, the other unexpected clues observed from the photos and notes might be the key hints for the following interview and data analysis.

(c) Meanwhile, the diary is assigned to notice participants being sensitive for their daily lives. It allows participants just write something about books and reads, such as what happened, who they met or how they felt.

3-4 Interviews

Because there's no guarantee of consistencies and integrity of the result from the participants, the semi-structure interview which revised with the different feedback and codes must be conducted for us to fill the lack of the return data. The table 3-2 beneath shows the main interview structure:

Table 3-2 the interview structure

| Phase | Main Question | Objective |
|-----------------------------------|--|--|
| Phase A Environment and Habits | 01. Please explain the reasons of these picked artifacts. 02. Please introduce your reading environment. 03. Please demonstrate your reading habits. | 01. Understanding the activities of users in their environments 02. Understanding their attitudes and patterns of these environments |
| Phase B The Story of Books | 01. Please explain the location and sources of these books. 02. Please explain the reasons of this book. | 01. Realizing the character of books in the participants' lives. 02. Exploring the relation of social interaction, living experiences |
| Phase C Diary | 01. Please introduce the events of your diary during this week | 01. Following the participants' steps for observing their activities. |

Not every participant is able to express his / her real opinion. The questions of table 3-2 above are the basic questions for basic general data. The whole interview is consisted by three main parts, which are reflected back to the probe's contents. The first part is about environment and habits. For example, participants need to explain their environment al arrangements and explain the reasons of these picked artifacts. The second part is about the story of these books. Participants can share the books' background stories that revealing the relationship with books and other people. The final part is introducing some specific events during the week. It can provide the clues of their social activities and social status. The deeper questions about private memories, experience, relationship with friends and family members or personal value can be an reference for the next analyzing step.

3-5 Grounded Theory

The raw data from culture probes and interviews are deconstructed and conceptualized to seek for the connection among the data. The following step which is abided by the three coding procedures of grounded theory would establish the theory of presence between books and people:

Open Coding

At first, all the complex, concrete and descriptive data are given the abstract labels called “concept” and translated into discrete incidents. It’s a process of conceptualizing and grouped into categories and developing the properties of dimensions. Being sensitive is the top priority in this step because every fragmental data might represent an important concept. For example, a photo about the bookshelf might contain a lot of information such as arranging preference and space compromising. Once the concepts are labeled, they should be crowded into the same category. Then, the propertied of this category should be developed. The whole procedures of open coding are shown in the figure 3-4.

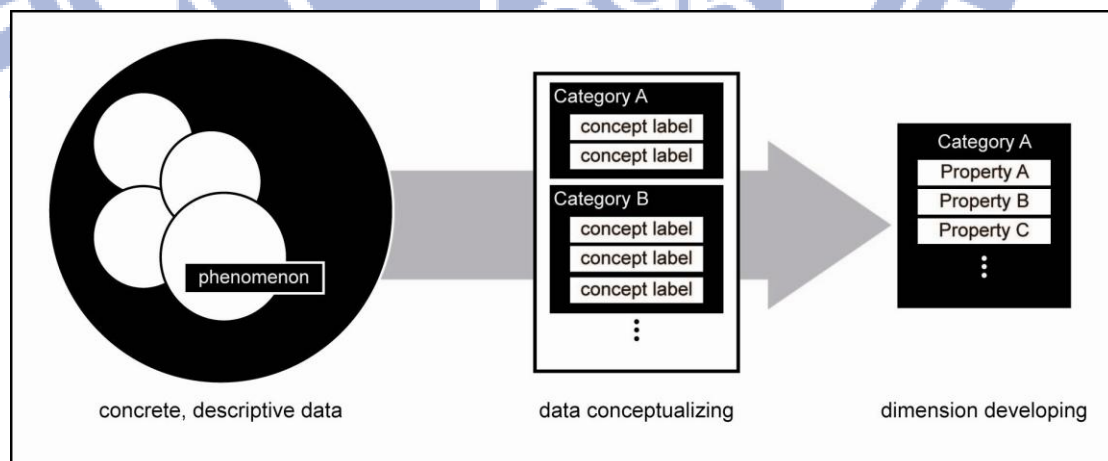


Figure 3-4 the open coding procedure

Axial Coding

In axial coding step, a paradigm model (figure 3-5) which contains causal condition, phenomenon, context, intervening conditions, interaction/ action strategies, and consequence is concerned for the relationship between categories that the main categories would be confirmed. Categories from open coding step must be consolidated. Then, there are some important phenomena should be appeared again and again. They might be mentioned in interviews or shown in raw data, even emerging during the coding processes. In addition, although open coding and axial coding are different steps in this research, it's a repeatedly alternating process between open and axial coding to make sure the density of data.

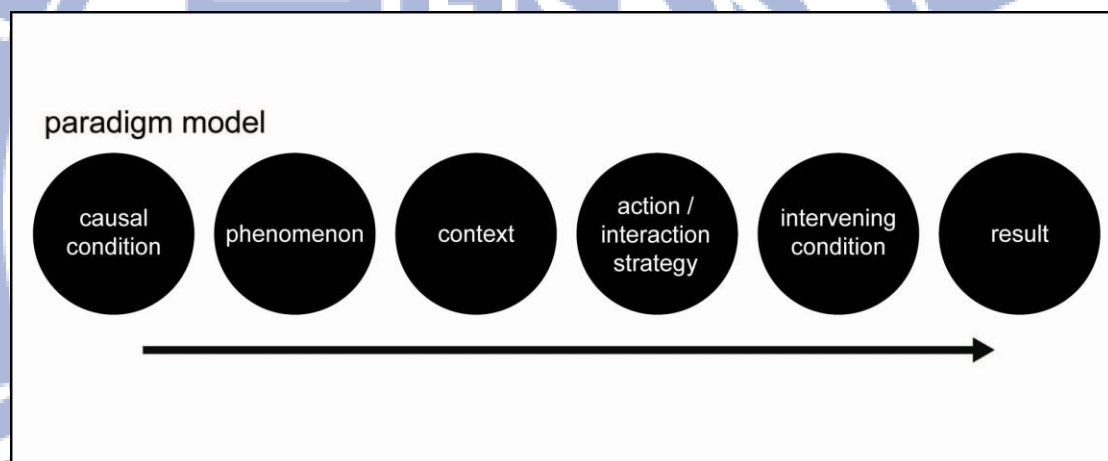


Figure 3-5 the paradigm model of axial coding

Selective Coding

In this step, a main category (figure 3-6) is selected from the categories which are developed in axial coding procedure as the theory's core to link other sub-categories systemically. A theory with complete explanation is produced in this step, so there are two notes for this goal. (a) The story line must be clarified to tell the whole phenomenon analytically, (b) the sub-categories are linked through the paradigm model, (c) the relationship among these sub-categories are filled within high denseness.

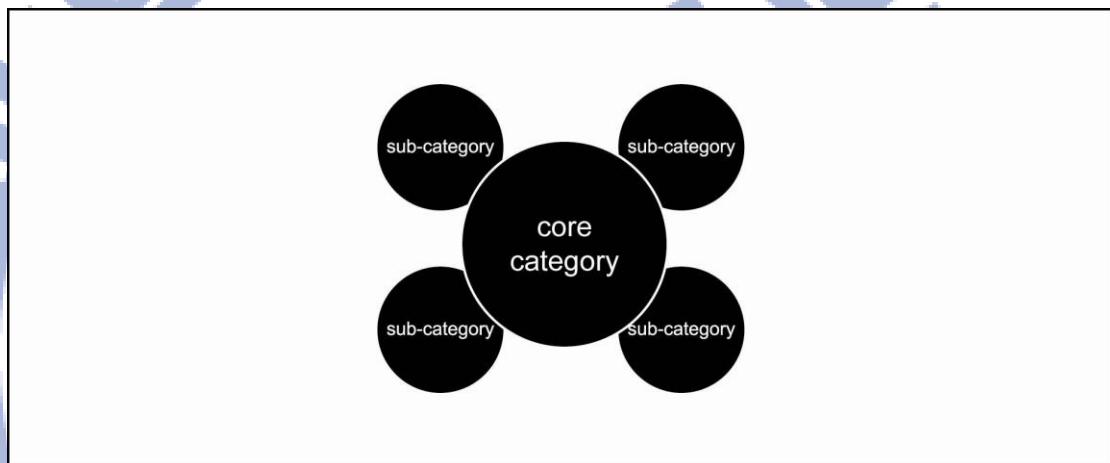


Figure 3-6 the simple structure of selective coding

Chapter 4. Findings and Results

In this chapter, the results are delivered from the methodologies mentioned in the previous chapter. The first part includes artifact model and open coding which reveal the concept labels and properties from different interactions. The second part which includes main categories within paradigm models is revealed and explained. At the last part a theoretical reading pattern is proposed to illustrate the whole phenomenon of this research.

4-1 Artifact Model

Figure 4-1-a shows the overview of artifact model which is consolidated from the received data and interviews. These artifacts present the information of the participants' using patterns, including the appearances and environmental distinctions. In the center of the Figure 4-1-a is the material book, which is our mainly discussion; and the sub-groups of artifacts are around the material book that they are considered as the connection between material books and people.

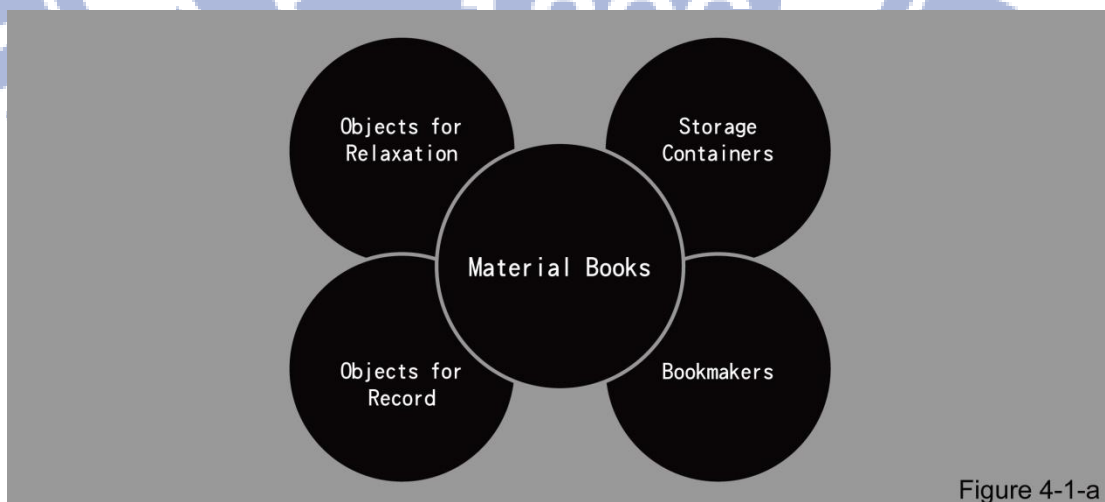


Figure 4-1-a

Figure 4-1-a the overview of the artifact model

Material Books

Figure 4-1-b reveals the structure of material books. The material books can be divided into several sections: (1). the content section: texts and picture are printed in this section and it usually located in the center of pages. Depending on the type of books, some of the participants may markup or write their opinions on this section directly. (2). the edge section: this section which is kept blank for grabbing is around the content section. some of the participants mentioned that to keep the completeness of the content section, sometimes they use this area to write their opinions. (3). corner section: depending on the contents of books, some of the participants will fold the corner of the page if they have no bookmarkers on hands.

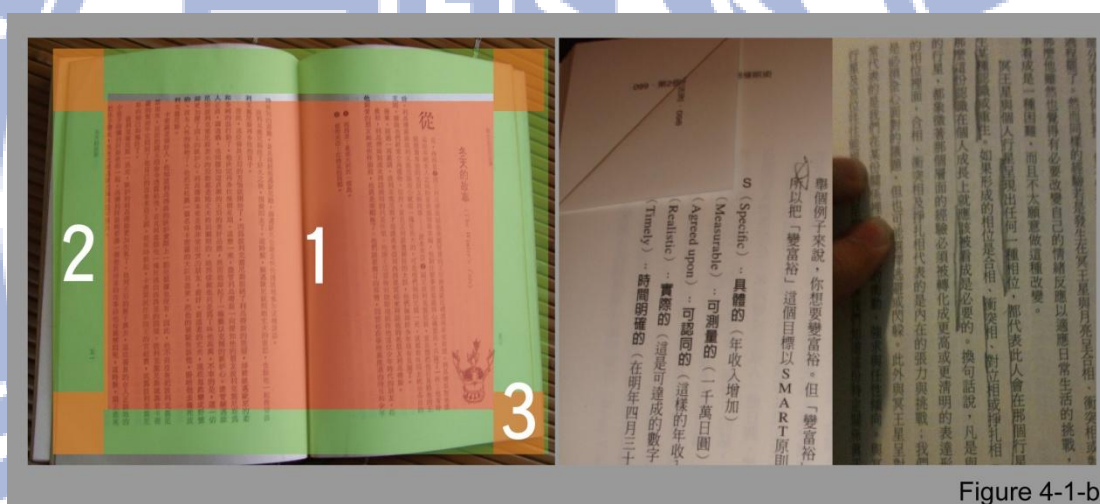


Figure 4-1-b

Figure 4-1-b the material books

Objects for Record

Figure 4-1-c, which is usually mentioned in two types, is about the artifacts of personal records. Instead of writing notes on the material books directly, some of the participants use notebooks, which are only used for recording participants' feeling and beautiful lines. In some situations they also use post-its and pieces of blank paper for the same work. No matter what types of these recording objects are, there are several common features among these objects. (1) These objects allow people for almost

unrestricted uses and they can “save” more kinds of records. It is known that they are not anything but papers, and people can copy beautiful lines, write down some opinions, note down important events, or sketching some ideas. Comparing to some softwares such as Office Word or Notepad, these “pieces of paper” can record not only information but user’s handwriting, which represent use’s emotion and habits directly. Although some tablets have the similar function, the following features make these “pieces of paper” different from digital files. (2) These objects can be reviewed and arranged discretionarily. When participants seek for inspirations or writing materials, they will review these recording pieces randomly. Meanwhile, they also try to find some sparkle when these pieces are combined and arranged in various types. However, we find that these similar phenomena in the participants who prefer digital files than material papers are rarely occurred. Even the digital recording files are not the first choice for them. (3) Material papers provide multiple sense stimulations. When users record or seek information with material papers, they are not only use their eyes to “seek”, but also use their fingers to flip pages or their noses to smell the musty odor. In other words, they “touch” these data directly.



Figure 4-1-c the objects for record

Bookmarkers

Figure 4-1-d exhibits the bookmarkers which are used in marking the process of participants' reading or the important pages. These bookmarkers have two appearances; the first type is the form of traditional bookmarkers, they are designed for what they pretend to be. There are two mainly functions in traditional bookmarkers: (1) the first one which is always the lower part of bookmarkers marks the specific page. (2) The second part which is always stand out of books notices people where it is. And it is also the showing part for bookmarkers to differ from each others. Besides, it is found that the image of "closing books" is the main reference source in the bookmarker design.(the flattened frog and the bird in Figure 4-1-c) The second type is the substitute bookmarkers, which mean they are not designed for the usage of marking pages. For example, one of the participants uses the meaningful postcards received from friends abroad, as her favorite bookmarkers. "While marking pages with these meaningful cards," she said, "It seems like my friends are always around me."

