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HOW INSPIRATIONAL SOURCES ARE ADAPTED TOWARDS TEXTILE SURFACE DESIGNS

by

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Abstract

Using inspirational sources for generating ideas and stimulating productivity in designing is a significant stage in the design process that impacts designing and design outcomes. Another important aspect during designing is the role of influence on the designer as they work through design projects. This research explores how the adaptations of inspirational sources manifest during the early phase of textile designing. Specifically, it examines how inspirational sources of biological specimens are adapted in designing, with one group of designers using actual biological specimens and the other group using representations of the specimens in the form of photographs. This research attempts to understand the adaptation of inspirational sources and to understand how adaptations occur when sources are presented differently. It also seeks to acknowledge the role of influence in the design process and to explain how it differs from inspiration.

Acknowledgements

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Chapter 1 . Inspiration and Influence during the Textile Design Process

1.1 Introduction: human ecology and material culture perspective

What is more intimate and personal than the clothes on your back or the fabrics you surround yourself with everyday? The designers who make the materials and create those patterns that decorate the fabrics expend much thought and effort into the design and creation of textile and fibre works. Each stage of the design process plays an important role to achieve a successful outcome. The research herein looks at the initial stage in the design process in textile/fibre art design to help explain the importance of inspiration and to a lesser degree, influence. This is accomplished through an ethnographic and qualitative research study using human ecological and material culture perspectives to explore design process from a more holistic and multi-disciplinary viewpoint. Borden and Jacobs (1988) state that:

> "Human ecology is the scientific and holistic study of human beings, their environments, and human-environmental interactions. As a discipline, human ecology is both a science and an art. As an applied discipline, it seeks to identify the forces which enhance human development, actualize human potential, optimize human functioning, and improve the human condition and the quality of the lives of people." (page 129)

The research herein uses this perspective to provide a framework to study how designers work. The study of the role of inspirational sources in the design process provides a lens in which to examine the very near environment of people in two ways: 1) by looking at textile designs on clothing that make up the intimate near environment of people; and 2) by investigating how designers create textile designs for people. More specifically, we look at how inspirational sources are adapted during designing to create patterns or designs on fabrics. In addition, on a wider scale, we also explore the role of influence, which is apparent through the designer's personal experiences and human-environment interaction. Therefore, the research herein involves using a human ecological perspective in several ways including methodologically by attempting to understand design process as holistically as possible and also in the subject area where the clothing and fabric of people (i.e., near environment) is the topic of exploration. In addition to the human ecology perspective, material culture is also key to this work. According to Tim Dant (1999) material culture is:

> "In a practical sense, that which is material is that which we can see, touch and smell but which is not human or animal. The culture is the set of common human practices that surround material objects—the way of using material, of sharing it, or talking about it, of naming it and of making it." (page 11).

The research herein is a study of material culture in that it involves an exploration into the production or making of "materials" (fibre art/textiles) and the "common practice" (ibid) of designers engaging in the design process. In addition, the

relationship between individual designers and their sociocultural background (including their idiosyncratic beliefs and more common cultural practices) is explored. Finally, it is through "sharing" and "talking" (ibid) during the research process that a deeper understanding of the material culture of producing textiles is understood.

Figure 1.1: Flowchart for introduction to thesis

In this way, the research herein moves towards a deepening understanding of how designers use and engage with inspirational sources and influence during the design process through the perspectives of human ecology and material culture. See figure 1.1 for a flowchart of the framework for this introductory chapter.

1.2 Background: inspiration and influence

It is important to present a background to get an understanding of why this research was undertaken and how this led to the study. Figure 1.2 illustrates the relationship of the background information that led to other important topics in setting up this research.

Figure 1.2: Research background

Interest in inspirational sources and influence during the design process for fibre art and textile designers evolves from a curiosity into how designers think and work. This curiosity began from a personal point of view, namely as a designer and design educator, where it seemed as though it was important to understand the different stages of design process to facilitate successful outcomes for myself and my students. This initial curiosity led towards a quest to find out what was known in the academy about textile/fibre arts and the design process, which resulted in rather limited amount of information. For instance, there are some studies undertaken about how designers think and work, but few on how textile or fibre artists think and work. In addition, there are not many studies that look specifically at the role of inspiration and influence in the design process. Among the studies on inspirational sources, however, there were a few that aided in considering how to construct a research project that would glean significant information about the topic. Notably, was the work of Claudia Eckert and Martin Stacey who looked at inspirational sources predominantly among knitwear designers (Eckert & Stacey, 2003). This work provided a framework to design a study where textile designers were given inspirational sources in order to track how these were used. In terms of the selection of sources, the opportunity for collaboration with Tom Terzin and to have access to his wonderful collection of

butterflies, beetles and shells, ultimately led to the formulation of research questions that, when studied and analyzed add insight into how designers think and work.

1.3 Statement of Problem: research questions

The next step in setting up a research project is to determine exactly what it is that would be explored. This occurs by narrowing the focus and forming very specific research questions that when taken together, form a statement of the problem (see figure 1.3).

Figure 1.3: Statement of problem

The purpose of this research is to: 1) explore how adaptation of inspirational sources occurs during designing of textile or fibre art; and 2) show how the role of influence differs from that of inspiration. This is explored by tracking the early stages of the textile/fibre art design process. Specifically, the research herein, looks into how real three-dimensional specimens (butterflies, beetles and shells mounted in display cases) versus two-dimensional representations of those same specimens (in the form of photographs) are used in designing.

The main research questions and sub-questions are:

1) How are inspirational sources adapted towards textile surface designs?
   - What kinds of adaptations occur?
   - When during the design process are inspirational sources used most often?
   - How do designers differ in how they use sources towards their designs?
   - How do designers work with different types of inspirational sources (real or representations)?

2) How does influence differ from inspiration in the design process?
   - Do designers rely primarily on inspirational sources or their past experiences?
   - What kinds of things influence designers (people, places, things, etc.)?
   - How do sociocultural aspects play into the design process?

These research questions and sub-questions provide specific areas of inquiry for the research herein. Specifically, they provide the researchers with guidelines to study the designers in a holistic manner, by focusing on both near environmental forces (inspiration) and wider environmental experiences (influence).

1.4 Significance: potential benefits

It is an important aspect of research to identify the significance the research will have and how it can contribute to further knowledge and societal needs (see figure 1.4).

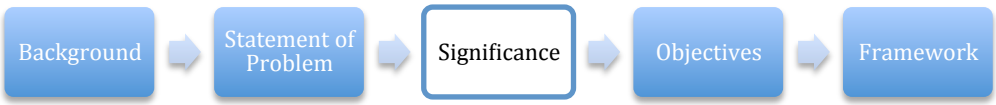


Figure 1.4: Significance of study

The significance of the research herein can have many benefits. From a human ecological perspective, it contributes to understanding more about how humans interact with objects (or ideas) and how, in the case of designers, that interaction will often move them to create something. It also adds to the realization that people are influenced on many diverse levels and that it will affect how they see things and how they will perform. From a material culture perspective, this work contributes to increased knowledge on production processes whereby material decisions are linked to the values and beliefs of the designers and other people in society. The significance of this research has the potential to benefit designers and artists, curators, design educators, manufacturers of textiles and academics by contributing to the study of design process. Whether it is fashion, textiles, buildings or structures, any knowledge that contributes to finding out more about how designers' work is valuable. For designers, it has the potential to help them allocate resources more efficiently, by choosing carefully the sources of inspiration they will need to get the job done. For curators, it aids in making decisions about image databases of collection artifacts. For design educators, it may aid in their ability to make knowledgeable decisions about course content for design students. For companies that employ designers, it has the potential to help them make decisions about the kinds of inputs and inspirations they need to nurture their designers. In general the significance of the research herein is that it adds to existing knowledge in the study of design process whereby textiles and fibre arts is the focus.

1.5 Objectives: links to research questions

To aid in keeping on track to the development of the research study, it is necessary to outline specific objectives (see figure 1.5).

Figure 1.5: Objectives of research

The objectives of this research are naturally linked to the research questions. The objectives are:

1) To observe and record textile/fibre art designers as they work towards creating a textile project.
2) To analyze, compare and contrast themes that emerge from the data generated during the research sessions.
3) To provide inspirational sources in different formats and observe and record how these are used during the design process.
4) To better understand how inspirational sources are adapted during the design process.
5) To formulate ideas on the role of influence in the design process.
6) To provide recommendations towards further study in design process.

1.6 Framework: mapping the structure of thesis

This section sets up the structure, or framework of this thesis with a view to mapping out the flow and contents herein (see figure 1.6).

Figure 1.6: Framework for thesis

This thesis is setup in six chapters beginning with this one, which is the introduction to the general topic of the research herein. Chapter one explains the reason for the interest in the research question, and the background and significance of the study. It lists the research questions and objectives of the research.

Chapter two presents the background of the research and it explores the scholarly literature that exists surrounding the four themes that contribute to the understanding of the research questions. These include: 1) the study of design process, 2) inspirational sources and influence in the design process, 3) cognitive processes and 4) visualizations and representations in design process. The gathering and perusal of this information led to the belief that there are gaps in knowledge in the area of the design process of fibre art and textile designers. This background and literature review aided in directing and formulating the specific research questions, methodology and research design for this study.

Chapter three establishes the methodology used for the research herein. It lays out the ethnographic, qualitative research design of the study and explains the reflexive approach used by the researchers while they were gathering and analyzing data. How the data is collected and gathered and the issues and concerns that surround the topic are also outlined in this chapter. The designers are introduced as part of the methodology including who they are and how they were solicited for the study. Following is an explanation of how the inspirational sources were chosen and a justification for the style and type of photographs that were taken for use in the study. Chapter three further presents the research site and specific setup that shows the considerations for each decision that was made to carry out the research herein. Finally the ethical considerations within the study

are described as a necessary part of working with human participants in a research study.

Chapter four presents the raw data that was gathered during the study. It is divided into individual sections for each of the ten designers. The data is separated into the themes that were established when analysis was done. These themes include: 1) use of the source of inspiration; 2) exploration of the source, which was further broken down into sections of emotional responses, design elements, narration and connections to past experiences; 3) adaptation of inspirational sources; and 4) the design environments for each designer. Chapter four illustrates the data collected through tables, charts and images of artifacts and visualizations made by the designers.

Chapter five consists of the analyzed data subsequent discussion that resulted from the exploration of the data that was collected. Chapter five is also divided into the themes, mirroring the information in the previous chapter. The discussion highlights information about the role of inspirational sources and influence in the design process through comparing and contrasting the materials generated by each designer. Chapter five provides rich descriptions of textile and fibre artists through various analyses revealing a complex picture of the design process.

Chapter six makes recommendations for future research in the area of design process and then follows up with a summary and conclusions for this research project.

1.7 Summary: inspiration and Influence during the textile design process

This introductory chapter provides a brief snapshot into the study herein including the research focus and subject of study. In addition, this chapter also addresses the significance of studying inspirational sources and influences on the design process. Two perspectives are highlighted, the human ecological and material culture, which provide the foundation for this work illustrating a more holistic approach towards understanding the material (designed artifacts) and cultural (values, beliefs, actions). These perspectives provide a lens in which the designers are observed in their own environment. Also listed in this chapter is the significance of the study including the potential benefits that result from its study. Following that is a framework for this paper and the chapters that follow, from the background to conclusion.

Chapter 2 . Literature Review: Background Studies

2.1 Introduction: topics to explore relating to design process

Literature from the field of design studies is reviewed in this chapter in order to support the empirical research completed for this thesis. The main topics reviewed for this research, include design process, inspirational sources, cognitive process and visualizations and representations that shows the correlation between these topics (see figure 2.1).

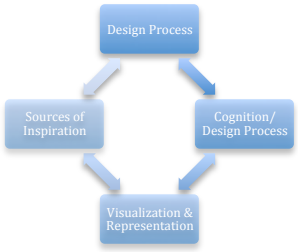


Figure 2.1: Flowchart for literature review

First, we look at how designers think and work by examining different theories and models of design process. Second, because the role of sources of inspiration in the design process is the primary focus of this study, we examine visual and verbal data to determine the importance of inspirational sources as real or representations of real biological specimens. Literature on studies of inspirational sources in the textile design process is investigated and gaps in knowledge are identified. Third, design process as a psychological cognitive process is explored as this has been a strong theme that has been identified by design researchers as playing a large part in the design process. Fourth, studies that have been carried out regarding visualization and representation as means of communicating ideas and the use of and adaptation of inspirational sources in the design process are reviewed.

A review of the literature surrounding these topics reveal in depth information on how designer's work and the cognitive processes that are at work during the ideation period and the importance of inspirational source in those processes. These four themes are reviewed as being connected to the primary research that was completed herein. Further, a look at the different theories surrounding design process and the models used to explain design process, confirm the importance of future studies. The role of inspirational sources reveals that designers rely on inspiration and influence throughout the complete design process. In addition, it is apparent that there are two design cognitive processes (i.e., perception through working memory and mental imagery through long term memory), that occur simultaneously during the design process and that previous experience and gained knowledge of the designers influences the choices that the designers make while they are designing. Finally, it is apparent that research surrounding the role of visualization and representation of ideas is also a vital part of this research. One type of representation, sketching, is a low cost but effective measure of ideation and visualization of ideas that occurs during the design process. Interestingly, through the review of the four literature themes herein, it is

revealed that on the most part further studies need to be done to fully understand what happens during the design process.

2.2 Design Process Studies: models and theories

Design process has been studied and analyzed for many years, and is often compared to scientific problem solving. See figure 2.2 for the relationship between this topic and the others in this chapter.

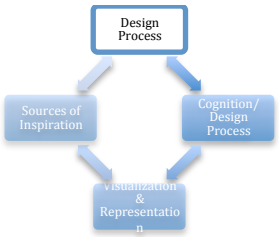


Figure 2.2: Literature review of design process

The design process can be compared and contrasted with the problem solving process. (Lawson, 2006; Matlin, 2009). On the one hand a problem-solving model includes; 1) the initial state, where the problem or issue is identified; 2) the goal state which is the desired solution; and 3) obstacles that occur during the process and must be resolved in order to reach the goal state. On the other hand the design process is more ambiguous as the outcome or solution is not always very clear and it is much more difficult to know when the best solution has been reached. The three central characteristics of the design process, as identified by Lawson (2006) include: 1) analysis of the design brief in which the designer explores relationships and tries to identify patterns to set some structure to the process; 2) evaluation of the elements and ideas that are generated; and 3) a synthesis or move towards a solution. According to Lawson (ibid) the process is then reanalyzed, evaluated and synthesized any number of times until it appears that there is no more that can be done that will benefit the process at hand.

Other studies into design process also identify scientific problem solving as usually having logical solutions, whereas in design process the situations are often messy and problematic. Rittel and Webber refer to this as wicked problem solving (Rittel & Webber, 1973; Buchanan, 1992). The outcomes are unknown until the end and much iteration and reiteration takes place during each step of the process for solutions to be found. Donald Schön supports this and calls for designers to have a "reflective practice" (Schön, 1983) which brings artistry and intuition to the design process and to embrace the uncertainty of the process and rely on the skills of the designer to come to a satisfactory conclusion to the problem.

Sometimes the design process is referred to as design methodology, and includes the principles, practices and procedures of design. Cross (2006) also includes that the study of design needs to explore how designers actually work and what they are thinking about when they work. He also refers to practitioners of design to having "designerly ways of thinking and knowing" (Cross, 2006). Through this, Cross is acknowledging that designers are unique in how they problem solve, building on the work of Ritter and Webber, Buchanan and Schön.

To better understand and assist designers towards mapping out patterns of behaviour a number of models are created. These models differ in the details of content but are typically quite similar including behaviours that are considered to be at the heart of design process. Figure 2.3 shows a six-step model based on Cross, Ulrich and Eppinger models and as illustrated by Strickfaden (2006).

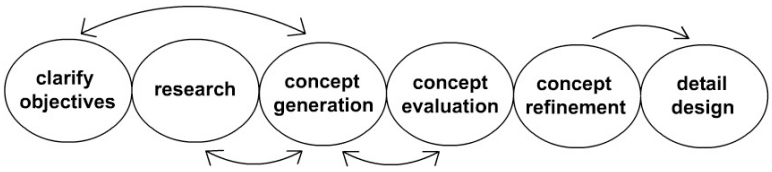


Figure 2.3: The generic design process (Strickfaden, 2006)

This model attempts to illustrate the design process into a little more detail than Lawson and shows the different stages that are inherent in design process. From identifying the objectives, researching, idea generation, to concept evaluation, refinement and finally design outcome, each stage is shown as a chain, linked together and looping iteratively.

Further to this, other models that illustrate more extensive aspects of the design process have been developed. Within these is a design environment model created by Strickfaden (2006). This model explores the different realms of design process by identifying categories that designers reference while they discuss design and the design process (see figure 2.4).

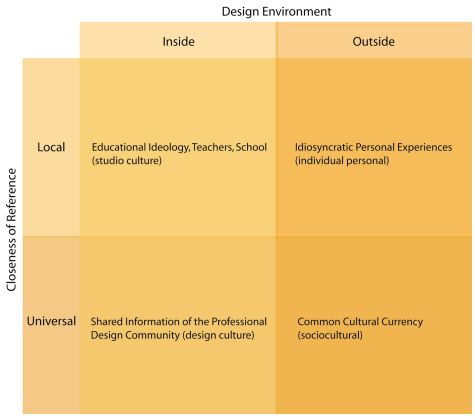


Figure 2.4: Design environment model (Strickfaden, 2006)

By charting designer's talk during their work, one gets a clear picture of the different influences the designer is involved with while working. Designers could be referring to local spheres of events or practice through education, teachers they had and other designers they encountered, or through their own life, including personal experiences. As well, they may mention more universal domains such as shared information in the design community at large or through socioculture means. The design environment model acknowledges that the designer is influenced by their context. This model presents a more holistic, sociocultural view of designing, which is in line with human ecological ways of thinking that acknowledge interconnection and greater holistic references to human ecology. In

this way, the design environment model is in line with the research herein as a starting point that visually presents themes that represent what designers are potentially considering and discussing while they work.

2.3 Sources of Inspiration: definition and background

It is important to look at inspiration as part of the design process at this point as an identifiable origin of reference (see figure 2.5).