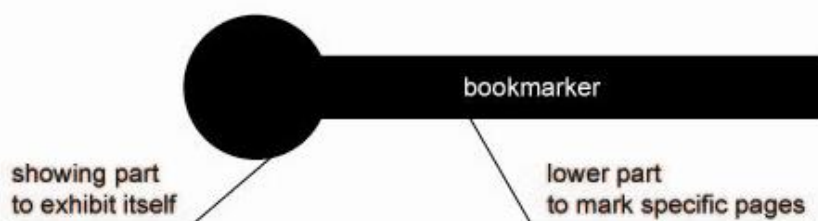


Figure 4-1-d the bookmarkers

Objects for Relaxation

The artifacts listed in the Figure 4-1-e are considered as the stuff which help participants relax themselves while reading. Although this stuff is not necessary in the reading experiences, they still reflect the reading habits, personal values, aesthetic preferences and environmental features. Although these objects have different functions in the reading process, they are still considered that they construct a optimizing reading environment cooperatively to keep people from the external interruption. For example, music player provides the theme music to separate external noise; cushions soften bodies and keep muscle aches caused by poor postures away.



Figure 4-1-e the objects for relaxation

Storage Containers

Most of participants use normal book shelves - with door or not, single or double size, they are not anything but book shelves - as containers for their book collection. But it is found that some of the participants use a “temporary area” - this area is usually close to where the participants read - as a place for the temporary stack.

In addition to storage, we also found that the participants tend to put the books thought as the reflection of importance, meaning or the specific ambiance, on the

obvious part of book shelves like a proper stature of sights. Other books, without high specialties, are put on the unapparent regions such as the corners or the deeper layers of the book shelves. On the other side, participants take the temporary area as a to-read list. This area is stacking with books and magazines which are in reading, or waiting to read. For example, one of the participants put books which are on the to-read list on a unused chair. Only the finished books can be transferred from the chair to the book shelf.

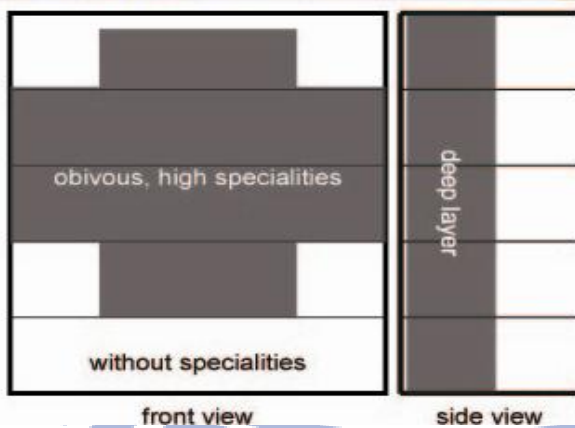


Figure 4-1-f the storage containers

According to these artifacts listed above, it is found that they are not only kept what they tend to be, but also revealing some special connection between the participants and material books such as social interactions, emotional linking, environmental adaptabilities. These detailed features will be coded and categorized appropriately in the next chapter.

4-2 Open Coding

Table 4-1, 4-2 and 4-3 reveal the result of open coding which is constantly compared, reviewed and refined. Also it shows that the interactions between books and people can be sorted into three parts: reading, collection and social interaction. The table 4-1 lists the open coding about the reading activities. Seven categories are proposed and grouped into two super-categories: “satisfaction” and “effect”. The categories named (a) solacement, (b) ritual, (c) reliability, (d) completeness of reading course, and (e) buffer are grouped into “satisfaction”; (f) self review and (g) reflection of status are grouped into “effect”

Table 4-1 open coding of reading

| Super-Category | Category | Property | Dimension |
|----------------|--------------------------------|--------------------|----------------------|
| Satisfaction | solacement | level | high / low |
| | ritual | instrument | much / less |
| | | time | long / short |
| | | type | arbitrary / routine |
| | reliability | control level | high / low |
| | | tangible feeling | high / low |
| | | quality of texture | high / low |
| | completeness of reading course | content type | fragment / whole |
| | | level | high / low |
| | | role | involved / onlooker |
| | | progress | rapid / slow |
| | | ambiance | easeful / frightened |
| | buffer | status | isolated / connected |
| location | | private / public | |
| self review | | frequency | high / low |
| | | time | long / short |
| | | level | high / low |
| Effect | reflection of status | object | self / others |
| | | time | long / short |
| | | level | high / low |

In table 4-2, which shows the result of open coding of collection contains various and complex categories. The whole table is consisted by three main super-categories: (a) possession, (b) maintenance and (c) reorganization. The possession contains three categories named “territory declaration”, “in one's reach”, “companion”; the maintenance includes four categories named ”hedging”, “protection”, ”duration” and “mysophobia”. The third super-categories, reorganization, contains four categories named “temporary stack”, “treasure hunt”, “experience transference” and “arrangement”.

Table 4-2 open coding of collection

| Super-Category | Category | Property | Dimension |
|----------------|-------------------------|-----------------|---------------------|
| Possession | territory declaration | sensation level | high / low |
| | | range | wide / narrow |
| | | attitude | active / nagtive |
| | in one's reach | range | wide / narrow |
| | | amount | much / less |
| | | awareness level | high / low |
| | companion | duration time | long / short |
| | | relation | far / close |
| | | range | wide / narrow |
| Maintenance | hedging | time | long / short |
| | | source | self / others |
| | protection | level | high / low |
| | duration | time | long / short |
| | mysophobia | level | high / low |
| Reorganization | temporary stack | time | long / short |
| | | amount | much / less |
| | treasure hunt | attitude | enjoyable / annoyed |
| | | time | long / short |
| | experience transference | type | digital / material |
| | arrangement | frequency | high / low |
| | | range | wide / narrow |
| | | type | random / order |

The table 4-3 combined with two super-categories named “expectation” and “identification” represents the open coding of social interaction. Three categories, “bestowment”, “information filter” and “spreader” belong to the super-category: “expectation” and “ownership demonstration”, “discussion”, “sense of communion” and “the reference of appraisal”.

Table 4-3 opening coding of social interaction

| Super-Category | Category | Property | Dimension |
|----------------------------|-------------------------|-----------------|------------------|
| Expectation | bestowment | frequency | high / low |
| | | value | high / low |
| | | relation | far / close |
| | information filter | source | self / others |
| | | amount | much / less |
| | spreader | amount | much / less |
| | | time | long / short |
| | | attitude | passive / active |
| frequency | | high / low | |
| Identification | ownership demonstration | alertness level | high / low |
| | | frequency | high / low |
| | | time | long / short |
| | | attitude | passive / active |
| | discussion | time | long / short |
| | | frequency | high / low |
| | | location | private / public |
| | sense of communion | time | long / short |
| | | level | high / low |
| | | ranking | high / low |
| | | level | high / low |
| | | range | wide / narrow |
| the reference of appraisal | level | high / low | |
| | object | self / others | |

4-3 Axial Coding

According to the table 4-1, 4-2 and 4-3, some categories in the following phases reveal their importance that they can be developed as the key phenomenon with paradigm model. In the table 4-1, the open coding of reading, the wuper-category named “satisfaction” is under development; in the table 4-2, the open coding of collection, the super-category named “possession” is focused; and in the table 4-3, the open coding of social interaction is proposed in the following chapter.

4-3-1. Expectation

While many participants talked about the meaningful books for them, the experience of bestowment are mentioned again and again. The phenomenon named “expectation” is usually performed when people seek for some advices. Either as a giver or a recipient, the books are not just normal books but the specific existence which represents the connection of their family and friends.

The evidence from the interviews indicates that when some difficulties force people in a corner, the book, as a present, means an indirect advice from the giver. A participant pointed that one of her friends who was known about her setbacks recommended a motivational and inspirational books immediately to help her encounter the difficulties. Another participant said that she used to select some books as birthday present for her little brother to develop his reading habit from childhood.

The table 4-2 describes the how expectation occurs and what effects it brings:

[Quote-1]

“...few days ago my boss really really annoyed me. I cannot but read the book gave from my cousin to learn.....how to accept the absurd or stupid orders.”

(Participant D)

“...I only take books as gifts for my little brother; he is only ten years old... ‘cause I wish he could have the reading habit...Only my little brother and I have reading habits in my family...so you know that..I hope he can read books as more as possible.”

(Participant E)

Table 4-4 paradigm model of expectation

| | |
|--|-----------------------------|
| Casual Condition: | |
| When people need some advices | |
| Phenomenon: | |
| Expectation | |
| Properties: | Specific Dimensions: |
| information filter | source: other |
| spreader | attitude: active |
| bestowment | value: isolation |
| | relation: private |
| Context: | |
| Expectation is performed when : When recipients get books from others who are close and actively. | |
| action / interaction strategy : | |
| provide some advices search for suitable books seek for right time | |
| intervening conditions: | |
| the deviation of experience and values have no chance realizing their situation no idea about the suitable books | |
| consequence: | |
| get close | |

It is found that there are two characters in this stage, “the receiver” and “the spreader”.

When people are receivers, no matter where the information is, they will search for suitable or helpful information about books. If people become spreaders, they will

recommend others some proper advices depending on others' demands. Almost participants are active in playing receivers. They use internet, bookstores, and interpersonal relationship to get comments, discussion and related backgrounds.

However, participants have different performances in the character of spreader. The active spreaders are used to recommend others books regularly and share their reading comments in social occasions. Some of them take it as a social tool to expand their social topics and they also have taken books as gifts in social occasions. On the contrary, the passive spreaders have no will to share their feelings in the public, social occasions. They only give their suggestions when they are asked for, and they have rare experiences in giving books as gifts to others.

Besides, we found that there are three participants who have intensive awareness of expectation in this research. All of them reveal more actively interacting performances with their families, and their experiences of "expectation" are around their family members as well. Even, some of the sample books which are relevant to "expectation" are owned jointly with their families. But other participants who have unapparent performances about "expectation" have these experiences little, and most of their books are owned by themselves.

4-3-2. Possession

Possession is an important phenomenon which is discovered when participants explained and demonstrated how they collect their books. In the most cases, possession is emerged when participants consider that the books are really belonged to them and reveal their territory awareness. They will take the special strategies to deal with these specific books which are identified as their important collections.

[Quote-2]

"... 'cause it's very expensive and limited. Yeah, I agree that it really makes me trouble if I want to read it. But packaging books with shells has been my habit because..for example, the brand new books on the bookcases are sealed. And when I finish a book, I just put book back to the plastic shell because it can prevent the book from moistness. Oh, it can also protect the book when it putted in my back bag. 'cause my bag is full of....a lot of little things. If my books get hurts, I will be upset."

(Participant B)

"...I keep my books as new ones. Even I buy more ones for my favorite books. It seems like I own the perfect, new books all the time! That is real collection! More new, more uncommon, and more worthy! "

(Participant C)

"My best friend gave me a book as a birthday gift. When I tore the wrapper, I found that I had bought the same book before! What a coincidence it was! Finally I decided to keep both of them. "

(Participant E)

Table 4-5 paradigm model of possession

| | |
|--|-----------------------------|
| Casual Condition: | |
| When the books belong to people | |
| Phenomenon: | |
| Possession | |
| Properties: | Specific Dimensions: |
| territory declaration | sensation level: high |
| in one's reach | awareness level: active |
| Arrangement | type: order |
| Protection | level: high |
| ownership demo | alertness level: high |
| Context: | |
| Possession is performed that when : people are sensitive about their territory awareness, and take some specific strategies to protect and arrange their books. | |
| action / interaction strategy : | |
| put on the obvious spots care about the preservation keep from other people | |
| intervening conditions: | |
| not enough space the deviation of values accidents | |
| consequence: | |
| be a part of the one's world | |

Two features are found in this section: “the threshold” and “the attitude”. The threshold which is preformed in the quantities of their books is polarized into two opposite performances named “the swallowed” and “the picker”. The “swallower” means people that if there is any book they have interests in, they have desires to get the book by any means. It cannot be thought that they have the lower standard for collections, but it can be thought that it’s a kind of collecting addiction.

On the other side, “the pickers” always take books as a kind of information carrier. They care more about the ownership reading experience rather than physical books. One of the participants with “the picker” property regards books as tradable assessments to exchange other books. Even they sell these books just for cash. In other words, the pickers put more attention on the accumulation of reading experience than the quantities of books under their controls.

Similarly, the other feature, “the attitude”, is polarized into two opposite performances named “sacrosanct” and “coexistence”. The first one, named sacrosanct, means that if people consider a book as one of their collections, they will make every effort to keep the book in the “perfect” status. It sounds like some kinds of mysophobia or virgin complex because people with this performance cannot stand any sullies of their books like creases, stains and fading pages. Many precautions for protecting books are brought to implementations such as extra covers and controlled temperature. Besides, some of the participants will buy another extra book only for their storage if they really want to collect. The most extreme example is that a participant replaces her favorite books regularly if the books are faded to keep depreciation out. For these people, the books in their collections have an unique, divine and precious place.

[Quote-3]

“In that time, I had an idea that just tie them up to the second-hand bookstore, because I had no more space for my books! But...in the end I just cut the rope and putted them back. I can leave them....until another suitable owner comes up.”

(Participant E)

On the contrary, another side named coexistence has the different performance about the books. People in coexistence do not show any special treatment for their books. It does not mean that they don't care about their books but they take books as a part of their lives. They have a merciful attitude for their books and consider the traces as mark instead of stains. For these people, books which are scattered casually and clogged in the apertures of their environments are being in the "invisible" sights. One of the participants said that there are too many books that she has already forgotten the positions. But she takes the searching process as treasure hunting and she really enjoy it.

[Quote-4]

"...from that you can understand my dad and I don't really care about the books'.....status. Well, you know, some are really really care about their books. Uh, what's the term they called? Paranoid? We ain't that kind. We don't intend to fold or maltreat our books, but when you are reading, you just cannot control your fingers! (laugh) "

(Participant A)

"my books just "spreading" around my room, you can see(pointing the photo) they are on the ground, desk, my bed...they are everywhere! My books are overflowing!! "

(Participant E)

"...if I cannot find the book...well, it doesn't matter 'cause I know it is being there! "

(Participant E)

From the finding above there is a coordinate map, figure 4-2, that consisted by two axes which have been described. The horizontal axis is about “the threshold” and the vertical one is about “the attitude”. All the participants’ performances of collection are reflected and on this map. The positions of these participants are located by comparing each by each, not by any some kinds of measuring methods.