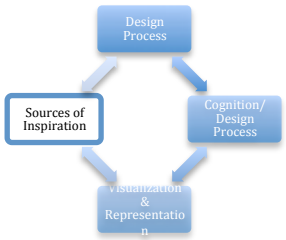


Figure 2.5: Literature review of sources of inspiration

It is possible to track inspiration throughout the design process as being at least partly responsible for the resulting ideas and material outcomes. When looking at the designed product, there can be an evident relationship to the original inspiration either directly or through the series of steps the designer took during creation. As well as looking at the various types of visualizations, it is also possible to quantify the output of the designers. Researchers have tried to map this relationship with a technique referred to as linkography (Goldschmidt, 1995). By following each critical design step in the design process, through sketches and verbal dialog, researchers track which ideas led to other ideas, which in turn led to other ideas. Researchers record each move to determine the path from inspiration to final outcome. Linkography was used to examine whether designers work better as a team or alone (Goldschmidt, 1995; Cai et al., 2010) and conducted a study that mapped the steps in the design process when giving designers various sources of inspiration and were able to use linkography to do this.

Inspiration often is confused with influences and within design studies the two are often considered interchangeable (Rodgers, 2004). Inspiration and influence are distinguishable through specific references that are used by designers. That is, influence is a consequence of what the designer already knows and acts generally to produce ideas during the creative process. Strickfaden and Heylighen (2010) refer to influence as sociocultural capital, which is the body of knowledge and experience that designers amass during their lives as designers, whether it is through education or shared experiences with other designers and design groups. Strickfaden and Heylighen's characterization of cultural capital is based on the work of Bourdieu (1986) who refers to cultural, social, economic capital and more. Bourdieu describes 'capital' as the resources that people used to assert power within sociocultural settings (ibid, 51). Building upon this, it is clear that the number of connections and the network that a designer has will influence their work as they draw on experiences and knowledge to make decisions about their project at hand. Inspiration in comparison to influence, are sources that have been researched (typically through observation) that are directly connected to the

project at hand. Some inspirational sources are clearly connected to the final outcome, while others are connected to process. Either way, according to Eckert and Stacey (2003) inspirational sources can come from many means and are the driving force behind design processes, from inception to completion of any project. The sources of inspiration facilitate thinking, referencing and practicing within the design process. Eckert and Stacey's research largely focuses on the knitwear industry where they identify a variety of inspirational sources used within the industry, many which may also be similar to those used in the textile design industry. The sources of inspiration identified by Eckert and Stacey (2003) include garments, fashion photographs, artifacts such as other textiles and images of them, and also of nature and images or other representations of nature. Eckert and Stacey further outline different methods of adaptation that occur during the process of designing. These include: 1) literal adaptation; 2) conscious simplification; 3) abstraction; 4) modification to source; and 5) association and deviation (pages 368-370). See Appendix A for descriptions of these alternative methods of transformation and adaptation of inspirational sources. Other studies reinforce the idea that inspirational sources are vital to the creative process of textile design as means of eliciting new ideas, facilitating future reference points and in aiding in design and that it is important for textile designers to continually seek out new sources of inspiration (Mete, 2006). Although inspirational sources are considered to have been acknowledged as important to the textile design process, there has not been very much research in this area (Laamanen, 2008). Only recently has this become an issue in design research (Eckert, 2000; Eckert and Stacey, 2003; Petre et al 2006; Mete, 2006). The research herein examines the use of natural specimens of butterflies, beetles and shells as sources of inspiration. Much of the research surrounding the use of biological inspiration is focused on engineering design (Helms et al., 2009) and is more about biomimicry (Benyus, 1997) than the creative process of designing. While most design processes share common characteristics, there are differences in the way textiles designers work as opposed to how engineers design (Wilson et al., 2010). Thus there is a need for more research into the design process of textile designers.

2.4 Cognition in Design Process Studies: thought processes in designing

The research herein focuses on the material culture of designing for the near environment, particularly textile and fibre art. Specifically it concentrates on how the inspirational sources are used and adapted and less on the psychological explanation of how designers think and work. Even so, it is important to examine the body of research on cognition and design in order to better understand the thought processes involved in designing which includes how inspirational sources may be used (see figure 2.6).

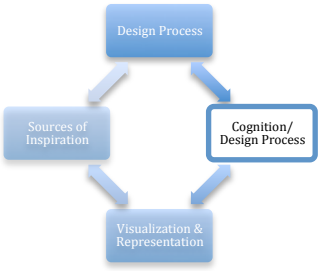


Figure 2.6: Literature review of cognition/design process

Increasingly more and more studies on the design process use cognitive psychological studies to examine the way designers work, think and interact with other designers (Lawson, 2006; Treadaway, 2007). As previously noted, the design process can be compared to the problem solving process identified in studies of cognition (Lawson, 2006). In the case of the study herein, looking at cognition and design especially informed the formulation of how to set up the experiment and what to look for when interpreting and analyzing the data, through a greater understanding of how the designer's own design process works. For this study, when the designers were given the sources of inspiration, the cognitive process of perception and the storage of new visual information occurred in their working memories and the process of encoding this information into their long term memories began. Furthermore, new ideas formed and the creative processes of designing happened; through sketching, sharing of ideas and revisiting the source of information for more detail for as long as they needed to come up with a satisfactory solution. In addition, while the designers were using this new information, they were also accessing stored information. Treadway (2007) suggests that new ideas actually rely on stored information (or previous knowledge of the designer) for their creation. She argues that the memory of human experience and of sensory stimulation is fundamental to a visual artist. Consequently, based on theories of cognition, designers will always draw on past experience and revisit previous ideas in conjunction with new sources of inspiration to create new and unique results. As we are looking in particular at the role of inspiration and influence in this process, it is important to acknowledge and understand how the thought processes and mechanisms of memory and past experiences play into the design process. For many years, there has been a great debate between cognitive psychologists about how the brain processes visual data. This is known as the imagery debate (Matlin, 2009). The two sides of the debate put forth the argument that humans store imagery in their brains in very different ways. One side of the debate believes that our minds see objects and store the information as mental images (Kosslyn, 2006). This is referred to as analog, depictive, or pictoral coding and has gained popularity with researchers, especially in the study of design process (see figure 2.7). The mental representations and role of mental images have long been considered to be related to creativity and innovation in design, but empirical evidence regarding these beliefs is relatively sparse. Tyversky conducted research that determined that designers perform higher than average in embedded figure tasks, but not on mental rotation tasks. These were typical tasks performed in experiments in

mental imagery. The embedded figure tasks required a higher level of creative thinking (Tyversky, 2005). The other side of the debate believes that people think about the object they see in terms of language-like representations (Pylyshyn, 2002). This is referred to as proscriptive or descriptive coding and shows not a mental image, rather, a description of the object or objects being looked at.

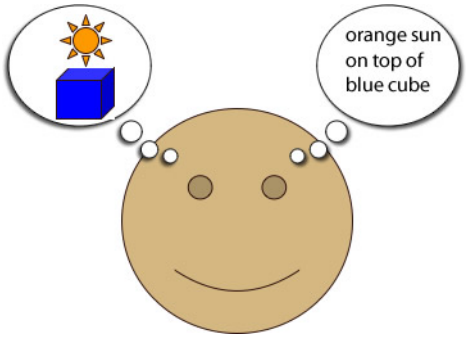


Figure 2.7: Analog coding vs. proscriptive coding

It is not the intent of this study to try to resolve this debate, but rather to take both theories into account during the observation and analysis of the data. This study herein establishes a setup that observes the external representations of the mental images through the visualization and representations they produce (analog coding) as well as listens to the verbal dialog between the designers and researcher (proscriptive coding) to attempt to develop a theory about what the role of inspirational sources are in the design process.

2.5 Visualization and Representation: imagery in design

In this study we actively analyze the various samples of visualizations and representations produced by the designers as a means of tracking and interpreting their design processes and to get insight into what they are thinking (see figure 2.8). Also, we examined these and any completed artifacts or projects to determine what type of adaptation of the inspirational sources occurred during the design process.

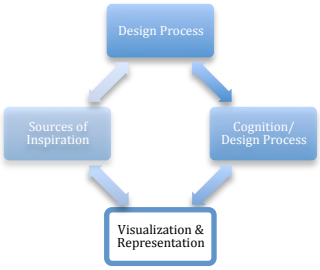


Figure 2.8: Literature review of visualization and representation

The visualizations and representations produced by the designers could be created in any type of art medium, for example, pencil on paper, fabric swatches, or computer imaging. The resulting materials could be in the form of sketches,

paintings, collages, or fully finished projects. These are important manifestations of how the designers work as they are considered to be external representations of the internal imagery that happens in the mind of designers. Many studies support the idea that the production of various visualizations is a result of cognitive activity (Kavakli and Gero, 2001; Lawson, 2006) and they support the notion that visualizations are the external representations of the internal cognitive processes. For example, one study suggests that sketching is like off-loading the internal imagery in our working memory while the ideas are fresh (Bilda, 2007).

Visualizations and representations are a low cost and efficient way for designers to record ideas and develop characteristics of products that will be reinterpreted and reworked throughout the design process and is an ideal way to see creative movements in the designer's work (Prats, 2009). The continual reinterpretation of these is vital to the design process as it is a way to display the designer's ideas in progress and provide a visual platform for evaluation and to showcase areas that need to be reworked.

Schön (1983) did a study that supports the reinterpretation that occurs when designers engage in the design process. He writes about two interactive processes that occur when designers create, that of "seeing and moving" (ibid, 139). The "seeing" relates to the perception of the inspirational source and the "moving" as the movement of the pencil on paper while producing a series of sketches. Schön speculates that the designer "sees" the sketches, looks for patterns, relationships among shapes, and refines the sketches over and over again until a satisfactory solution is found (Schön, 1983). For the research herein, the use of sketches and other examples of visualizations are a rich and dense set of data of external representations of the thought processes and idea generation of the designers while they create.

2.6 Summary

Although there has been extensive research in many of the areas discussed, very little has specifically focused on the design process in textile design. We know that inspirational sources are a vital part of the process for all types of designing and are important to the cognitive process that occurs during designing. What we don't understand are the implications of using real or representations of the same sources and how this would affect the outcome of the design process. Does offering more visual, tactile and sensory information in the source of inspiration assist the designer in their design process? Or does influence in the form of past experience and personal schema of the designers play a larger role? The study adds to the existing body of knowledge on the design process, by looking at it from material culture and human ecological perspectives and acknowledges that the these findings would benefit designers, educators, curators and textile manufactures by aiding them in making decisions about the use of various types of inspirational sources.

The research herein, starts by examining different models and theories about design process to develop a better grasp of how designers think and work. This aids in making decisions about the research herein and how theses processes relate to textile design process. Next, the literature surrounding the role of

inspirational sources in the design process is explored to facilitate understanding of it and to identify gaps in knowledge in that area. Then, the research herein investigates how studies in cognition processes, in particular, how working memory and long-term memory relate to design process to further build on the complexity of design process. Last of all, research into visualizations and representations is studied to explain the methods that designers use to communicate their ideas from a thought to a concrete plan to move forward in the design process. These four themes are reviewed as significantly connected to the empirical research that was completed herein.

Chapter 3 . Methodology: Ethnographic Mixed Methods

3.1 Introduction: human ecology and material culture perspective

This chapter describes the methodology used for the research herein, which involves both qualitative and quantitative empirical data collection. Furthermore, the research herein is steeped in material culture and human ecological perspectives, both inherently interdisciplinary, and as such the designers were studied through different sociocultural lenses such as psychology, sociology and anthropology. The research herein explores how the designers interact with the sources of inspiration and how they adapt them towards a textile project. The human ecology perspective encompasses both internal and external environments of human beings and the interactions that occur within those environments. A micro and macro perspective study of the design process is achieved through the inquiry of how the use of inspirational sources (information taken in on a micro level) and influence (knowledge and resources acquired on a macro level) through life experiences of the designers. A multiple method approach is taken in order to look more holistically at the design process and to discover the interconnectedness of inspirational sources and influence to designing.

As a starting point the research design in general is presented which is predominantly ethnographic in order to capture the nuanced details of designing. See figure 3.1, which shows the hierarchy of the stages of the methodology used for the research herein.

Figure 3.1: Flowchart for methodology

3.2. Research Design: ethnographic and qualitative

The research herein is a qualitative, ethnographic look at the way designers adapt inspirational sources during the early textile design phase (see figure 3.2).

Figure 3.2: Research design in methodology

An ethnographic methodology was chosen for the research herein as it gives the researcher a look at the way that the designers work. The researcher is present as a participant observer, rather than interviewer and this allows for a more natural flow of work and dialog between the researcher and the designer. According to Wolcott (1999) ethnographic research design gives the researcher the benefit of experiencing, with all senses, the information that they are gathering and that this type of research gives the researcher a way of enquiring that is more participatory and less passive than a formal interview may be. This method allows for better examination of what was produced and said during the research sessions. The designers were observed working in the natural setting of a design

studio to get an accurate look at how they work. Observation of the designers in this type of methodology provides a depth of data and insight into how people work (Richards, 2007).

Although the study is qualitative, there was also a quantitative element to the research. The qualitative information was garnered during the design process through the running dialog between the designer and the researchers. Also, the designers actions, behaviours and movements were captured on video and through photography. A visual record of what they did provide an overall impression of how they worked, how they manipulated ideas that arose from the use of the inspirational sources. The quantitative information was created by counting the number of visualizations that the designers created, coding the number of times they referred the source of inspiration, and the references they made about design in general.

3.3 Approach: reflexive practitioner

The approach of the researcher in this study (see figure 3.3) is that of reflexive practitioner.

Figure 3.3: Approach of researcher

Reflexive research encompasses personal reflection and careful interpretation of the research process and data analysis (Alvesson and Sköldberg, 2000). The researcher acknowledges that her background as a designer, a user of artifacts, and a design educator has the potential to lead towards specific kinds of preconceptions and assumptions about the design process and how designers work. For example there was an assumption that the group who used the specimens may use the sources more than the other group because of the depth of information that can be gleaned from a three-dimensional object as opposed to a two-dimensional photograph. It was also assumed that there would be a greater number of visualizations and references about the actual specimens for that reason as well. Another preconception was that the designers would use the photographs as documents to be traced and that there would be less innovation in the outcomes of the research sessions. To acknowledge and lessen the impact of these inherent values the researcher kept an open mind and a diary of thoughts and ideas that visit and revisit the research question, referring to the literature as well as recording what she thought the results of the study may be. The researcher was responsive to the designers and kept a journal of any actions taken (Richards, 2007). The reflexive approach also led to careful consideration of how the data was collected.

3.4 Data Collection: multiple method approach

Data collection is the cornerstone for valid research and much care must be taken to chose the best combination of methods (see figure 3.4).

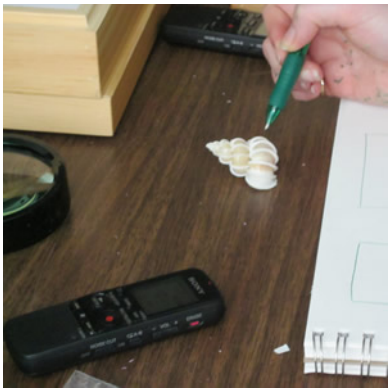
Figure 3.4: Data collection

To facilitate a complete and dense source of information, the data collection (see figure 3.4) used multiple methods that included field observation, capturing visual records using video equipment and photography, note taking, auditory records using voice recorders, and conducting informal dialog during the studio sessions. See figure 3.5 for images of these methods for data collection.

Video recording

Photography

Note taking



Audio recording

Figure 3.5: Multiple method collection

The open-ended questions that were broached during the conversations with the designers were beneficial, and according to Bernard (1995), show that the researcher has control over the process but leaves time and opportunity to explore new leads (ibid). The designers were asked to think out loud while they worked whenever possible, however, they were given space to create their designs at a comfortable pace and were asked questions when they seemed to be internalizing their processes. In particular, during the observation of the designers, if they were quiet for a period of time, the researcher would ask what they were thinking; or if they switched to a new sketch or erased part of one, were asked why they did that.

This led to either a thoughtful explanation of the choices they were making or sometimes simply "I am not sure, it just doesn't feel right". Each explanation added to the overall picture of how the designers thought and reacted during their design process. Much of the data analysis focuses on what the designers said as well as what they actually produced.

One of the key factors in setting up a study is matching the research method to the research design and making sure it is appropriate and justifiable. In addition it is important to choose the right type of data sources to observe designers in their environment. As with any ethnographic design, that studies a particular culture it is believed that photography is a valuable tool in capturing a visual representation of that culture (Prosser 1992; Mason 2005; Pauwels 2010). Photo representations can portray the actions, behaviours, interactions, and the material products of their culture (Pauwels 2010) which is significant in exploring the details of a particular group of people.

The research herein studies the textile and fibre art designers and in a design culture ideas are communicated through verbal discussion as well as visualizations and interpretations of those ideas. Strickfaden and Rogers (2007) refer to the "cultural capital" of designers that consists of the visual way they communicate, the studio culture and group dynamics. Along with audio recordings of the research sessions, the use of photography in this study would be appropriate as photographs can capture and later communicate insight, meanings, and ideas in a visual format. These become a visual record of the external actions of the designers as they are creating the textile design and all the stages they go through in this process. These actions would include social interactions with the researcher and connections of the designers with the sources of inspiration and with their tools. As a researcher and a designer familiar with visual means of communication, the visual information represented in the photographs contributes to understanding themes that naturally occur while designing. Along with the audio data collected, these themes naturally relate to the characteristics of the design problem, the activities of designing, the design discipline engaged with, and how verbally expressive the designers are while they work. Having a visual and aural record of the specific aspects of the design process is significant to addressing the research questions and is clearly linked to the resulting data.

One of the issues surrounding ethnographic research is the fleeting nature of the information that is being observed and heard. Using photography and audio recordings to capture a moment in time can help the researcher recall certain details during the time of transcribing and analyzing data (Murchison, 2010). It provides verbal and visual data to document aspects of the culture being studied as it relates to the research topic (Murchison, 2010). This helps to give a more holistic or complete ethnographical study. Images are viewed more and more as an additional resource to research. They add one more piece to the cultural inventory studied, in addition to field notes, interviews and field observation. It not only serves as a tool of data collection and interpretation, an illustration of what happened, but also as a phenomenon worth of analysis (Prosser, 1992; Pink, 2001 and Mason, 2005).