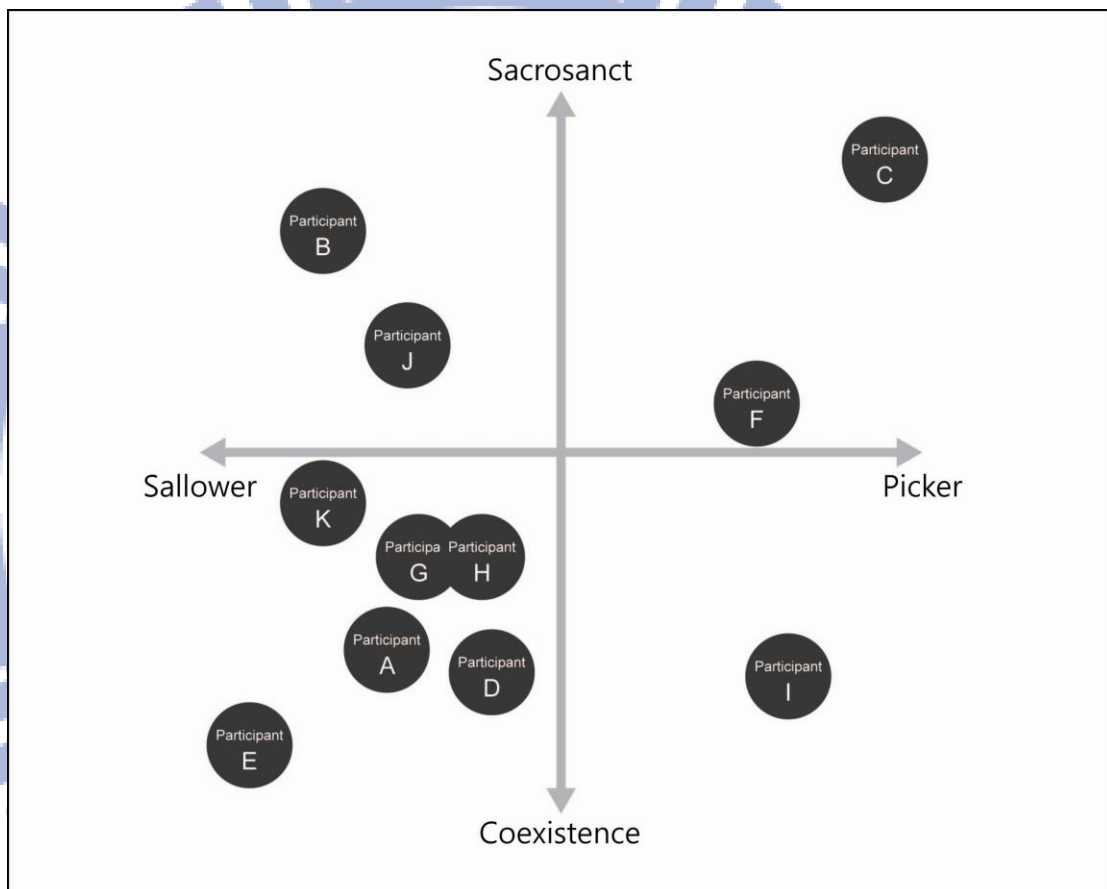


Figure 4-2 the coordinate map of collection performance

According to this coordinate map, most of our participants are located in the third quadrant which is constituted with “coexistence” and “swallower”. However, in other three quadrants there are several participants are sited. It is necessary to compare the different performances from the four quadrants. Therefore, the following are the participants who reveal distinguishing manifestations: participant B, participant C, participant E and participant I.



Figure 4-3 the environment of participant B

Participant B who located in the second quadrant has two features: “sacrosanct” and “swallower”. Figure 4-3-b and 4-3-c show the huge and abundant collection of participant B. In the same time, it is shown that most of participant B’s books are covered with extra slipcases (figure 4-3-a to 4-3-b). Figure 4-3-c to 4-3-e also indicate the lack of participant B’s space that she need to use any vacancy for placing books.

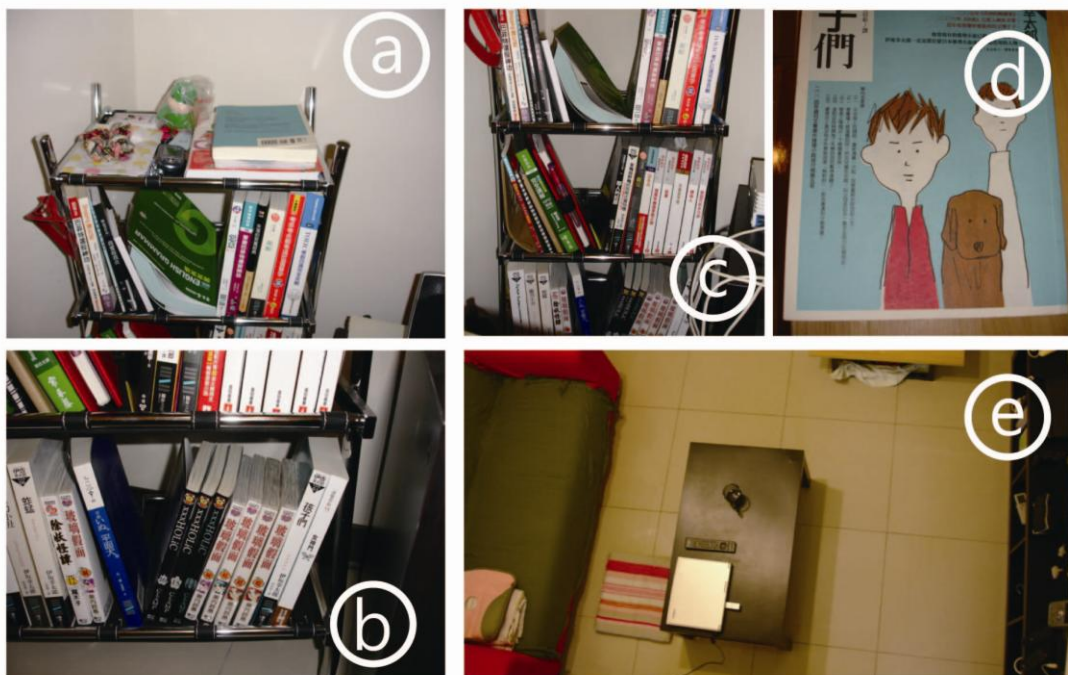


Figure 4-4 the environment of participant C

Figure 4-4 shows the environment of participant C located on the first quadrant with “sacrosanct” and “picker”. The collection of Participant C is limited in a little bookshelf (figure 4-4-a to 4-4-c). According to the interview, the space of this little bookshelf is sharing by participant C and her roommates. The top floor is assigned as the area for exchange or sale, the second and middle floor is the sharing spaces, and the bottom floor is for participant C’s collection. Instead of the protection strategy from participant B above, participant C always buy the same and “new” books to replaces her “old” ones regularly that keep her collection in the “perfect” situation.



Figure 4-5 the environment of participant E

Participant E is located in the third quadrant consisted with “coexistence” and “swallower”. Figure 4-5-a, 4-5-b and 4-5-e show that participant E’s abundant collection and environment. Participant E mentioned that she does not care the source of books she wants and that means she is willing to buy used books (figure 4-5-d). Also, she treats these books as normal stuff that some unexpected usages are

performed such as pot mats or the filler of the gap between the chair and the floor (figure 4-5-c).

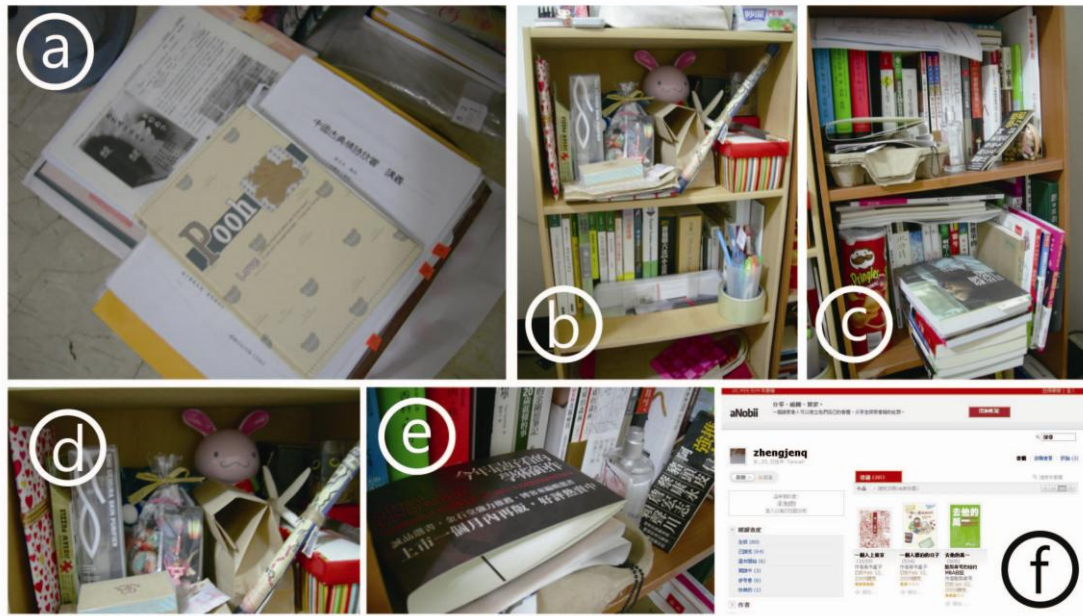


Figure 4-6 the environment of participant I

Participant I is located in the fourth quadrant which is constituted with “picker” and “coexistence”. She arranges her books into two little bookshelves, one is for her collection (figure 4-6-b), and a small number of books are allowed in this bookshelf. In contrast with figure 4-6-b, the other bookshelf is assigned for the exchange and sale (figure 4-6-c). Although she mentioned that she has no will to keep most of the books she has read, an interesting thing is revealing her desires for collection quietly. After finishing a book, she is used to placing the “virtual book” on the bookshelf of the website to prove what she has read.

4-3-3. Satisfaction

Table 4-6 is the paradigm model of the phenomenon named satisfaction which is usually occurred when people are isolated in their private spaces with high sense of control can explain what people desire during their reading courses.

Table 4-6 paradigm model of Satisfaction

| | |
|--|-----------------------------|
| Casual Condition: | |
| When people read books | |
| Phenomenon: | |
| Satisfaction | |
| Properties: | Specific Dimensions: |
| Solacement | level: high |
| Ritual | time: long |
| Reliability | control level: high |
| Buffer | status: isolation |
| | location: private |
| Context: | |
| Satisfaction is performed when : People are isolated in their private spaces with high sense of control in a long time. | |
| action / interaction strategy : | |
| make highlights write some notes sharing their thoughts | |
| intervening conditions: | |
| without appropriate information carriers not enough approaches to express their feelings | |
| consequence: | |
| self review | |

In these cases the reading activities which contain some certain procedures, specific instruments, regular time and location are considered as a ritual. For example, when they want to read, they just use some specific bookmarkers, just listen certain types of music, in certain places and times. In this research, it is found that no matter what kinds of participants, they have developed their own reading rituals that the reading activities only occur if the conditions they concerned are met.

[Quote-5]

“In my place, I always turn on the TV when reading. I turn the sound off, just let the screen flickering...it seems like a company for myself.”

(Participant A)

“Every time I prepare myself for reading. For example, I will prepare some drinks for the certain book, turn on my laptop.....only when all things are prepared, I will sit down and ready to read. It seems like a ritual, my reading ritual.”

(Participant C)

“The bookmarker is indispensable to book reading! Just like popcorn is indispensable to movie!”(閱讀時一定要有書籤!! 就像啤酒一定要配炒花枝!!)

(Participant D)

“I'd rather read without bookmarkers If I don't have any proper bookmarker on hands.”

(Participant G)

“Because my back cannot allow me sitting for long time, so I try to make myself comfortable...finally I always read books for one, or half an hour before sleeping.”

(Participant K)

Furthermore, what the participants need in reading courses has a properties named “buffer”. Most of our participants take reading as a way to escape from the “real” world to isolate themselves from others. They try to use the character’s view, or we called they are “possessing” the character of the book, to experience the whole plot. In this stage, they have some emotional expression such as crying, laughing or raging. In this period, some of the participants are immersed and cut their connections keep from any interference. They just stand alone in their private spaces.

[Quote-6]

“You will get into another world.”

(Participant E)

“Writing is a way to release your complex and spilling emotion, it’s a kind of garbage can; (reading) opening the door to go into other’s world is also a way...to escape yourself.”

(Participant E)

In contrast, the other participants do not show their emotions too much while reading. They might go to some public environments like coffee shops to read with their friends. They wish the environment outside can maintain its limit existence to prove their beings, what we called “being in the unconscious environment intentionally”. That means before reaching the critical point, these participants can stand and enjoy the environment.

Finally, the most noticeable feature of books in the reading course is thought as the reflection of reader's status. Depending on their demands and needs, the participants select different kinds of books to fit their situations such as relaxing, thinking or browsing. One of the participants mentioned that every night before sleeping, she want to read the certain pages of the same book which are thought as a source of encouragement. Another participant takes books as awards when she finish some works.

[Quote-7]

"My dad is just a little...paranoid, and sometimes he try to prove his thoughts by reading certain books. You can realize his position by observing his books in different stages."

(Participant A)

"...depending on my mood. Sometimes I need a kind of gentle book...without frustrated contents. Anyway, I will select a right book to fit my mood."

(Participant J)

4-4. Selective Coding

According to the indication of selective coding, a core category must be chosen as the core phenomenon in order to establish a theory. Figure 4-7 shows the theoretical structure which consisted by three main phenomena described above: satisfaction, possession and expectation linked by the core concept named "acceptance".

Although it is illustrated as a linear and two-way process from expectation, possession to satisfaction, the starting point and end point are not found and addressed in this structure. The core concept named Acceptance is considered as the "switch" to

connect the each main phenomenon. It means that the influence produced from each phenomenon will be blocked if people reject it. It might be one of the reasons of the different treatments of books.

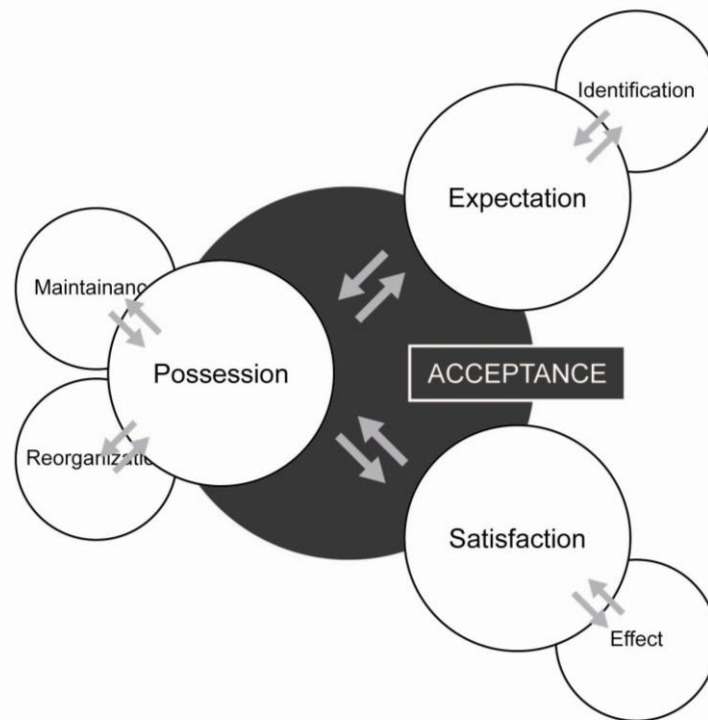


Figure 4-7 acceptance theory structure

Based on the fundamental structure, the following is the detailed content of acceptance theory. When people interact with books from one stage to another, there is a abstract gap named “acceptance” to hold. In figure 4-8, there are different situation when people go through the acceptance theory course: (a).No matter what event occurs in the social interaction, such as bestowment or asking for advices, people receive the information of books. It means, the user is informed. (b). Once the user allow the book to get into the user’s world, the book is starting with special meaning; that means it is accepted. (c). the accepted book will be set in the temporary area and waiting for reading; that means it is on the list. (d). Depending on user’s requirement, the book is chosen to meet the user’s need; that means, the book is

chosen. (e). when the user reads and interacts with the book, the personal habits and experiences are recorded in the book; that means the user pours himself / herself. (f). According to its content or attaching meaning which is developed in the reading stage, the book will be arranged by use's preference; that means, it reflects some parts of the user. (g).the relationship between the book and the user is detected by observing the arrangement of books; that means, it reveals the book's status.

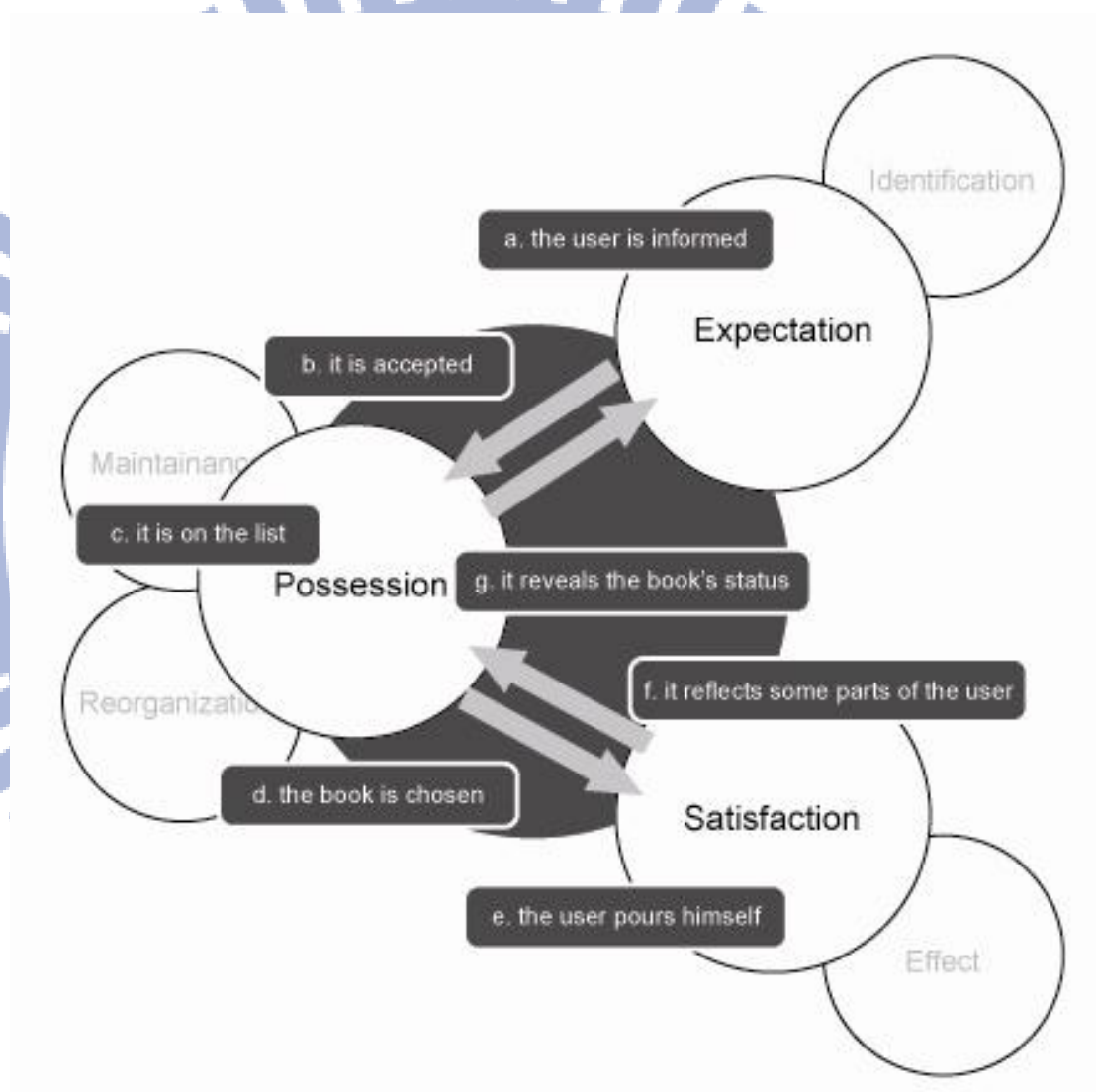


Figure 4-8 the detailed acceptance theory

4-5 Brief Summary

Based on the steps of grounded theory, the complicated and various data are transferred into the meaningful abstract concept labels and sorted into three main interaction at first. Then, three main phenomena are picked and developed via paradigm model to complete their causalities. The process and details of these phenomena are also described and introduced like the coordinate map. In the end of this chapter, an acceptance theory structure is proposed and all the meaningful categories are linked together. In the next chapter, the arguments and discussions are proposed to illustrate the process, causalities, and the theoretical mechanism of presence



Chapter 5. Discussion

The arguments and issues brought from the previous chapter are proposed and discussed in this chapter. First, the characters of physical books in the three phenomena consisting the acceptance theory are discussed because they are thought as the factors of presence between books and participants. Second, the mechanism of presence and how presence might be performed are discussed. Finally the design implications for e-book reader and interaction designers are proposed.

5-1 The Character of Material Books

The purpose of this thesis is tracking the contexts of interactions to find the presence. Chapter four exhibits the important phenomena and the contexts. In the following sections, the character of material books in the three main interactions, social interaction, reading and collection, is proposed and discussed.

5-1-1 Books are the paragon of future

Gifts are commonly understood as something represents social relationships, personal memories or benedictions (Sheumaker & Wajda, 2008). The artifacts which are given from the participants' friends are taken as the representations of their past experiences, relationships and signification (Dant, 1999), such as bookmarks, postcards and photos. However, beyond the features above, books have a unique property which is distinguished from other meaningful artifacts: expectation.

According to chapter 4-3-1, the paradigm model of expectation, it shows that books given from others not only represent the wishes but also the paragon. It makes books become an expectation in the future, not just normal books nor any other objects.

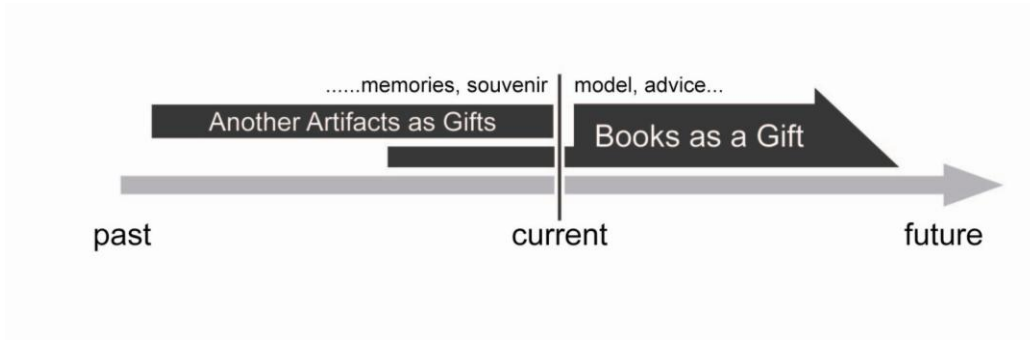


Figure 5-1 the character of books as a gift in social interaction

[Quote-8]

“...He gives me books as birthday presents every year. In the previous years, he always gave me books about art and design. One year, I suffered many hardship with my family. I felt confused and frustrated about myself. At the birthday of the tough year, he just gave me a special book without any word. It was about how to deal with troubles and frustrations.”

(Participant E)

5-1-2 Books are self recorders and triggers

The context of satisfaction found in 4-2-3 describes that participants are satisfied in the reading courses. The following question is that how it goes and records?

Participants always associate their experiences with the reading feedbacks while reading. They used to projecting their own life experience into the contents of book like putting their desires into some certain plots and empathizing with the characters of the books. It is to say that reading is a two-way process between self pouring and self parting. On the one hand, ideas which cannot be realized are deposited by participants into books. On the other hand, participants seek for possibilities from books to make their ideas in practice. It is a personal and private experience for each

participant that they have no willing to share with others. Some of the participants pointed that they hope these specific feedbacks which are produced via personal experience can be kept from other people. It can be named a kind of experience monopolization, or considered that people pour themselves into books, the “ensoulment of books” as well (Nelson & Stolerman, 2003).

The books become very important in this process that they play the role with double faces: the recorder and the trigger. In this process participants enjoy the textures of papers and they are indicated by fingers. In the same time, their emotions are changed with plots which are revealed by every flip ups and down. These traces, which are proposed in chapter 4-1 artifact model such as creases, stains, sweat and fading pages are recorded and become the experience triggers to enhance the next reading experience.

[Quote-9]

“...it’s a book with positive power. When I felt disappointed, all I need to do is reading this book to calm down. It’s very useful.”

(Participant C)

Furthermore, these traces also affect the reliabilities of participants. Depending on the interviews, most participants prefer reading in the physical books because abundance of physical books can provide superior reading experience than others. A participant mentioned that while searching for the medical information of her jobs, the published books and periodicals have priorities and digital information are her secondary concern.

[Quote-10]

“...maybe I love this story too much. Especially in some marked parts I usually read them again and again to feel deeply. So, if a book is marked densely, it means that this book is read again and again.”

(Participant K)

“The pages of books are wrinkly because of my sweats. The pages become more and wrinklier with the coming of the end.”

(Participant K)

From the discussion above, it is known that the physical books use the material properties to enrich people's reading experiences. Through these processes, participant's mental boundary is enlarged and the traces which conserve the personal experiences become the triggers for the next reads.

5-1-3 Books are the silent expressions of self

The coordinate map which is proposed in chapter 4-2-2 illustrates the performances of the threshold and the attitude of the possession. It is considered that possession is a way for self expression in the real world. The participants identify themselves with selection of different artifacts (Csikszentmihalyi, 1981) and build the image to express their lifestyles and values. In other words, the possession means that these artifacts belonged to someone are parts of the owner. Similarly books' materiality reveals their owner's character and cultural authenticity (Sheumaker & Wajda, 2008). The furnishings, arrangements and decorations of participants are the expressions performed under their unconscious preferences to display the real self.

[Quote-11]

“the favorites...represent yourself. If one day some guys come to your place, they might realize you deeply by seeing what you have in your book shelves.”

(Participant K)

“...these inferior books are arranged to the corner...to hide. I think some specific stuff, such as DVD and book, are expressing your taste. Of course people wish their tastes are accepted with others...I think the stuff are a kind of mediation to interact with other people.”

(Participant K)

“You can find that these books (photo) are not publishing in these days...They seem to be there for a long time. So you know these books are his collection. I mean, I'm not sure it is a common rule, but you can judge or understand a person from his books. It is a direct and best way to realize the other side of him.”

(Participant K)

5-1-4 Brief Summary

The meanings of the three performances discussed above are considered as the related factors of the presence. However, what we care about is the relation between presence and interactions. How the presence is produced and organized among the interactions is discussed in the following step.

5-2 Where is the presence?

After realizing the character of physical books in reading, collection and social interaction, the more important issue is that where is the presence? The mechanism of presence among the three interactions is shown in the figure 5-2, which is also indicated the stratum of interactions. It can be observed that the whole structure is consisted by three concentric circles from the inside out. The innermost circle

represents reading interaction, which is concerned the closest relationship with ego in this research. The middle circle represents the interaction of collection and the outer one represents the social interaction.

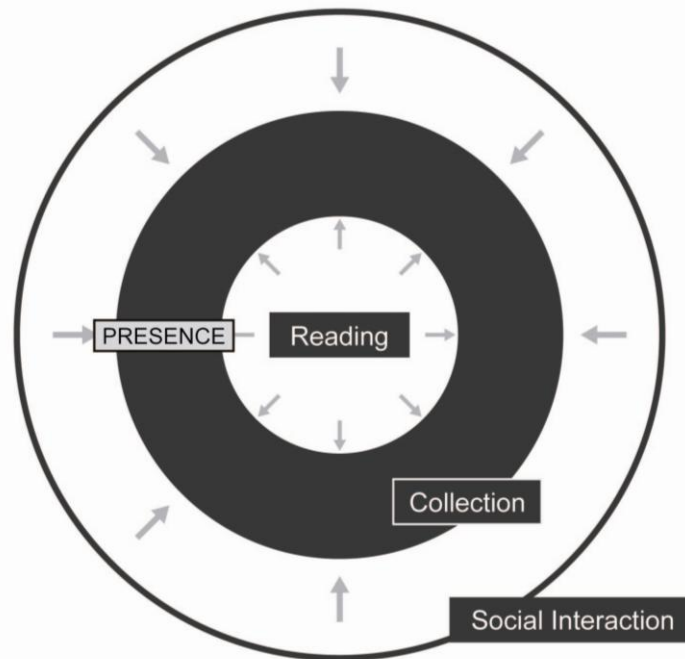


Figure 5-2 the Presence Model

There are two forces in this model, which are sourced from social interaction and reading, compressing each other from inside and outside. The force inside is driven by reading interactions, which leads people to the process of pouring themselves into books. On the other hand, the force outside is imposed by others' evaluations, social communities or culture habits. The presence, as the definition of this thesis, is shaped and "extruded" between the two forces above and finally it is performed at the span crossing from the end of reading interaction to the end of social interaction. This presence model is inspired from Condition Matrix of Glaser and Strauss (1967) and it can demonstrate the changing of presence.

Figure 5-2 which provides a basic and theoretical understanding of presence mechanism emphasize that presence is sourced from the contexts of social interaction and reading. It can be thought that in social interaction and reading stages, people are not conscious of presence. Until going through the process of “acceptance theory”, they will aware the presence and take these books as “particular beings” in the “possession” phenomena. It also implies that every book in people’s book shelves has its own presence, but it can’t be aware without any simulative clue. The culture probe, which is introduced and applied in chapter three, is designed to help participants find the books with high presence.

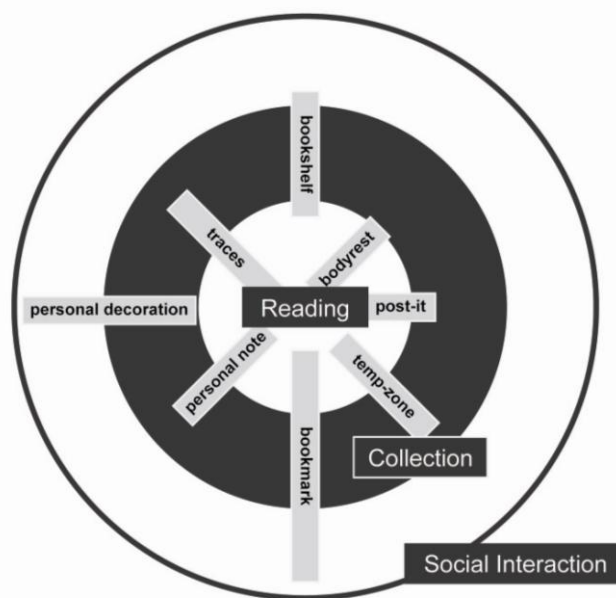


Figure 5-3 the Presence Model with Artifact Model

Meanwhile, this presence model can be combined with the artifact model proposed in chapter 4-1 as Figure 5-3 above. Figure 5-3 is the result of combination with artifact model and presence model. The artifacts involving with the interactions between books and people are labeled with different lengths. It means the position and duration of the involving artifacts. In addition, it can help designers understand the relationship between artifacts and people among the interactions. For example, if

designers focus on the certain reading interactions, they will find that the personal decoration and bookshelf have nothing to do with people. If they want to develop the interactions with communities, the post-it can be ignored. In short, this model distinguishes the importance of artifacts.