Traditionally, the use of document photography has not been thoroughly accepted as a legitimate source of research data collection as compared to other

types of data collection. Some researchers believe that it s not scientific enough for research, and that is more attuned to entertainment and persuasion, and not objectivity (Mason, 2005). Yet, other disciplines such as sociology and visual anthropology are grounded in the idea that valid scientific insight in society can be acquired by observing, analyzing, and theorizing its visual manifestations: including the behaviour of people and material products of culture (Pauwels, 2010). As more and more researchers use photography along with other forms of visual and aural research, there is a process of growth and acceptance that has begun. There is a call for researchers to continue to use photography during research and to further develop the use and publish findings using photography as a vital part of databases and as a way to communicate findings. One researcher, Pauwels (ibid), has gone so far as to develop an "Integrated Framework" that encompasses current practices of visual researchers. He outlines the differing sources of data generation and procedures of collection and encourages more reflexivity on behalf of the researcher while collecting the data. By studying and choosing from the options, one should be able to choose from them and custom make a framework for the scope of their own research (ibid).

It is the responsibility of the researcher to have the skills required to collect, organize and analyze data, and effectively communicate the findings and insights that were discovered during the project (ibid). The skill of observation is of utmost importance. There are different ways of seeing and it is significant that researchers develop what Grasseni (2004) calls "skilled vision" or an "education of attention" to aid in understanding values, beliefs and social norms of the culture that is the focus of the study (ibid). The permanent visual reminder that becomes available when using photography in conjunction with audio recordings can help in this understanding, allowing the researcher to visit the data in its original format repeatedly during the analysis of data. White cautions that when using photography to be aware that "seeing is believing" (White et al., 2010). With all visual data the researcher needs to always keep in mind that although photographs capture moments in time and allow us to see events or products, they are always seen through the filters that are imposed by the decisions made by the photographer when the photographs are taken. As well, with audio recordings, it must be noted when the researcher possibly "led" the conversation in a certain direction, therefore incurring a bias to the data collected.

To effectively use photography and audio recordings as data the researcher must also be aware of the different viewpoints to consider when discussing context and interpretation of the images and the transcribed text (Banks, 2001; Mason, 2005). One viewpoint takes into consideration the intent or content that the photographer portrays when taking the picture. The very nature of photography imparts a bias or interpretation of events, by the photographer on the resulting image. Banks (2001) refers to this as the external narrative of the image. Another aspect deals with respect to the viewer of the image and what communication and information they derive by looking at the picture. Banks refers to this as the internal narrative (ibid). Pink (2001) backs up this issue of context as a concern when using photography or any type of visual research. She states that there will always be some interference of information in using this type of data generation and what are needed are reflexivity and an acknowledgement of

that interference or context of the image being used. The researcher must always be cognizant of how the photograph was produced and how it will be used for data analysis (ibid). Mason also writes about the need for reflexivity as a researcher and when using visual data sources it is particularly important (Mason, 2005). The researcher must take into account the context that the image was taken in by understanding and making note of that context when viewing the source. The context will have different meanings for different people, so there is a need to address the context when analyzing visual data (ibid). In the study of textile designers, as in all qualitative research, the researcher must be personally reflexive through a deep consideration of the way they view and interpret the images, taking into account the bias of the photographer, the context of the picture taken and how their own values, experiences and beliefs will colour their interpretation of the image. By concurrently monitoring their process and recording and acknowledging all of these factors the researcher reduces the threat of not being objective when analyzing the data.

3.5 Designers: ten textile designers

The process of choosing the most appropriate designers for a research project can be quite complex (see figure 3.6).

Figure 3.6: Designers

Purposive sampling was used to obtain the sample that represents the characteristics required for the study (Richards, 2007) (see figure 3.6). There was a snowball effect in that a few designers spread the word in their design community and encouraged other designers to participate. The focus of this study is on design processes, therefore, it was necessary for the designers be designers with experience who have a background in design. This ensured that they were able to use the language of design to express their thoughts and actions and that they could create a designed artifact during the course of a research session. Even though the language of design may vary with each designer, an understanding of what their process is like needed to be articulated during the design and subsequent research sessions.

This study herein involved ten textile or fibre art designers as designers. They were solicited through an invitation to participate that was advertised in the Alberta Craft Council weekly newsletter. See Appendix B for a copy of the invitation. Through that avenue, five suitable designers volunteered their time and expertise. In addition, the researcher visited an exhibition that was sponsored by the Fibre Art Network of Western Alberta and at this time solicited five more designers.

The different backgrounds of each of the designers contributed to a variety of outcomes and a mix of styles, of tools used and references made. The experience of each designer was varied but extensive. See Table 3.1 for an overview of the participating designers.

Designer #	Textile Design Experience	Years of design experience
1	Quilting	15+
2	Three dimensional soft sculpture	30+
3	Paint/block print on silk	10+
4	Silk painting	10+
5	Rug hooking	25+
6	Quilting, dying and block printing	20+
7	Multi-media wall hangings and installations	13+
8	Silk fusion, shibori, discharge dying	15+
9	Sewing, needlepoint	20+
10	Felting, silk fusion	30+

Table 3.1: Overview of the designers

The range of years that the designers were experienced ranged from 10 years to over 30 years in the design industry. Only two were textile designers or fibre artists on a full-time basis, the rest had other jobs and designed when time allowed. Most of the designers regularly had their work displayed in exhibitions, galleries, and other venues. Many of them taught workshops, gave lectures and were active in promoting textile and fibre art design to the public locally, nationally and internationally. The crafts they employed included: rug hooking; silk painting/printing/screening; quilting; block printing; multi-media; 3D soft sculpture; felting; shibori using discharge methods; painting canvas and using stitching threads as embellishments.

3.6 Sources of Inspiration: specimens and photographs

The research herein is concerned with exploring how designers adapt inspirational sources in the textile design process (see figure 3.7).

Figure 3.7: Inspirational sources

Based on research accomplished by Eckert and Stacey (2003) in order to map inspirational sources, it is important to provide specific examples for designers to use (see figure 3.7). Consequently, two sets of inspirational sources were selected in order to compare and contrast ways that designers use these. The sources of inspiration that are integral to the research were presented to the different designers in one of two ways. One way is the primary source of inspiration, the actual three-dimensional specimens and the other is two-dimensional images of the same specimens in the form of photographs (see figure 3.8 for the two types of inspirational sources).

Figure 3.8: Two types of inspirational sources: actual specimens (L) and photographic representations (R)

The designers were given specimens from nature including butterflies, beetles and shells. Offering the designers real or representations of the inspirational sources supplied five designers with real and five designers with representations, with similar information in different formats. On the one hand, the real specimens are very vibrant with colour and texture and dimension (three-dimensional). On the other hand, by the very nature of photography, while the colour may parallel that of the real specimens, the images are two-dimensional and there will be some interpretation and context already placed on the specimens by the photographic bias, the size of the image, the angle of the picture, lighting and many more elements of photography. The specimens are part of an extensive collection, courtesy of Dr. Tomislav Terzin of Augusta Campus, University of Alberta.

The three-dimensional specimens were mounted and labeled in glass display cases (see figure 3.9). There were six butterflies in one case, six beetles in another and seven shells in the last case. They were chosen as suitable sources of inspiration because of the inherent design elements they possessed that they could provide for the designers. When chosen, things like texture, colour, shape, pattern and other design elements were considered. They were available to be handled with care and examined in detail by the designers.

Figure 3.9: Three-dimensional inspirational sources

The photographic images of the inspirational sources were presented in three different sizes for each specimen. One is actual size, the second is magnified ten times, zooming in to highlight details and the last is magnified one hundred times,

again focusing on details of the specimens. The half of the group who used the real biological specimens had access to magnifying glasses to assist them in their work; while the other half had access to the images which were laid out for each session (see figure 3.10).

Figure 3.10: Two-dimensional inspirational sources

Along with the two sets of inspirational sources, the designers were also given supplementary information that showed an image for each specimen along with a brief description and it's scientific nomenclature. For example, figure 3.11 shows one specimen as an example, the others can be found in Appendix C.

The Paper Kite
Family: Nymphalidae
Name: *Idea leuconoe*
→ found in Southeast Asia, feed on *Parsonia* species, a type of dogbane.

Figure 3.11: Supplementary information with inspirational sources

3.7 Research Project: site and setup

The following section outlines the setup and describes the research site for the research herein (see figure 3.12).

Figure 3.12: Research site and setup

For the purpose of this research, it was important to create a study that was as naturalistic as possible. That is, we wanted the designers to create in a way that was natural to them in a setting that they were comfortable with. Consequently, the majority of designers chose to complete their "project" in their own studio. In addition, it was important that the designers work in the way they were

accustomed to (e.g., alone or with a colleague) with the supplies and equipment that they desired. Table 3.2 shows a breakdown of the designers and their contextual situation within the context of this research.