Another noticeable issue is the presence of ebook after realizing the presence of physical books. Based on the findings in chapter 4-3 and chapter 5-1, the physical books can be thought as “physical carrier” and “abstract content” apart. People contact and respond with “abstract contents” by interacting with “physical carriers”, so it is to say that the “physical carriers” are not only printed with contents, conserving the traces of use, but also recording people’s emotions. Furthermore, the physical carrier and the abstract content in physical books are bounded together; that means, the book, which interacted with the user, is getting different from other “same books”; it can be thought that the book becomes privileged and monopolized.

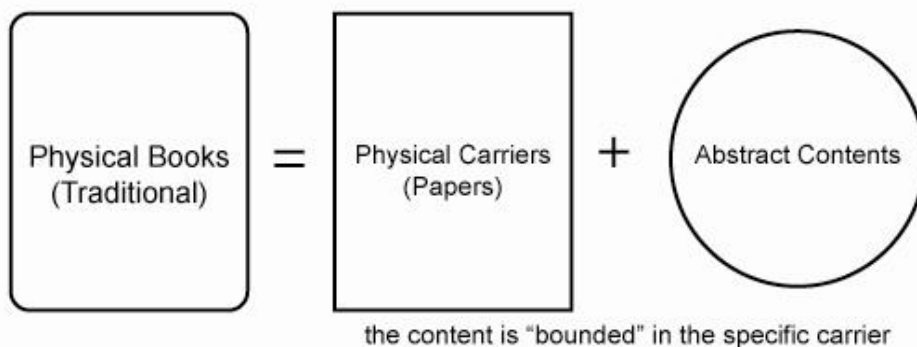


Figure 5-4 the relationship between carriers and contents of physical books

However, the physical carrier and abstract content are separated in ebooks. Although it allows people reading the abstract contents with different, non-specific carriers, such as laptops, smart phones, tablets, it also lost the unique, contextual, connecting relationship between physical carrier and abstract content. How do people read,

respond emotions, reflect traces and pour themselves when they realize the carrier is not the only one for the abstract content? It might be called as “lost of self-commitment”.

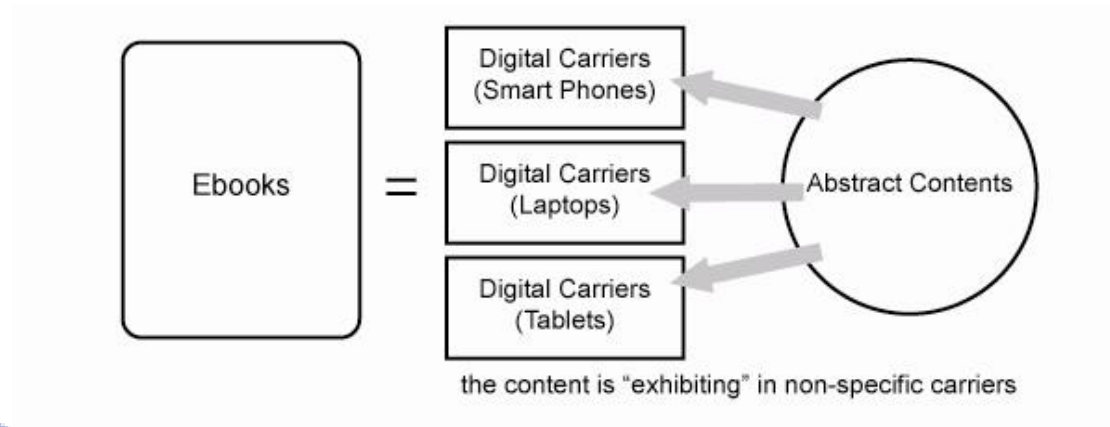


Figure 5-5 the relationship between carriers and contents of ebooks

5-3 Design Implications

After the discussion about the context of acceptance theory and the mechanism between presence and interactions, the design implications are proposed for e-book-interaction and e-book-reader designers in the following phases.

5-3-1. E-book Must Be Personalized

Participants consider that they are possessed with “their books”, that means, the books are not any book but their books. They take kinds of strategies to make their books differ from others’ “same books”. However, it cannot be distinguished from others’ e-book because most of the current e-book-services take e-book as a “digital file”. The new e-book interactions should be opened for users to meet their desires of self-projection and self-division.

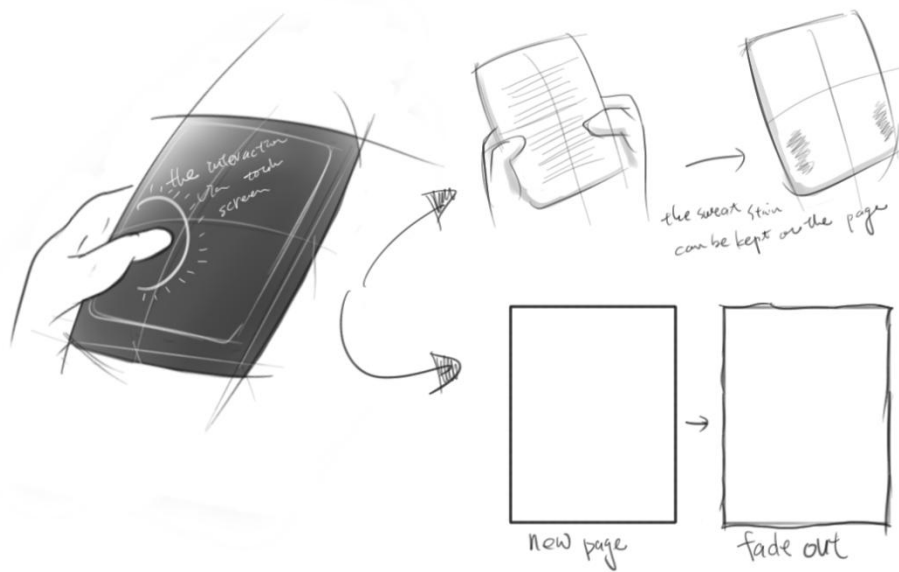


Figure 5-6 the concept sketch of traces

a. The Traces Should be Carved and Reflected

People's reading habits are various and complex that they can reflect their own loyalty. These traces which are produced during the reading courses make books meaningful and unique. For example, the common feature of physical books is the folding corner thought as "something important here" or "where I have read". Besides, if people keep reading the certain pages, these pages will become wrinkly and the edges of these pages are also smudged. The new e-book interactions and readers should represent these exquisite and minute traces (figure 5-6) to enhance the presence and richness of reading experience.

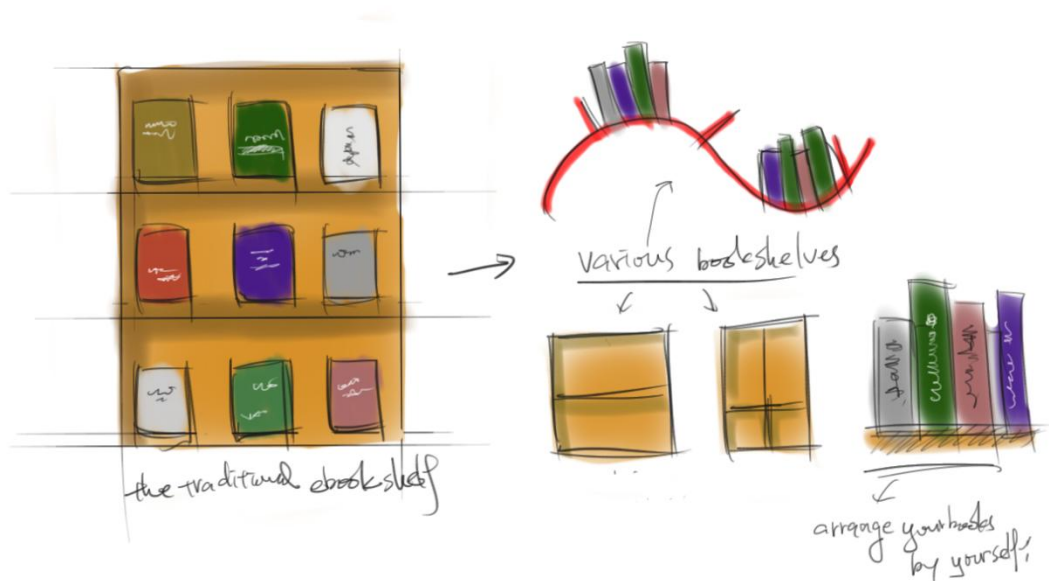


Figure 5-7 the concept sketch of collection

b. The Collection Preference Should be Appeared

In the chapter 4-2, the various performances are discovered and revealed the different treatments based on “the threshold” and “the attitude” of people. Some people cherish their books as the treasure but some as the stacks of printed papers. It is important that the new e-book service should allow users to collect as their wills which has been applied in many entertainments like online games instead of arranging these books monotonously (figure 5-7). In short, high control and freedom are necessary for user in collection.

5-3-2 The Representative Materials Should be Supplied

No one denies that digitalizing reduces the waste of resource and eliminates the storage spaces. Yet, just as the artifacts often help to articulate distinctions among cultural communities, the books’ material forms also have functioned as markers of social class, signaling wealth and taste (Sheumaker & Wajda, 2008). For example, everyone agree that digital music like mp3 format is popularly shared, listened,

transmitted and copied nowadays. But still, there are a lot of collectors infatuated with vinyl records and discs distinguish their tastes from the public. Hence, the representative material is suggested that it might be the cover, or a part of the book (figure 5-8) as a proof of users' ownership in the real world.



Figure 5-8 the concept sketch of substantiation

5-3-3 The Connection with Other Users Should be Enhanced.

According to the chapter 4-3-3 and chapter 5-1-2, it is known that traditional interactions between books and people are personal and private. In addition, lacks of convenient and efficient communications are found which might make the participants have no proper way to share their thoughts with others. However, most of the current e-book-services do not focus on the interaction among reading communities. If the superiority of digital technology are developed, the e-book will not only become a information storage but a emotion and experience carrier to connect with others.

5-4 Brief Summary

In this chapter, the character of material books and the concept of presence are proposed, including their properties and mechanism model. According to the discussion above, the material books are not only the carrier of information but the reflection of users themselves, and the presence is sourced and shaped from the forces of social interaction and reading process, and performed in the Possession phenomena. The presence model also shows the duration and affection of artifacts which are used in the whole interacting context. Finally, three design demonstrations of ebook are exhibited the potential possibilities of the “design for presence”.



Chapter 6 Conclusion

This thesis, through culture probes, interviews and grounded theory, investigated the interactions between physical books and people and illustrated the theoretical relationship of presence. The review of the findings and discussions, the contribution and recommendations are proposed in this chapter.

6-1 Conclusion

Two main objectives were investigated in this thesis. The first one was exploring and analyzing the diversity of interactions between books and people. Open coding showed three main interactions: reading, collection and social interaction. During the axial coding step, three key phenomena corresponding to the interactions above named satisfaction, possession and expectation were found and developed with paradigm model. In the satisfaction aspect, people seek for a buffer between themselves and outer environments and books become the minors to reflect the status of them. In the possession aspect, a coordinate map consisted with “threshold axis” and “attitude axis” located the complex performances of collection. In the expectation aspect, the difference between book and other artifacts was identified that books in the social interaction context represent “an indirect advice”. Finally, the “acceptance theory” was proposed that all interactions between books and people are related with the concept: acceptance.

Second, after reorganizing the relationship of interactions, a theoretical structure was illustrated to explain the mechanism of presence among three interactions. Presence was located between two forces which produced from reading and social interaction as a transitional span over the collection. The artifact model was combined into this

presence structure to provide a widely clear view of presence, interactions and artifacts for e-book designers.

In the end, several design implications were suggested and created the potential possibilities of e-book design. (a) The ideal e-book should provide personalization and high control to meet the various demands of users such as reflecting the reading habits, (b) different collection preferences, (c) substantial representation, and (d) connection of communities.

However, the unavoidable deviation which is caused by the emphasis of the specific age group and gender must be concerned. The unobvious data performance which is produced by the limitation of research methods shows the lack of Social Interaction.

And the data of interaction about family and communities which are filtered and ignored in the coding step in Chapter 4-1 and Chapter 4-2 may lead to an incomplete theory structure.

6-2 Contribution

This thesis leads a new point of e-book researches which put their focuses on the “use” aspect for designers. At first, it simply but obviously exhibits the contexts between artifacts and people. Besides, it reveals the notion about what people really care and how they will do with books, and its implications also demonstrate the possibilities of future e-book designs. In addition, it can inspire designers’ thinking from the functionality to the meaningfulness. For designers and researchers, this thesis also settles the groundwork and provides a new approach to explore the relevance of presence, artifacts and people.

6-3 Recommendation for Future Works

After this research, several potential issues are listed beneath and waiting for researchers to explore in the future.

a. Although the design implications were proposed in this thesis, it's important that how the effects have and what the prototypes might be in practice are waiting to explore, and the measuring and evaluating methods are waiting to be discussed.

b. The relationship of presence and artifacts was proposed theoretically. However, the artifacts' characters and the influences of other artifacts which shown above do not be discussed in this thesis. Moreover, the proper "appearances" of these meaningful artifacts in e-book design are worthy to explore in the future researches.

c. According to the findings of this thesis, people adapt themselves to fit their needs with the changes of contents. For example, reading novels, studying textbooks and browsing magazines have their own specific scenarios and demands for users. These scenarios and their contexts are thought as another important issue of presence.

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Appendix A: Probes

| | |
|---|--|
|  <p style="text-align: center;">說明手冊</p> | <p>第一部分 環境記錄</p> |
| <p>主題說明</p> <p>您好！</p> <p>本研究主要目的在探索閱讀愛好者的生活環境、閱讀網絡與閱讀場域中出現的各種物件之間的互動關係。本研究採用「探針調查法」，利用三種不同的活動記錄方式，透過回收的資料解讀研究者能分析，進而理解閱讀愛好者的與書本互動的態度與因素。</p> <p style="text-align: right;">活動期間如有任何問題，煩請隨時與我聯繫 聯絡方式：0910-219-082 kopu.lin@gmail.com 林珂寶</p> | <p style="text-align: center;">活動說明</p> <p>請將相機拍下你最高興閱讀的連續「書籍」三到五張不同角度的照片 (照片拍攝者要對的角度，並有書頁上、書脊與封面的角度，並拍攝書架的構造等注意事項)</p> <p>利用附件中的空白地圖 簡單畫出拍攝環境的上視圖並加點文字說明</p> <p>並在表格環境中，挑選</p> <p>(1)三種在閱讀中會使用到的物品 (2)三種對你而言意義特殊的物品 請將它們拍下來在記錄卡中間單地擺放出來 (註)若這些物品量多，也請分別拍下並註明名稱</p> |
| <p>本研究前期活動分為三大部分：</p> <p>第一部分是環境觀察，透過拍攝、手繪及文字形容等方式來讓你介紹你的閱讀環境中，有那些平常被忽略的物件。</p> <p>第二部分是閱讀經驗與書本互動，透過不同的題目包含挑選不同的書籍後，一樣透過拍照與簡單文字說明的方式介紹你與這些書之間的互動關係。</p> <p>第三部分是繪畫日記形式，在為每一週之間，紀錄下您從事與書本相關的活動，同樣透過簡單的拍照與文字記錄方式加以呈現。</p> | <p>第二部分 書本互動脈絡</p> |
| <p>資料袋內有這些物件</p> <p>當您打開這個活動袋時，活動袋內會已包括以下物件物品：</p> <p>(1). 請問這本共四本冊、標題為「說明手冊」、「活動紀錄」、「書本記錄」、「環境記錄」</p> <p>(2). 一份用牛皮袋裝著的空白地圖</p> <p>(3). 一只已內建資料夾的隨身碟</p> <p>(4). 一組色筆</p> <p>(5). 一份所有回收的資料回收袋</p> | <p style="text-align: center;">活動說明</p> <p>每個人的閱讀都有各自不同的原因與故事 請將下列的活動請你根據不同的條件，逐一回顧這些故事</p> |
| <p>照片等數位檔案</p> <p>當您將拍攝的照片傳入資料袋內附的隨身碟時，您會發現隨身碟內已經建立以各種活動命名的資料夾，請您依照不同活動放入拍攝完的照片</p> | <p style="text-align: center;">執行方式</p> <p>Step 1 首先，請確認隨身碟內有存儲物件的權 (例如：代表我自己，約一本書)</p> <p>Step 2 在書架之前，請先拍攝包圍感角度的照片 (例如：從書架拍攝下)</p> <p>Step 3 取下來，請依據環境與書籍中你選定的「書籍」照片，照片 (例如：有書架的照片、書架、手繪等)</p> <p>Step 4 最後，選擇一段簡短文字填寫在記錄卡上</p> |
| <p>關於資料回收</p> <p>當您進行完這些活動時，請利用內附的回郵資料回收袋，將全部資料包含「手冊」、「地圖」、「隨身碟」等物品寄到下列地址：</p> <p>新竹市東區大學路1001號 國立交通大學人社一館應用藝術研究所 林珂寶 0910219082</p> <p>收到資料後，會立即與您聯繫方便的話談時間</p> | <p>第三部分 書本活動日記</p> |
| | <p style="text-align: center;">活動說明</p> <p>請由收到活動包的隔天開始 每天記錄下物件與書本有關的活動記錄 (例如：今天看了一本你不愛的書，是X仔介紹給我的...) (下午去書局買了一些小說，發現了一本內容很有趣的書...) (00:00睡覺了晚安... 繼續...)</p> <p>您可以使用拍照，或者用一段文字在記錄卡等方式記錄下這些感受</p> |