Designer	Tools used	Studio
1	sketch book, pencil, felt pens, pencil crayons, magnifying glass	Home studio
2	sketches, pencil, paper, sewing machine, pre-dyed linen, bamboo stick, sewing machine, thread, fusible webbing, iron, scissors, cookie cutter.	Home studio – in garage
3	Pencil, tracing paper, sketching paper, watercolours, paint brush, felt pen,	Shared studio space with other designers
4	sketch paper, felt pens, magnifying glass, pencil	Classroom at U of Calgary
5	light source, water colours, paint brushes, pencil, photocopier, sketch paper, water bottle	Textile design studio at U of Alberta
6	pencil, graph paper, fabric, speedball block, block cutters, quilter's ruler, cotton, seta-silk dye, brayer, canvas fabric, scissors	Home studio – 2 rooms
7	sketch book, pencil crayons, pencil	Home studio/office
8	Sketch book, pencil, black cotton fabric, bowl, chalk, ruler, thread needle,	Textile design studio at U of Alberta
9	sketch paper, pencil, canvas fabric, acrylic paints, sewing machine, scissors, thread	Home – in kitchen
10	sketch book, felt pens, merino wool rovings, silk yardage, silk fusion paper, pool noodle, bubble wrap, hot soapy water	Home studio – 2 rooms

Table 3.2: Designers and context

Two of the research sessions took place in the textile design studio at the University of Alberta. One designer used the specimens and the other used the photographs. The other eight sessions were held in the home or office studios of the designers. Seven of the sessions were held in Edmonton and area, two in Calgary, Alberta and one in Red Deer, Alberta.

In general the designers used their own tools and materials to produce sketches, renderings and, in some cases, finished pieces of work or artifacts. The researcher supplied other basic tools and materials. These design tools included sketchbooks of various sizes, drawing tools, paints, and rulers. To facilitate close inspection of the three-dimensional real specimens, among the tools available for the designers were magnifying glasses, and cameras as indicated in figure 3.7.

Figure 3.13: Tools and materials supplied by the researcher

Of the ten designers, four used some of the tools and materials supplied by the researcher and six used their own. Naturally, the designers were also provided with the inspirational sources, in each case at the onset of the study. The designers were not aware that the inspirational sources would be provided and certainly did not know the nature of them, even those who knew others who participated in the research. Interestingly some of the designers immediately embraced the idea of using them while others were more cautious and seemed attached to their own influences and inspiration. Four designers brought their own inspirational sources and readily discussed how they had used such sources in the past.

Video, audio and photography equipment were setup at the start of each session. The sessions lasted anywhere between approximately 1.5 to 5 hours, and on average they lasted around 2.5 hours. The designers were told they were in control and that they could decide when they were finished with the design project. Each session had a natural ending when the designer felt that they could no longer do anything else with their project. See table 3.3.

Designer #	**Researchers**	**Session length hr/min**	**Completed a project yes/no**
1	LS/MS	2:06	no
2	LS/MS	2:54	yes
3	LS/AB	1:48	no
4	LS/AB	1:27	no
5	LS	2:46	no
6	LS	2:15	yes
7	LS	1:40	no
8	LS	2:14	Yes – half in session /finished after
9	LS	4:16	yes
10	LS	2:10	Yes – half in session / finished after

Table 3.3: Length of session and completed projects

As noted previously, the researcher was a designer observer who engaged in dialogue with the designers. At the same time, the researcher was mindful that the designers each had their own process and provided space for them to complete a project. Two researchers, mainly for training purposes, conducted the first four sessions and only one researcher conducted the last six sessions. To engage designers and focus on their design process, a number of open-ended questions were asked during each session. Typical questions were; 1) ”why did you choose that specimen (or photo)?”; 2)”What are you thinking?”; and/or 3) ”why did you erase or change that sketch?”. Most importantly, however, the researcher/s never forced the use of inspirational sources or mentioned them beyond the introduction at the beginning of the session when they were laid out for the use along with the tools and materials.

3.8 Ethical Concerns: human designers and data control

This study involves human designers and according to the Research Ethic Board of the University of Alberta, needed ethics approval (see figure 3.14).

Figure 3.14: Ethical concerns

Approval was granted in June 2012. Part of the requirement for approval was making sure the designers were fully aware of what the study was about and how it may affect them. During initial contact and recruitment, the designers were informed of the risks and benefits of participating in the study. This was all explained in detail at the start of the start of each session and they were asked to read the information sheet (Appendix D) and sign a consent form (Appendix E).

As with any type of data collected in research there is a need for rigor in the gathering, analyzing and communication of the findings. The designers will be guaranteed anonymity in all dissemination of information. The researchers will take care not to present findings that in any way reveal the identity of a designer even through quotations in dialog. In any instance where the researchers want to publish findings that use visual images in the form of photographs and video tape, the designers who may be affected by this, will be contacted and asked to give signed permission for this to happen. If they refuse to give permission, the images will not be used.

It is important to consider not only the use of the photographs for analysis, but also how they may be used when presenting findings in print form (journals, books, etc.), and in visual presentations or conferences. The Freedom of Information and Protection of Privacy act (FOIP) must be followed as it is for any kind of ethical research. In the case of this study, many of the photographs taken are of art and design work that is created by the designers and is subsequently representative of the designers' intellectual property. This creates further need for informed consent and protecting the designers. In all cases the designers were happy to share the work they completed during the session because it was not representative of their usual body of work.

There is the reality that there are a few more issues than the standard ethical concerns when using photography in research. There is the question of what happens if the photographs become possible commodities when studies are published online. Who actually owns the images and how will they be used. Even if the researcher takes all precautions, once the images are used in a publication, others may use them in a way not intended in the original study. Publishing could be problematic as well as ownership of the images (Pink, 2001). Researchers are very diligent in taking all the issues into account and informing the designers of their rights and getting consent from the designers at the start of the study. They will also have to be aware that some concerns may present themselves during and after the study and will need to be addressed at that time.

We guarantee no harm to the designers. They had the right to withdraw from the study at anytime during the session. They were told who has access to the information and at any time can ask for additional information regarding the ethical conduct and practices of the researchers.

Raw data and completed documentation will be kept secure in the office of Dr. Megan Strickfaden in the Human Ecology Building, University of Alberta. No

copies were made of any of the personal and identifiable information. These were placed in envelopes and in a locked cabinet. Any audio recordings, videotapes and still photographs were also not be copied and they will be kept in a locked cabinet or a password protected computer file. As required by ethics procedures, raw data remains in the locked cabinet for five years following the completion of the research project (July 2013+five years). Following this period, the raw material will be destroyed.

3.9 Data: types and analysis

Figure 3.15: Data types and analysis

The resulting data types collected are audio and video recordings of the design process and discussions with the researcher/s, fieldnotes taken by the researcher/s, diary notes taken by the researcher, the actual artwork created by each designer, and photographs of the design process of each designer. The audio recordings were transcribed verbatim in order to capture the details and nuances of design process. This included transcribing the exact words of the researcher/s to check for any leading phrases or comments. The fieldnotes were typed up and used to complement and triangulate with the transcripts. The sketches, diagrams, and actual artwork of the designers along with the photographs taken by the researcher/s were placed in sequential order to represent the flow of the design process.

An additional challenge concerns the use of photography in qualitative research and that is the inherent challenge to effectively communicate findings that includes images to convey meaning. How to communicate the findings and results where they rely in some way on the visual, can be an issue in traditional scholarly format, which is not generally open to creative means of communicating in a way that encompasses images and text (Pink, 2001). Often journals will only allow a certain number or size of image to be included in the publications. However, with advances in technology, a growing attraction for multimedia and design elements to be included in scholarly texts is occurring. The use of imagery including drawings, photographs and other forms of visualization are considered acceptable if not completely beneficial in areas such as design studies and material culture. Consequently, the use of imagery in research is a growing resource that will continue to grow and assist in better ways to conduct research.

There is a need for careful analysis of what data is used and interpreted, much like any data gathered in qualitative research. It is believed that it is through increase use of image and the dialog that accompanies this use will help to promote further use of visual research practices and bring them more into the norm (Mason, 2005). As the technology for taking images becomes less and less expensive it will be more readily used.

3.10 Validity and Limitations: rigor in research

The research herein recognizes that validity is important to the research process and agreement (see figure 3.16).

Figure 3.16: Validity and limitations

The key to overcoming this concern of validity is to combine different methods of data generation and continually compare and contrast what the information tells us. The researcher explores the relationship between a variety of sources and the results can be a dense and powerful body of data. Rather than raising the issue of context in one format, when using more than one type of data collection, the use of multiple methods or overlapped methods help to contextualize each other (Pink, 2001). There are certain parameters that must be followed when using visual research to ensure validity. The researcher must always be aware of their cultural belief systems and make explicit any biases they may have before the study begins to effectively reduce any question of objectivity in the resulting findings. There must be an awareness of the internal and external validity of the images, i.e., again with care taken to objectively take the pictures (external) and then to assess the meaning of them (internal) with little or no editing or manipulating of them (Mason, 2005). Photographs can be distorted and manipulated and may produce specific meanings, but also can act as literal records of specific events. A combination of sources of information such as field notes, interviews and aural input the researcher can gather a vast amount of data in which to analyze. This strengthens the argument that visual research needs to be used in combination of other methods of data generation (White et al., 2010).

The research herein faced a few limitations that need to be addressed. One is the size of the group that was studied. While it would have been beneficial to hold more sessions with more designers, there was a time limit involved to facilitate the finishing of the study and subsequent writing of a thesis to fit within the deadlines imposed by the university. Another limitation involves expense and travel. There was interest from designers out of province (eg., Montreal, Quebec and Salt Spring Island, British Columbia), but again because of time and a limited budget, only designers in central Alberta were considered for participating.