代表家人或自己的書本 記錄卡

書名 _____

位置 _____

贈與說明 _____

啟發性最深書本 記錄卡

書名 _____

位置 _____

贈與說明 _____

被遺忘的書本 記錄卡

書名 _____

位置 _____

贈與說明 _____

紀念價值書本 記錄卡

書名 _____

位置 _____

贈與說明 _____

最常閱讀書本 記錄卡

書名 _____

位置 _____

贈與說明 _____

交流推薦書本 記錄卡

書名 _____

位置 _____

贈與說明 _____





活動記錄卡 Day 1

日期 _____

簡單說明 _____

活動記錄卡 Day 2

日期 _____

簡單說明 _____

活動記錄卡 Day 3

日期 _____

簡單說明 _____

活動記錄卡 Day 4

日期 _____

簡單說明 _____

活動記錄卡 Day 5

日期 _____

簡單說明 _____

活動記錄卡 Day 6

日期 _____

簡單說明 _____

活動記錄卡 Day 7

日期 _____

簡單說明 _____



| |
|---|
| 環境感藥物 記錄卡 |
| <div style="border: 1px solid black; height: 60px; width: 100%;"></div> |
| 物品名 _____ |
| 位置 _____ |
| 簡單說明 _____ |
| _____ |
| _____ |

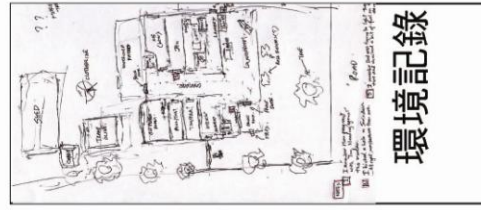
| |
|---|
| 環境感藥物 記錄卡 |
| <div style="border: 1px solid black; height: 60px; width: 100%;"></div> |
| 物品名 _____ |
| 位置 _____ |
| 簡單說明 _____ |
| _____ |
| _____ |

| |
|---|
| <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">使用 請參考說明書中封套的說明，畫出觀察對象或設置地點的環境地圖位置，並請在封套中間填寫介紹一下這個地方。</div> <div style="border: 1px solid black; height: 150px; width: 100%;"></div> |
|---|

| |
|---|
| 環境使用物 記錄卡 |
| <div style="border: 1px solid black; height: 60px; width: 100%;"></div> |
| 物品名 _____ |
| 位置 _____ |
| 簡單說明 _____ |
| _____ |
| _____ |

| |
|---|
| 環境使用物 記錄卡 |
| <div style="border: 1px solid black; height: 60px; width: 100%;"></div> |
| 物品名 _____ |
| 位置 _____ |
| 簡單說明 _____ |
| _____ |
| _____ |

| |
|---|
| 環境使用物 記錄卡 |
| <div style="border: 1px solid black; height: 60px; width: 100%;"></div> |
| 物品名 _____ |
| 位置 _____ |
| 簡單說明 _____ |
| _____ |
| _____ |



| |
|---|
| 環境感藥物 記錄卡 |
| <div style="border: 1px solid black; height: 60px; width: 100%;"></div> |
| 物品名 _____ |
| 位置 _____ |
| 簡單說明 _____ |
| _____ |
| _____ |

Appendix B: Initial Coding

| | | | | |
|---|--|---|--|---|
| 跳脫 另外一個世界 看小說 | 會將計畫寫出來 提醒 目的性、目標 | 佔有慾 看過喜歡才買 買回來的通常不拆 | 捨不得送 除非找到夠格的主人 但「書況」不是在意 | 記錄時的思緒 混亂隨機，自行回應 很少分享，隻字片語 |
| 對待書本的態度差異 (墊弟弟桌腳) | 特定的圖片或想法， 未來的可能性而購買 trigger(經濟因素) | 看過的書殘存是畫面 文字內化、畫面殘存 提及的時候 是自己建構的影像 | 隨機性 vs 相關性 書本找尋 vs 找相關 | Blog詢問 緩衝感 推薦交流的來源 分享心得，回覆 |
| 閱讀而尋找慰藉 (因為現實上的不順) (像朋友送的護身符) | 報紙、雜誌、漫畫 散佈在生活環境 但書本就有 「收納」意識 散佈在自己的領域 | 二手書店是順手 一般書店是特定去 新的訊息來源 | 安全感 印出來拿在手上感覺 記錄 看過了 | 叛逆美感 現實反差、對照之下 他人的觀感 自我的行動力 |
| 買書頻率降低 (因為房間裝不下、 再看機率不高 經濟因素) | 攜帶字典實體書 即便很重 額外的收穫、內容 提醒自己查過單字 | 融入書本中 卻是一個純粹觀看者 當下不連結 但事後會與周遭連結 | 習慣圖像化紀錄 無意識地隨手畫圖 | 書籤的替代物 紙膠帶 持久、保存、黏著 很少規畫顏色類別 折角 |
| 出國前會先看 相關的「小說」 跟事先情報蒐集 不大相同 | 相同的書本 因為是朋友送的而 一起保留，捨不得丟 | 翹腳姿勢 場域切換而允許？ | 期望感 餽贈的代表，家人 弟弟是自己一手帶大 | 找不到書的對策 不急於當下找 搬家前位置瞭解 搬家後散佈不以為意 |
| 一個「出口」 當下只有自己的存在 旅行是「切斷」 寫東西是「傾倒」 閱讀是「沉浸」 | 會撿拾他人的書 喜歡他人的筆記痕跡 他人的紀錄存在 | 翹腳姿勢 場域切換而允許？ | 紀錄、摘要、發想 別張紙，日記本 特地收納 重看回味，無電子化 找不到就算了 反正想的到更好的 | 小調的娛樂 生活中必須存有的 |
| 靈感刺激來源 書本70% 網路30% 書本是隨機地翻找 網路是特定地儲藏 | 圖書館借閱 二手書店徵書 因為經濟因素 | 以往需要廣泛閱讀 現今需要深入精讀 需求不同 | 伴隨感，陪伴感 襯托、背景音樂 (mac music) | |
| 成為「橋樑」 與「媒介」 | 公共書 喜歡折頁、畫線 喜歡閱讀他人的註記 | 高中、大學社團朋友 分享討論的一環 認同感，歸屬感 | 特別收藏的書 連拆封都不會拆 只看圖書館的書 | |

1896

只會聽少數幾首MP3
習慣操作方式
會固定時間更新內容

誠品背景音樂陪伴
習慣的養成
無聊少了某東西
需要時間的書

拿出來後不想放回
亂塞
與他人共用書櫃
起出分門別類

除非想要收藏
否則不會替換
會刻意保持書況

書本收納
沒有想過歸回問題

受到影像的驅使
回溯找書
深入細節細膩的補足
文字的想像空間
圖只是輔助

他人要求的書籍
不是自己找來看的書
不會「顯眼」

除非看不到
或跟現在無法銜接
否則不大想丟

影像無法一直存在
書本可以
收藏在那可以看的到

看完一本會有動機
看完其它本
一個心願或願望
會到書店看完

小時沒有自己的房間
書櫃是共用的

熱可可之類
補充體力，提醒休息

閱讀的習慣是並進

Kindle像在看螢幕
少了翻書感，像控制
不舒服

重覆閱讀速度放慢
理解體會
初次閱讀是跑進度

有穩定的來源
排行跟簡介來決定

家人間的討論
網路上第三者意見
回顧討論

媽媽的朋友送的
無聲的顧問來源

書皮的樣貌吸引翻動
書店氣氛想留下來
享受環境的感覺

網路上寫心得抒發
(BLOG)
被plurk FB取代

不會買工具書
寧可借或網路上教學

洗完澡的空擋短時間
20~30min

音樂的類型很重要
有歌詞的會分心

隨手拿片狀的紙張
當書籤

旁觀者的性格
一種隔離感

與現實中需求match
產生某種共鳴
談得比較多?
非精神層面的

書櫃上分類很有條目
在英國求學的都帶回

在意二手書的書況
有潔癖
圖書館的書覺得有趣
但不會跟著做

內容不符期待
仍舊看完

空間上習慣共用
ex枕頭作為區隔
看書時是自己的活動
不會有交流

潔癖 連外袋一起帶出門
討厭被凹到
通勤也帶著

想看的書特地拿出來
放在特定區域等候

紙張摸起來比較舒服
可是重量比較麻煩

受到潮流或外在影響
而購買的書
回台灣就沒在看了

直射眼睛不舒服
抬腳姿勢

對於家中其它的書
不大去關心
沒有關係聯結

具有意義的東西
會刻意放在明顯處
(怕忘記放在哪)

不想被知道自己看的
很在意看書隱私

國外書店是靈感來源
台灣與上海沒有動機
只在網路上

很在意借出去的書
到底在哪邊

沒有書櫃的房間
卻也稱為書房

他人推薦的書
會有後續關心追蹤

交流上都以網路為主
面對面的場合比較少

自己在英國買的書
非常在意在哪邊
(對方無法信任)
卻沒有圖檔建立

把書移除的依據
不用錢才會丟
自己買的不會移除

閱讀的念頭一時興起
通常集中度不高

書的封面很醜
無法吸引
第一眼是封面跟書名
不會去注意細節

無論時間
只要抬腳空擋就看書
(AM 2:32)

等人的空擋會在書店
公共場合看完
不會特意去書店

百科類的書不再看
有收起來(沒擺放)
其它有些則被丟掉



看書要搭喜歡的書籤
否則寧可不用
(卻都是他人送的)

共鳴而起的情緒
會被牽動投入
歷歷在目的體驗

很少主動推薦
會看對象而推薦
他人提及的會去點看

整理時發現的書
另外取出找時間再看
(現在仍跟的作者)

家族中各自有地盤
小的時候一起看
長大變成私人活動

從小是父母買書
陪伴?
高中開始自己買書
自主

國高中的書本
跟現在自己沒有聯繫
不再去翻閱

個性映照
(傲慢與偏見)
紀念價值很高

最常閱讀無連貫的
隨機的詩集類

網路上blog是參考
書名封面文字描寫等
更為重要

實體書店
10秒就可以決定買
(經過才會去)

會隨身帶著書本
不會折頁
除非是工具書雜誌
寧可記頁碼

同作者系列
即使不是最好看
第一本紀念性通常高

新書的資訊通常以
網路為主
朋友間網路資訊
書店 一次看到全部

有意義的物品隨身帶
明信片、情書等
到新的住所
會貼起來再展示
房間的一份子

獨占性
自己的閱讀體驗
不希望他人「擁有」
除非一般的，參考的
不理會後續

閱讀時切斷外界聯繫
沒有音樂沒有對話

手持式裝置
像看PDF檔之類資料感
太過理性
實體書像故事
比較具有情感

部落格算是自己想法
沉澱後的出口
但不會有筆記行為

手寫的信、卡片
不會貼出來
會收好

兩人共用書櫃
可是互不干涉
不喜歡混在一起
沒有歸類習慣
除非同作者

書很多都看不完
時間因素
理解程度

| | | | | | |
|------------------------------------|--------------------------------------|--|------------------------------------|------------------------------------|-----------------------------------|
| 晚上睡覺會開小燈 | 看到喜歡的連續劇才去購買書本 (跟媽媽看的回憶) | 孿子 先前的藏書借出失蹤補了一本新的回來看了影集特意收藏最早看的同志書籍最早開啟意義大 | 整套漫畫放在廁所中全家人都在看的現在變成應付小孩的收在書櫃裡面 | 一次只看一本書正在看的用同樣一支特殊意義的書籤 | |
| 明星的海報環繞房間歷年來的累積都沒丟重要的禮物收納 | 不會特意逛實體書店經過才會進在在網路上逛 | screen base的閱讀殺時間,省錢無法融入太多干擾 | 如果看得很快的書比較沒有收藏價值文字類比較好不同的書不同的對應 | 以往的書籤看完都會抽出來不會留在書裡面 | |
| 閱讀時間 睡前30min 假日早上1hr以上 | 電腦中的資料太龐大真偽難辨寧可找書信賴感 | 小時候的照片加洗放大貼在書櫃的玻璃上 | 給了親戚的小小百科很想再次擁有 | | |
| 真的喜歡的才會畫線一邊打開書本一邊寫在blog裡面很少畫,都知道在哪 | 電腦中的資料太龐大真偽難辨寧可找書信賴感 | 被遺忘的書本仍就是最喜歡之一對書本代稱有性別 | 自己買的書不會送走爸媽的書才會 | | |
| 被文字故事吸引整套買下收藏(少翻)不刻意保護(塑膠套) | 看書背後要有東西靠牆壁很冰不舒服夏天也一樣 | 閱讀不喜歡音樂干擾要很安靜 | 手寫的文章翻出來通常全部看完blog比較少 | | |
| 很少有交流 | 對其它家族成員書本不大瞭解 | 橫向放置的書是後來放上去(先後)沒有重新調整空間 | mobile devise書就是紙的形式如果可以帶著機器就可以帶著書 | | |
| 擔心借給誰了 | 薄的書本比較好帶方便 | 每本書都會簽名+蓋章這本是自己買的高中開始自己買書不一定是同一頁 | 書櫃中放置其它雜物(其它人是展示品) | | |
| 自己做的手工書整本看完 | 會去注意他人的書櫃同樣的書會引起共鳴想要重看,熟悉 | 公共場合看見自己看過的書興奮感注意書本身忽略人 | 還沒看的書會先集放在定點看完才放入書櫃 | | |
| 紙張上的東西比較能打動人心螢幕上的距離感很重書比較能打動人 | 貼上以前得獎文章明信片一類會收起來不貼出來 | 在公共場合看書不自在 人多又吵 | 書籤的形式就是那樣不用便條紙或筆之類用新的明信片 | | |
| 紙張上的東西比較能打動人心螢幕上的距離感很重書比較能打動人 | 在公共場合看書想給人看封面想知道別人的封面 | | | | |
| aNobii 網頁部分界面好用的感覺自己忘記看過哪些書可以統計配對 | 公共場合不會在意他人的目光不會刻意挑選 | 會將系列買齊全才開始看 | 閱讀時間一次只看同一本有看到一半的話之後會從頭看一次 | 會讓書保持好狀態沒有做記號折頁 | 在實體書店被書名封面吸引(沉重正式)卻成為阻礙而未翻過 |
| 公共場合注意他人的書偷偷地看怕被發現同樣的書會有印象對他人評價 | 單純文字小說自己想像就夠了插圖是多此一舉 | 用便條紙另外記錄內文字句、頁碼(不會貼在書中)最後用word整理 | aNobii 只逛少數名人、朋友每月的讀書筆記參考最近看了哪些書 | 捷運通勤上看書不想看到別人的臉視線不知該擺哪利用時間 | 自己買的書不達收藏標準仍然會移出 |
| 網頁上的書櫃是實際書櫃的延伸 | 公共場合會自己帶書去看 | 用便條紙記錄內文字句、頁碼最後用word整理 | aNobii 只逛少數名人、朋友每月的讀書筆記參考最近看了哪些書 | 書本上的書腰會先拆下來事後折回去維持完整性 | 少量的裝飾行為但都不是他人贈予都跟自己有關紀念價值的東西會另外收藏 |
| aNobii Tag行為太麻煩 | 現實中的書櫃比網路上的書櫃少 | | 幾米系列被丟出來的沒有惋惜遺憾等 | 影印教科書之類會丟自己的期末報告手寫的東西會留下來 | |
| aNobii 交流感覺不夠ptt上比較熱絡 | 公共場合通勤或咖啡店看書想要隱密不想被打擾包上書衣不想被看到安靜配點音樂 | | 家中沒有自己的藏書 | 他人贈予的書有紀念價值卻無法達到自己偏好沒打算留存,轉賣 | |
| 博客來先看排行榜讀者推薦最後是介紹 | 不會在公共平台發表只觀看他人的文章不參與討論 | | 書店看書會一次看完 | 封面通常不是吸引的要素但事後知道其特別處會產生比較跟優越感 | |
| screen base的閱讀覺得不耐煩 | 沒有買二手書的經驗不用去配合他人不喜歡他人小說畫線 | | 跟切身相關的紀念性存活的機率比較高(跟他人贈予比起) | 啟發最深的書從頭到尾自己沒收藏因為反映出理解會隨時間而有不同層面反映 | |
| 賣不掉的書考慮交換 | 會有個特定區域存放待處置的書本未看、轉賣放在一起 | | 書櫃僅於存放功能(沒有到展示層面) | 會依照對方不同推薦 | |
| 不刻意只買一個單純閱讀器多功能比較好不能只是一般書書就是安靜地翻 | | | 隨時要搬家收藏的書很少被其它雜物遮住 | | |

書櫃上的其它擺飾
有經過挑選、整理
不是一般雜物
有意識地陳設

厚度的關係會轉向
呈現這本書是甚麼
喜歡的放在前排

雜誌會丟掉(過時)
想掃成電子檔
找資料比較快
不常看的書賣掉丟掉

會跟朋友討論聊天
書中的觀點想法

screen base的環境
排版不合適不舒服

會按照心情不同
找不同的書來看
體力也是考量點
不會有進度逼自己看

沒有目的的話
實體書比較有手感
機器觸動沒有手感

設計過於花俏
過於個人風格的形式
不會想要看
除非內容很吸引人

遇到同樣的書
會對他人品味做連結
不管是同一本
或都有同一本

從學生念書開始
安靜的前提下
有一點聲音
環境是存在的

會稍微注意
他人的記號
不喜歡主動對書
做任何改變

喜歡故事性強的書
喜歡非真實感的

紀念性
咖啡店老闆送的書
挪威的森林

網路只有片段資訊
實體書店
可以看到實際細節

會另外寫在筆記
不會特別收這些隨筆

特殊裝訂的書
因為不喜歡破壞書本
只從幾頁中瞄
不會特地再買一本
痕跡之類不會影響

在咖啡廳跟朋友一起
各自做各自的活動
自己看書不干擾

閱讀地點
咖啡店占大宗
有書也會自己帶小說
沒有事情的下午

重覆觀看的
都是比較喜歡，固定
少數幾本書

會對書本折頁
畫線偏少
會從頭再看
知道自己做的痕跡

最常閱讀的
重新看過很多次
最多折頁
無法寫出直接引述

content連結性不夠
中斷後很容易遺忘
書櫃看完的書隨手疊
直到場下來

content連結性不夠
中斷後很容易遺忘
書櫃看完的書隨手疊
直到場下來

書房無法久坐
閱讀只在睡前30min
培養睡意

在不同咖啡店流連
恰好看到這本書
在家看完
與自己的生活呼應
家以外的地盤

實體書店
可以概觀最近新書
分類清楚，看到細節
網路是最後購買通路

還沒有丟的書
放到到碰觸不到地方
調整位置
當初買入
多少是有認同才買
取捨之下
除非不得不丟

書本中的驚奇
扁掉的蟲子之類
他人的痕跡
借此理解他人的想法
認同會有聊天的念頭
不認同也可接受

手汗
不是自己的書困擾
會留下一點點痕跡
自己的書則無所謂

工具資訊類的書
不連貫的content
劃線標記
找資料方便
除非比較特別之處
鮮少畫線中斷

看書櫃的內容
可以再次理解一個人
書代表了這個人

看他人閱讀同一本書
會有衝動說我也有看

新買的書想快點看完
想知道後面結局
之後再看會慢慢看

別人送的
或不那麼喜歡的書
移到準被淘汰的區域
或底層，後層

不喜歡把明信片貼上
麻煩、更換、舊化
最後變成垃圾
收起來整理會看看

不會在意他人目光
除非內容太特別
他人直接窺視
不舒服

第一件事
看他人書櫃CD, DVD等
透過這些認識不同面

好奇心
認識多一點
最真實私底下的一面

書或DVD
認同與討論
理解相同連結之處
他人互動的媒介之一

公共場合
資訊類content
比較合適大家偷看

專挑幾位作者文筆

電子書
拿著機器的感覺
長時間看不舒服

找資料書本只要翻
電腦要找檔案

會把書放在旁邊椅子
要看的正在看的

重買一本
會把先前的內容記錄
轉移到新書上

想要收藏跟長期買書
完善的空間
嚴重受損淘汰的再買

1896

Appendix C: Quotes

Participant A:

“現在我住的地方，我看書時會開著電視，但是開靜音，只要那個影像在那邊閃，好像有人在家的感覺...有東西陪我”

“我跟我爸不是很愛書的人，不會像有的人，你知道那種，連折都不能折。我們會折會凹...不會刻意去做，但手在看書的時候就是會手賤，你知道那種...”

“我爸的想法有點偏執，他會透過看些書來印證他的想法...他一個時期一個時期的政治立場或甚麼的，跟他那時買的書有關”

Participant B:

“...因為入手不易阿，要拿出來看是有點麻煩啦，可是就是...我後來逐漸，因為包塑膠袋是很久很久以前養成的習慣，因為他買來的時候一定會有塑膠袋，我之後就會把它裝回去，因為基本上還是可以防潮濕啦甚麼的，因為有的時候會放在很危險的地方啊，或者是甚麼；比如說放在包包裡面會戳到，但有塑膠袋就沒關係，如果可以的話，因為包包裡面...一定要用塑膠袋包起來，不然刮傷我會很傷心”

Participant C:

“每本書都像新的一樣，甚至想把喜歡的書多買一本封起來。就像隨時都有新書一般，這才叫藏書嘛！書越新，越稀有，越值錢”

“...帶有正面力量的書，每次感到沮喪的時候會翻閱下，借此沉澱自己的心情...在心情特別混亂時特別仰賴這本書的力量”

“...每次不論看哪種書，我都先整理好閱讀心情，視閱讀的種類及當下心情準備不同飲品，把筆電開著，一切準備就緒後坐到習慣的位置 - 在沙發跟桌子中間的椅墊上，像儀式一樣”

Participant D:

“前陣子老板讓我很不爽的時候，拿出之前表姐送我的書看看，學習接受...很無理的要求”

“閱讀時一定要有書籤!! 就像皮久一定要配炒花枝!!”

Participant E:

“你會跳到另外一個世界”

“我蠻喜歡前面的書是有筆記的，我能接受...你可以看到別人的記錄很好玩”

“我好朋友送了本書給我...打開一看...前幾個月才買，覺得好巧，買了同樣的書，我捨不得把任何一本賣掉。”

“每年生日他都送我書，那時候家庭有嚴重驟變，前幾年都送藝術相關的書，結果那年他竟然送了一本關於 100 種煩惱的書，每年都送了我剛好需要的書”

“.....找不到沒關係呀，我知道它一定存在”

“只有我弟弟我會送他書，因為我希望他看...就我對他的期望希望多看點書，他只有 10 歲...因為只有我跟我弟會看書”

“因為我房間放不下，我有想過綁一綁拿到二手書店，最後還是把繩子解開放回去.....捨不

得，除非幫他找到合適的主人”

“哪裡有地方就放哪裡，就在桌上，地上，床上，完全散落在我房間，因為書真的溢出來”

“寫東西是把情緒倒出來，是個垃圾桶，出口.....(看書)打開門進入別人的世界也是一種出口，暫時離開你自己”

Participant G:

“看書要配合我喜歡的書籤...如果沒有適合的書籤我寧可不用”

Participant J:

“比較喜歡的會放在前排，常看也比較方面拿”

“會依照心情，有時候想看的是比較靜，沒有艱深文字的內容，找一本適合當時自己心情的書”

“以前念書的時候常在咖啡館，除非音量太大...有一點點聲音不要完全沒聲音，感覺環境是存在的，不會周圍甚麼東西都沒有”

Participant K:

“因為我沒辦法久坐，想讓自己舒服一點...到最後變成睡前半小時或一小時看書，墊一堆東西”

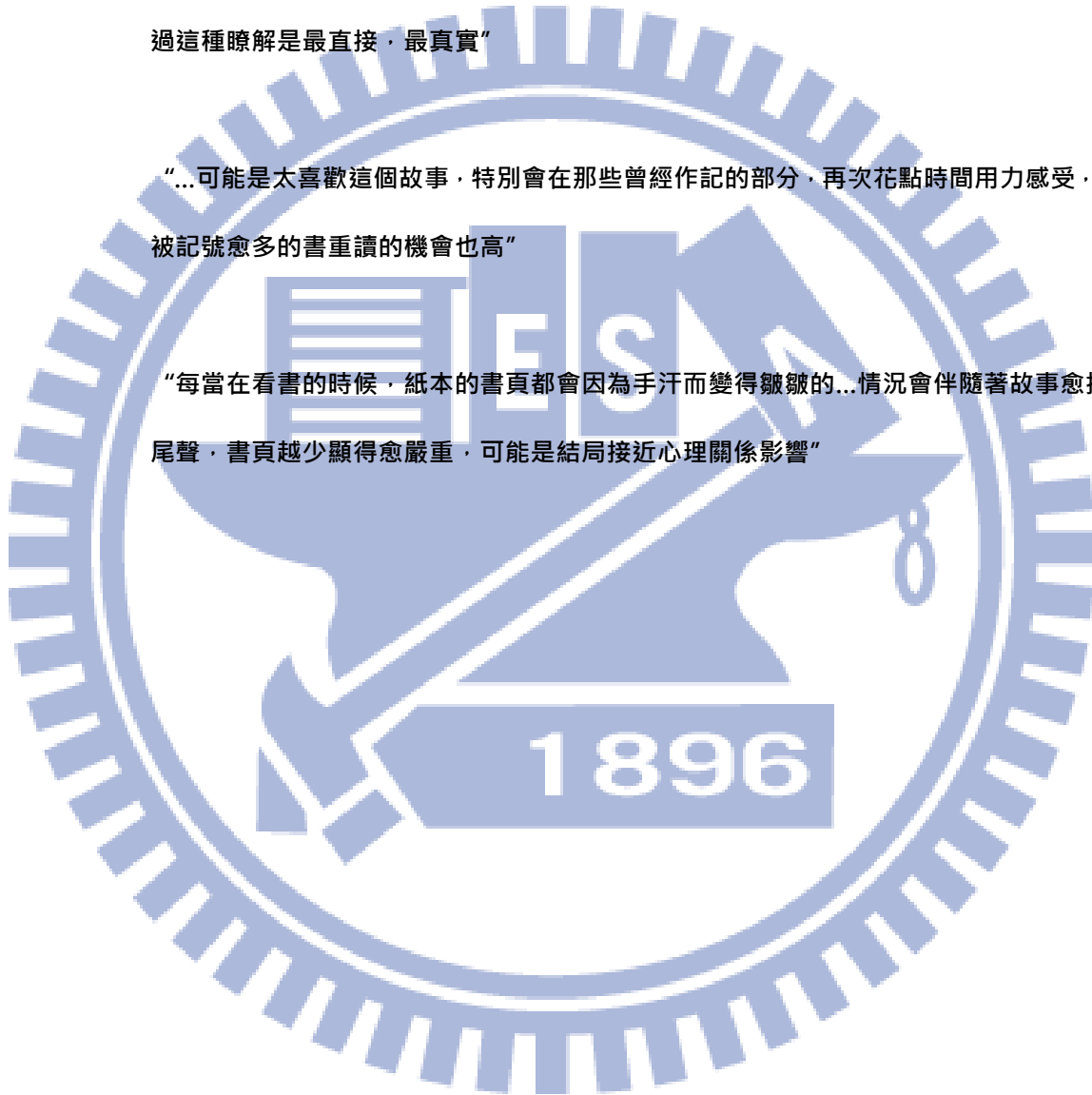
“比較喜歡的...也代表自己。如果今天有人來家裡，看到書櫃...就知道這個人平常看甚麼，可以藉由這瞭解這個人。”

“比較不喜歡的書往上往下擺，把它們藏起來；像書或 DVD 這些是個人的品味喜好，那你當然會希望別人認同……我覺得這些是媒介，和別人互動的媒介”

“因為這些書都是...因為不是最近的，已經有一段時間。所以你知道大概是他自己以前的蒐藏，你真的會透過這些東西，我不敢說完全瞭解，但你可能看書櫃發現他另外一面...透過這種瞭解是最直接，最真實”

“...可能是太喜歡這個故事，特別會在那些曾經作記的部分，再次花點時間用力感受，所以被記號愈多的書重讀的機會也高”

“每當在看書的時候，紙本的書頁都會因為手汗而變得皺皺的...情況會伴隨著故事愈接近尾聲，書頁越少顯得愈嚴重，可能是結局接近心理關係影響”



Appendix D: The thesis review in the Chinese version

鑑於身為非以英文為母語的學生，在撰寫英文論文時所造成用字、文意理解上的可能錯誤與困難，在指導老師的指示下於附錄增添一篇幅較長的解釋文章，以幫助將來「不幸」閱讀論文者能更了解這本論文所要分享傳達的概念。