3.11 Summary: methodology

The methodology outlined in this chapter, illustrates a more holistic approach to the execution of this research herein. It begins with the choice to use an ethnographic, qualitative research design to allow the designers to work in as natural setting as possible. Then moves to the approach of the researcher as a reflexive practitioner to ensure validity and rigor. Next, this chapter explains the way the data was collected and clarifies all the factors that were considered when setting up the research. After that, there is a section on who the designers are and how they were solicited to join the research herein. As this research has a focus of the use of inspirational sources in the design process, the next part of this chapter

describes the inspirational sources used in the study and how they were presented to the designers. Further, the setup of the research is laid out to give context to the setting that each designer was observed in. Next, there is a section on the ethical concerns that were considered and how they are and will be dealt with for the duration of this study and beyond. After that, there is an explanation of the types of data that were collected and how they were analyzed. To complete the chapter on methodology, there is a section on the validity of the research, or more specifically, the measures taken to ensure validity. Last of all, there is a discussion on the limitations of this research.

Chapter 4 . Data: Verbal & Visual

4.1 Introduction: data collected

The research herein generated a dense bank of raw data. Following is the data as recorded for each designer. First of all, there is a description of the designer and some notes about how they like to work. Second of all, there is a table that identifies the textile medium that each designer usually works with and the number of years they have been designers. Also noted is the length of their session, and the number of times they referenced the sources of inspiration and the tools that they used. Third, there is an overview of the designer, where they worked and additional details that were observed. Fourth, there is a table that is a visual representation of the particular source of inspiration that they focused on and the resulting visualizations and/or textile project that they created. Fifth, there is a table that charts the references the designers made during the exploration stage of the design process. The table records inferences of the designer about experiential connections, narrative, design elements and the emotional connections of each designer when working. Sixth, there is a table that shows the references made about their personal design environment/s which is illustrated through the design environment model by Strickfaden (see chapter 2, table 2.4). Analysis of this data will be explained and explored in the following chapter. The data from the five designers (designer #1-5) that used the specimens for sources of inspiration are shown first and the data from the five designers (designer #6-10) that used the photographs are shown second. See Appendix F for enlarged images for all the designers.

4.2 Designer #1: quilter

The first designer is a female who lives in Sherwood Park, Alberta and is primarily a quilter. This designer typically works in the mediums of cloth, and thread because she is a mainly a quilter. She designs and creates projects for exhibitions and explores issues surrounding health, social topics and her personal journey in life. Many of her projects are made for hanging on walls. As well as traditional quilting, she also explores photo printing on her fabrics. She has a well-equipped home studio, with cupboards of fabrics, paints, installation equipment, sewing machine drawing and measuring tools. She was able to gather the necessary equipment to aid in the research project. She had an open mind about what was going to happen and quickly engaged with the specimens and got to work. During the session there were many side conversations about other projects she has worked on and diversions to look at past projects. See table 4.1 for a summary of designer #1.

Textile/fibre art: quilts	Years in design: 15+
Research location: home studio	
Session length: 2:06 hours	
References to source material: 27	
Tools used: sketch book, pencil, felt pens, pencil crayons, magnifying glass	

Table 4.1: summary of designer #1

Designer #1 engaged in the design process in a particular way. Her pattern of behavior was as follows:

- Looked at all the specimens and right away liked the beetles.
- Chose the *Chrysochroa toulgoeti* beetle and worked with it for the duration of the session.
- Examined the beetle extensively
- Sketched out some ideas and made notes for potential projects.
- The visualizations were for two-dimensional patterns based on the ridges on the bottom of the beetle or from the shape of the outline of the body.
- The last sketch was an idea to create a three-dimensional oversized bug that could be made using various metallic and textured fabrics that she had available in her studio.
- Pulled fabrics and shiny bits that could be used toward making the sculpture
- Ended the session choosing not to create a finished product.

This pattern of behaviour was naturally connected to certain kinds of actions. These actions predominantly included looking and reacting to what she saw through sketching and note taking. See figure 4.1 for a summary of the sketches.

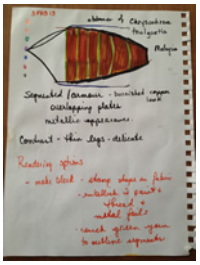
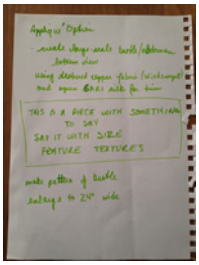
SOURCE	ART/ADAPTATIONS - sketches		
			

Figure 4.1: source, sketches and notes by designer #1 – quilter

Designer #1 talked during the session and shared her thoughts and ideas which can be categorized into the four main themes of the exploration stage in the design process. See Table 4.2 for a breakdown of the different references she made while working.

EXPLORE	
Connection • Book on butterflies • garden inspires her • sheer overlays to get opalescence • magpie stash of bits of fabrics and shiny bit (for inspiration) • materials on hand	**Narrative** • Design processes • "how did Tom mount the specimens?" • "how does the camouflage work?" • "This bug has something to say"
Emotional • Feminine shell • interested in metamorphism	**Design Elements** • Texture • patterns • colours • representational • shapes and form • zinger (eye catching colour) • abstract, stitching

Table 4.2: references made by designer #1 while exploring the specimens

Along with exploring the inspirational sources, designer #1 made many references to personal experiences and these are categorized in table 4.3 to aid in understanding the different environments that affect designers when they work.

	Inside	**Outside**
Local	• Fibre Art Network-she started with 5 artists, • shows with Filamental • has worked with friend (fibre artist) • makes sure her 3D works are durable for installation • husband is biologist so she likes nature and bugs	• Studio & space • sketches her garden • her design process • works chronologically (very left brained) • sketch book has photos, notes, sketches, swatches, and internet references and images
Universal	• Has a butterfly book and loves to research them • quilters will add a zinger (bright embellishment to draw the eye) • where she buys her fabrics, • likes Andy Goldsworthy, an artist who creates art in nature	• Fibre Art Network website gallery page • yoga practice inspires her • show about immigration from Britain during the war • art as healing and stimulus for change

Table 4.3: design environment for designer #1

4.3 Designer #2: fibre artist

Designer #2 is a fabric artist who engages in creating three-dimensional soft sculpture. This designer lives and works in Red Deer, Alberta and has a home studio in the garage of his home. The studio is a dedicated space that is used only as a studio. Designer #2 has a store of fabrics, threads, sketches, books and equipment like a sewing machine, iron and ironing board in his space. He has worked as a design educator and has shown his work in many exhibitions across Canada. See table 4.4 for a summary for designer #2.

Three-dimensional soft sculpture	Years design experience: 30+
Research location: home studio	
Session length: 2:54 hours	
References to source material: 18	
Tools used: sketches, pencil, paper, sewing machine, pre-dyed linen, bamboo stick, sewing machine, thread, fusible webbing, iron, scissors, cookie cutter.	

Table 4.4: summary for designer #2 fibre artist

During the session with designer #2, his pattern of behavior was that he:

- Looked at the sources of inspiration and didn't seem to really pick one.
- Started sketching from previous sketches that he had on hand (he spent quite some time looking for the sketch he wanted to use) and used the body of a man from one.
- Traced a rabbit head from a cookie cutter that he had in his studio.
- Added a patch that was inspired by the *Chrysochroa buqueti* beetle.
- Picked hand-dyed linen fabric and mentioned that one of the pieces reminded him of a butterfly pattern.
- Made a linen wall hanging, cutting and stitching the pieces on. Added a bamboo rod for hanging.
- Ended the session when the project was completed.

This designer worked with the inspirational sources and with materials he had created previously. Figure 4.2 illustrates the sketches and subsequent project that was completed by designer #2.

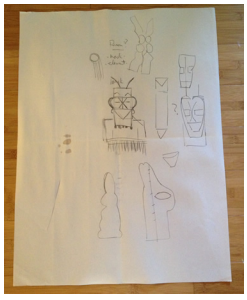
SOURCE	**ART/ADAPTATIONS – sketches & artifact**		
			

Figure 4.2: source, sketches and project by designer #2 – fibre artist

While working on the textile project, designer #2, the fibre artist, made many references to past experiences. See table 4.5 for a listing of these references.

EXPLORE	
Connection • Doesn't consider himself a designer • Books on African tribal influence • tribal in past work • previous techniques • using his own drawings • materials on hand • "linen addiction" • 50's pottery • Danish/Swedish textiles	**Narrative** • Text leads to visual stuff • puts the text back into textiles • always do something with text • camouflage attracts/protects • totem • tribal • story of embroidery
Emotional • this research a forced situation • have a response for • "TADA!" • "its got to be the bee's knees" • religion, shroud of Turin, • adventure of the moment • kamikaze kind of day • tribal uncomfortable • 1970's • fun	**Design Elements** • Draw, pencil • Pattern • stripes/dots & x's • beautiful shape and form • sculptural • shiboriland • contrast • layers • colour/sloppiness of threads • process • balancing colour • graphic thread

Table 4.5: references made by designer #2 while exploring the specimens

The design environment of designer #2 is illustrated in table 4.6.