本文主要以第三章研究方法中的文化探針(culture probe)、第四章扎根理論(grounded theory)、以及第五章所牽涉之 presence 討論進行較摘要更為詳細的解說。唯本文是以輔助閱讀論文而存在，並未對論文正文的內容逐一詳細解釋，建議可於摘要之後快速瀏覽，閱讀論文本文時能避免被可能的錯誤用字所困擾文意。另外，本文於論文完成之後所撰寫，部份內容與想法可能未於論文內容中提及，在不影響過多，甚至偏離主文內容的前提下，可作為導讀功能外，也是某種程度的個人心得交流分享。

第三章，研究方法，文化探針與實驗方式

本研究所使用的研究方式為文化探針法(culture probe)，主要目的在於以不干擾原有生活樣貌的方式，讓受測者以自我檢視(self-document)的方式進行深度資料挖掘與擷取。由第二章社會學與設計研究的相關文獻中，我們對物件在與人們互動中，所具有的特質進行了初步的理解；接下來讓我們感到好奇的是，當原本存在於人們生活中的書本，需要被賦予特殊意義時，人們會進行甚麼樣的選擇？而這些被選擇的書本，有著甚麼與其他書本不同的物理特質，或特殊的脈絡背景？

由此出發點，我們規畫了環境觀察、找尋書本、日記三個分別針對不同內容的活動。在環境觀察部份，利用相機與手繪方式對閱讀環境進行觀察，同時會找尋在閱讀活動中使用的物品以及具有意義的物品。主要目的在於觀察，參與者手繪的地圖與拍照的真實環境間的落差，以及所選擇的物品之間關係為何；找尋書本部份，則觀察參與者在賦予意義的前提下，會選擇甚麼樣的書本為主；日記部份則希望參與者能持續對自我的閱讀活動進行紀錄或回顧，而回收所得的資料經過解讀與整理之後，將成為半結構式訪談時追問的參考來源，訪談內容與對應目的(參閱表 3-2)；除了事先針對回收資料的解讀所擬定的訪談大綱外，在訪談過程中對於各種特殊事件的敏感度是不可忽略的，唯有如此才能在透過以回收資料為基礎的訪談中，挖掘出更深具意義與代表性的寶貴資料。

第四章 · artifact model 與扎根理論結果

回收資料主要處理手法以兩種觀點進行整理：第一種是 artifact model，以物件的觀點對回收資料中出現的物件進行統整、分析，提出這些物件在抽象層面上的概念。最後所整理出來的 artifact model 分為五個層面：書本、記錄物、書籤(標記物)、放鬆物以及儲存容器(參閱圖 4-1 系列)。書本方面，我們將頁面分為幾個區塊加以劃分所承擔的功能以及在閱讀中扮演的角色；紀錄物方面則說明了以「紙」紀錄的特點及與數位檔案間脈絡表現差異；書籤部份則對傳統書籤的功能進行切割，介紹了功能以及設計所著力的面向，並提及非傳統書籤的來源及樣貌；放鬆物部份，即便在功能面差異甚遠，卻被認為是營造、支撐一個最適合的閱讀環境而存在著；儲存容器部份，除了一般書櫃有著區域與收藏間的關係外，也發現幾乎所有參與者都有個所謂的「臨時區域」，作為書本閱讀順序與收藏調整之用，可能是書櫃某一區塊，或如書桌、閒置的椅子等。

第二種則是以扎根理論法，針對參與者的活動與現象進行編碼分析，並參閱 artifact model 最後建立一理論架構來說明書本與人之間的互動關係。在 4-1 開放性譯碼(open coding) 與 4-2 的主軸譯碼(axial coding)之間，除了開放性譯碼是重複地進行統合與差異化的過程外，開放性譯碼與主軸譯碼彼此的關係是交互不斷地往復進行修正，意即在進行主軸譯碼的選擇及演繹的同時，也不斷的進行開放性譯碼的工作，而修正後的開放性譯碼又可能對主軸譯碼的發展產生影響。而這部份的工作端視研究者對資料稠密度與理解，以決定編碼工作的發展進程。

最後在開放性譯碼部份，我們建立了共 25 個主要概念標籤(參閱表 4-1 至 4-3)，並歸類在閱讀(reading)、收藏(collection)、社交互動(social interaction)三個層面上。在開放性譯碼中我們可一窺十位參與者與書本互動活動的大致樣貌，然而在主軸譯碼中，如何選擇置關重要的編碼進行後續研究(亦或背後所代表的一連串彼此相關的現象)，也需靠研究者自己對資料的理解程度與特殊事件敏感度而決定；這也是開放性譯碼與主軸譯碼之間並非完全階段分離，須不斷重複進行編碼、統整的原因之一。

我們在主軸譯碼上選擇了三個對應置三層面的現象加以發展：閱讀中的「滿足」、收藏中的「占有」以及社交互動中的「期待」。這三個被挑選的現象依照了「典範模型」(paradigm model)的方式將現象的產生條件、特質、脈絡、採取的策略和妨礙條件加以確立；並就現象中的各種表現進行分析拆解。

在「期待」(expectation)上除了典範模型中所講述的現象外(參閱表 4-4)，同時也

發現了每個人在這個現象中都同時扮演著「接收者」(receiver)與「傳播者」(spreader) 雙重角色。接收者代表他們對於書本相關訊息的所採取的手段，不管是搜尋新的情報或對目前閱讀的書本更多的理解，在這個角色上大多數參與者都顯出積極的態度；傳播者代表著參與者會將蒐集的情報加以消化整理後，根據場合需求將其傳播。在傳播者角色上參與者之間出現歧異，部分持積極態度的參與者會將這些情報視為一種社交手段，主動提供給他人以取得社交活動上的部份主導權；另外持相對消極態度的參與者則是因他人主動要求時，才會將部份資訊予以釋出，扮演一個消極諮詢的角色。

「占有」現象中我們發現了很多較為複雜的表現，除了參照典範模型(表 4-5)以外，也試圖用兩個軸向來定位出這些參與者在這現象中的表現差異，這兩個軸分別是「態度」(attitude)與「門檻」(threshold)：態度指的是人們對待書本時所採取的措施，而門檻指的是人們將書本納入收藏時所持的標準。這兩個軸各自擁有兩種反極的表現特徵，「態度」軸上分別是「共存」(coexistence)與「神聖」(sacrosanct)兩個極端，代表著人們對書本是採取如同空氣般自然地存在而不加以保護，亦或將書本視為如同宗教神器般不可褻瀆的存在；在「門檻」軸上則是以「吞噬者」(swallower)與「挑剔者」(picker)作為兩種極端的代表。如字面所示，吞噬者代表著人們對於收藏書本有種莫名的偏執喜好，可以視為某種形式上的收藏癖好，而挑剔者則對於藏書卻反而顯得非常保守。

以這兩個軸所形成的座標圖(參閱圖 4-2)，將十位參與者加以區隔。在過程中我們並未使用客觀方式進行各種指標上的量測，而是主觀地兩兩比較藉以區隔彼此間的位置，目的是在於幫助研究者能更清楚地拆解比較參與者在「占有」現象的表現區別。隨後從四個區間中各挑選一個代表性的參與者，將環境照片加以陳列進行各種特殊事件、收藏偏好，保存策略之間的差異描述(參閱 p40~p43)。

在「滿足」中我們發現閱讀過程中人們會將自身融入書本之中，不管是投射自某個角色或以第三人稱的方式「客觀地存在於書中」，都是在尋求現實與自我間的緩衝地帶，同時對於環境需求上也可分為切斷任何與外界連繫的「完全孤立」，或者是在可接受的臨界值內，特別地在公共環境中，透過外界環境的存在，下意識地於當中感受自我。

結束了三個主軸譯碼發展，在選擇性譯碼部份我們嘗試以「acceptance」這個核心概念串連起三個主軸譯碼的代表現象。主因在於在建構主軸譯碼的同時，我們發現這三個現象，亦或所代表之三個層面(閱讀、收藏、社交)之間的脈絡傳承上並非每本書都能順利完成，在轉換的過程中我們感受到，層面彼此間具有一個屬於個人的判別標準，

然而這「標準」的實際運作不僅身為旁觀的研究者無法完全掌握，在訪談過程中參與者們也沒辦法就其各自的標準，說明在每本書之間是如何進行選擇的——即使「標準」的確存在。因此作為一存於各現象間的評斷標準，賦予「acceptance」(圖 4-7~圖 4-8)。

第五章·結果討論

從第四章的資料我們開始進行關於 presence 與人書之間互動的相關論述。首先就書本在三個互動層面扮演的角色開始介紹：首先，紙本書在社交互動上具有其他類似物件所沒有的特質。在「期待」現象中的餽贈脈絡中，書本通常是在回應人們需要，或被認為欠缺某些特質時被當成禮物所贈送。這使得它不僅代表著授受雙方間關係的證明，過去回憶的紀錄，同時也具備著一種成為接受方未來的典範而存在。

第二是在閱讀過程中，書本紀錄著人們自我，以及擔任事後回顧時的誘發媒介。在 4-1 的 artifact model 中我們對紙本書以及紀錄物的特性做了部份的介紹，講述了紙張材質特性與數位檔案間的落差；另外在主軸譯碼的閱讀部份也理解，人們的閱讀其實是一個不斷投注部份的自我的歷程，我們借用了 Nelson & Stolerman(2003)的概念，ensoulment 來理解這個概念。

最後，書本也是一個沉靜，表達自我的一種物件。在 artifact model 和 possession 現象中我們可以觀察到人們在整理收藏時，會遵循著某種看不見的喜好標準。某些參與者在這方面的意識並不強烈，因此在訪談中身為旁觀者的我在資料中發現一些好奇的現象時，他們往往答不出理由，覺得就是如此沒想太多；反觀部份的參與者對收藏(collection)現象，通常會與展示(exhibition)有所連結，他們對於怎麼擺設書櫃，怎麼呈現都有一套非常清楚的邏輯跟規則，書本在這個時候，就成為某種人們傳達、展示自我的物品了。它的身份就如同某些族群將收藏的 CD、DVD、黑膠唱片、紅酒等展示出來一樣，代表著個人的品味與價值觀；部份的人也表示，當他們在其他人的家裡時，會由觀察對方的書櫃內容作為某種評斷他人的參考來源。

presence 在哪邊？

我們提出了一個理論模型圖(圖 5-2)，認為 presence 是由 social interaction 以及 reading 的內外互動所形塑，最後在 collection 的層面中展現出來。更具體來說，回到選擇性譯碼時所提出的 acceptance 理論，當人們接受了因外在因素(social interaction)

而進入的書本開始，每個過程進行的各種互動就是一種不斷地意圖將書本特殊化的過程。簡單舉例來說，當我們接受了一本他人推薦或收到了一本當作生日禮物的書本時，「這本書」便不同於其他待在書店書架上，甚至他人書架上「同樣」的書了。而這些特殊化的互動所產生的一種情感，在當下並不為人所清楚察覺，而是在收藏層面，以「占有」為主的現象中被人們所察覺，進而體現。這個主張同時也暗示了，每一本書在開始了這段 acceptance 的旅程後，都具有它自己的 presence，只是強弱之間的區分；而我們在探針法中所採取的找尋書本活動，是在幫助參與者找出 presence 較為強烈的書本。另外，這個 presence 的模型圖，與 artifact 結合時(圖 5-3)，可以反映出各種在閱讀過程中出現的 artifact 參與程度。

此外，另一個議題是關於電子書的 presence 又是甚麼樣的情形呢？回到實體書本觀點，將實體書分為「載體」與「內容」兩個部份看。「載體」在實體書上指的便是「紙本」，「內容」則被印刷在載體上，藉以紀錄與攜帶。人們在實體書的互動，實際上便是與「載體」互動，對「內容」的各種回應，也是紀錄在「載體」上；「載體」和「內容」之間具有綁定、單一的對應關係(圖 5-4)，這使得當人們在閱讀某本書時，不會將這本書與其它書本，甚至其他綁定一樣內容的「同樣的書」混淆，因為每本書的載體不管是本來樣貌，或經過互動後都是與眾不同。

然而目前的電子書互動方式，卻打斷了「載體」與「內容」之間的綁定關係，內容不再被載體所限制，而是能在各種不同的載體上加以被「展示」，例如你可以在平板電腦、智慧手機、個人電腦上觀看，或者說「播放」著「那本」你所購買或下載的電子書。然而這種新的關係卻也產生一個問題：人們該如何由這些新的「載體」來紀錄或反映我們在閱讀時產生的各種情感？失去了在實體世界中的「唯一」代表性，這些現有的電子書運作機制，在社交互動上又該如何維持，或者說轉變書本在這層面上的角色？

Design Implication

就上述的討論與主張，我們提出了幾個以初步的 design implication，作為以 presence 為出發方向時的電子書設計相關的發想參考。首先是電子書不論是在「載體」的形式或互動中，應該朝個人化的方向考慮。例如在長期的閱讀過程中能夠將人們的使用習慣適度地「反映」出來，而非每次閱讀時書本都像從未被接觸過一般(圖 5-6)；在收藏方式也需考慮給予使用者一定程度的自由度。舉 apple 的 iBook 來說，收藏方式雖然模仿書櫃的形式，但基本上卻仍然是以「檔案」排列方式加以「管理」的心態，而

犧牲了部份人們對於自己偏好的掌握自由。在概念上，例如部份網頁小遊戲，如 pet society 的方式，透過選擇自己喜好的書櫃樣式，將自己所擁有的電子書加以陳設擺放，彌補在實體世界中載體消失所涉及的情感鍊結遺失問題。

第二個 design implication 是建議讓使用者能擁有代表性的物件(representative materials)。這個意思是指，假使人們購買了一本電子書，並未同時購買紙本書時，可以考慮提供某種特別的紀念品，像是縮小尺寸的該書模型，或是某種可以代表該書的小禮物等，滿足人們在「收藏」層面上的需求，從虛擬空間延伸至實體世界。

第三是加強使用者在數位環境下與他人的連結。當電子書的運作方式逐漸完備之際，我們或許可以想像未來人們不管是在選書、購買、閱讀等環節都將會以數位環境逐漸取代實體書店，而在此同時除了效率以及方便度提高外，卻也喪失了某種程度上與他人的連結可能性。因此我們建議應當發揮數位產品快速傳播與連結他人的優勢，如何透過適當的管道營造出一個有利社群成員間，彼此分享及閱讀的互動環境，將會有助於電子書於人們之間的互動 presence 產生。

本文小結

從上述針對第三章到第五章部份內容所作的說明，人們與書本間的互動方式、運作機制、表現型態以及所提出的 acceptance 理論與 presence 模型等有了大致上的理解。這些在這本論文中所要傳達的概念，希望能對電子書相關產業，包括工業(產品)設計、互動界面設計、體驗服務規劃、物流等相關行業有一個新的概念方向，能夠對電子書的閱讀載具(包括平板、智慧手機)、軟體介面、網站架構、服務運作機制有所幫助。

另外，對於意圖在相關方向進行更深入的研究時，這篇論文也提供了一個基礎架構以供參考，在此對未來研究方向有幾點建議：首先在 presence 的概念上我們提出了一個基礎的模型，讓人們理解 presence 的可能來源以及被察覺的所在處，然而對 presence 本身更細緻的調查，包括分類、強弱量測在此研究都無法明確指出，這點在將來相關深入研究時可以作為部份方向；另一方面，在理解了 presence 的基礎後，現有存在於人們傳統閱讀中的 artifact 該如何以適切的樣貌出現在電子書的互動中，或者有甚麼新的，前所未見的 artifact 也是相關領域設計師可以思索的方向；最後，當 prototype 與使用者間的測試時，該如何量測 presence，訂定一套新的設計語檢測方法也是相關研究者與設計師們值得共同努力的方向。