	Inside	**Outside**
Local	• Toronto exhibition "words" wit wisdom and world • taught kids art on cruise ships • Mentioned contextual design group in Calgary, • artist and printmaker at Ontario College of Art & Design • series & exhibitions	• is a painter and sketcher, • exhibitions • old portraits in current works, • spent a summer in Europe drawing • dyes fabrics • works have little colour • Walt Whitman poem project – text reversed to make interesting

Universal	• Book of ceremonial masks of Africa • African art work • Alberta Craft Council exhibits his work • fabric traditions from around the world • embroidery symbols • appliqué in India,	• Sacred societies • Villages of artists - they do art so well why do we bother? • kids & creativity • animal symbols – tribal & spiritual • religious artifact • how artists live • 50's pottery & macramé • Danish & Swedish textile

Table 4.6: design environment of designer #2

4.4 Designer #3: silk painter

Designer #3 is a silk painter who lives and works in Calgary, Alberta. She has her own line of silk clothing that she prints, paints and dyes the silk before constructing the clothing. She shares studio space with three other fibre artists, but often works alone at the studio. Each designer has their own space and designer #3 has a large workspace that is lined with cupboards and shelves. She has available fabrics, dyes, paints, sewing machines, ironing equipment and a broad assortment of drawing and measuring tools. There are numerous projects hanging in the studio in various stages of completion. See table 4.7 for a summary.

Design background: silk painter/block printer	Years practice: 10+
Research location: shared studio space with other designers	
Session length: 1.48 hours	
References to source material: 12	
Tools used: pencil, tracing paper, sketch paper, watercolours, paint brush, felt pen,	

Table 4.7: summary of designer #3

During the research session with designer #3 her pattern of behaviour showed that she:

- Looked at all the specimens and chose the paper kite butterfly because of its graphic contrast.
- Thought it would make a good motif for a repeat pattern.
- Sketched from looking at the butterfly using a blind contour technique
- Experimented with different repeats from what she had drawn.
- Traced a pattern and tried different ways to colour it.
- Thought it might be nice for a printed textile.
- Claimed this would make a good pattern for a block or a screen to print onto silk.
- Ended the session with a usable sketch.

During the exploration of the inspirational sources, designer #3 engaged in adapting the sources and creating visualizations towards a concept for a project (see figure 4.3).

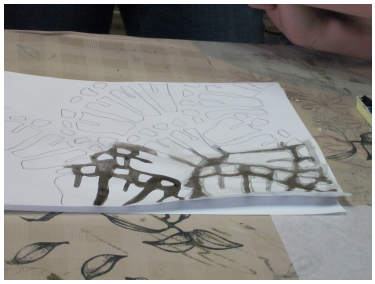
SOURCE	ART/ADAPTATIONS – sketches & painting	
		

Figure 4.3: source and visualizations for designer #3 – silk painter

See table 4.8 for the exploration themes that were apparent during the research session.

EXPLORE	
Connection • Previous work • picks a small area & sketches • blind contour drawing • likes dyes • likes direct repeats • commonly works on a computer • procrastinates	**Narrative** • Gets the essence of a thing
Emotional • likes to get a feeling of whatever she is drawing with • room for movement • challenge to print	**Design Elements** • Shape • line of antenna • recreate pattern of the shapes • vein pattern of butterfly • watercolour colour matching • blending texture

Table 4.8: references made by designer #3 while exploring the specimens

Designer #3, silk painter made some references to personal experiences during the research session. See table 4.9.

	Inside	Outside
Local	• attended workshop with a noted fibre artist • Nova Scotia College of Art & Design (NSCAD) • Alberta College of Art & Design (ACAD) • conducts summer workshops • residency • instructor made them sketch from nature & she internalized that concept	• coworkers she shares studio with • likes to work alone • commissions • clothing line • monthly meetings • show once a year • Runway monthly • looks at the small things (not landscapes)
Universal	Where she purchases her materials,	• website for her business • business presence on facebook

Table 4.9: design environment for designer #3

4.5 Designer #4: silk painter

Designer #4 is a silk painter who lives and works in Calgary, Alberta. She is a graduate of the department of Human Ecology at the University of Alberta and took two textile design classes over seven years ago. She creates silk hangings and scarves for sale and for exhibition purposes. This session was held in a classroom at the University of Calgary where she is working towards getting her Master's degree. She brought drawing tools and sketchbooks, books for reference and inspiration and she had samples of her work hanging on the walls. See table 4.10 for a summary of designer #4.

Design background: silk painter	Years practice: 10+
Research location: studio – classroom at University of Calgary	
Session length: 1.27 hours	
References to source material: 22	
Tools used: sketch paper, felt pens, magnifying glass, pencil	

Table 4.10: summary for designer #4 silk painter

The pattern of behaviour for designer #4 included that she:

- Used many of the specimens to get ideas for future projects
- Used coloured felt pens and liked to work with big sheets of paper.
- Often combined two or more specimens to get a motif or pattern that satisfied her.
- Used the magnifying glass a lot.
- Created 10 sketches for potential projects that included scarves and wall hanging that focused on pattern and colour.
- Ended the session with multiple sketches.

Figure 4.4 illustrates the sources used and the sketches created by designer #4.

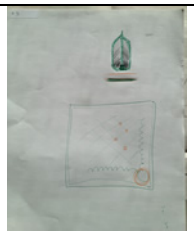
SOURCE	ART/ADAPTATIONS - sketches
   	  

Figure 4.4: sources and sketches of designer #4 – silk painter

See table 4.11 for the references to the exploration themes that were apparent during the research session.

EXPLORE	
Connection • Hiking • library books • previous techniques	**Narrative** • none
Emotional • none	**Design Elements** • Brush stroke • Layout • stacked motifs • colour gradation • spines, shape • striping and segment lines • repeat • container for colour (with resist lines) • balance • border purples, blues • polka dots design • geometric diamond grid

Table 4.11: references made by designer #4 while exploring the specimen

The references to the design environment are listed in table 4.12.

	Inside	Outside
Local	• Scans & manipulates her work in Illustrator • interested in digital printing • textile design with at University of Alberta	• Goes hiking a lot and enjoys nature and the specimens • interested in using the camera to take pictures of specimens

Universal	• Royal Alberta Museum butterfly (moth) display • Calgary Public library to research • line drawing from the internet	• Colourlovers.com for colour choices • cooler.adobe.com

Table 4.12: design environment of designer #4

4.6 Designer #5: rug hooker

Designer #5 lives and works in St. Albert, Alberta. She recently moved from Montreal, Quebec where she worked as a fashion illustrator for over 20 years. She hooks rugs that illustrate people against landscape backdrops. Her work is shown at galleries across North America, and is featured at the Alberta Craft Council. She also conducts workshops for rug hookers and has a small self-published book on design elements for rug hooking. She works from photographs of people (mainly her family) and adds background. She dyes and cuts the wool that she uses to hook the rugs. This session was conducted in the textile design studio at the University of Alberta, but the designer brought all her own tools to create. She was under the impression that we were just going to watch her work on a project and was not expecting to have to use the inspirational sources. However, she did use the wing pattern of a butterfly as part of the project she was currently working on. There were no plans to actually incorporate the pattern on the actual project. See table 4.13 for a summary of designer #5.

Design background: hooks rugs	Years practice: 25+
Research location: surface design lab at University of Alberta	
Session length: 2:46 hours	
References to source material: 10	
Tools used: light source for tracing, water colours, paint brushes, pencil, photocopier, sketch paper, water bottle,	

Table 4.13: summary for designer #5

During the research session the designer displayed patterns of behaviour where she:

- Used the specimens briefly and only looked at the paper kite butterfly.
- Brought a project to work on and added the pattern of the butterfly to the skirt of the girl in the photograph that she was using for an ongoing project.
- Didn't look at the source after the first examination.
- Traced the photograph she brought, added the skirt pattern, photocopied the sketch and then painted in the chosen colours.
- Ended the session with a water coloured sketch

See figure 4.5 to view the source used, and visualizations for designer #5.

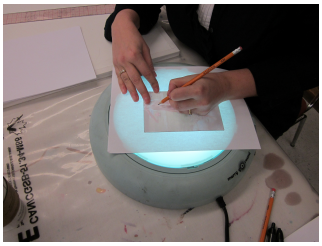
SOURCE	ART/ADAPTATIONS – watercolour rendering	
		

Figure 4.5: source and visualization for designer #5 – rug hooker

See table 4.14 for the exploration themes that were apparent during the research session.

EXPLORE	
Connection • Previous work dictates all her work • wools textured • dye dulls the colours • never works with black • Alberta Craft Council • works in series • might change in future to include some of what she did in the study	**Narrative** • Story of Quebec and her move to Alberta • pattern has to accurate so the species can be identified • story of her life and move to Alberta and about Canada & the movement of other people coming here.
Emotional • Free with symbolism • depicts a perfect day everybody happy • black birds represent the difficulty of the move • her rugs are all calm	**Design Elements** • Sketches • photos, photocopies • paints-dyes and hooks. • landscape • butterfly graphic black/white, • iridescent, • pattern • 3D work in future • background-dress is so graphic • flight positions • pattern of dress • strips of wool and colours • form • line quality with thread • movement • borders

Table 4.14: references made by designer #5 while exploring the specimens

The references to the design environment by designer # 5 are listed in table 4.15.

	Inside	Outside
Local	• Her book for teaching • Workshops • degree in fashion design • uses family & friend in work • teaches • doesn't teach in her studio anymore	• Merges Quebec into Alberta sceneries • started by reproducing oil painting • connected to Quebec • refers to past work • working on her series • dyes her own wool • lack of balance in work/life • materials & tools • tells a story of her life & of Canada
Universal	• Alberta Craft Council • landscapes are larger here than in Quebec • shows/exhibitions • Shares gallery space with other artists • pictures from the internet • visits museums uses their brochures & art books for inspiration • finds Alberta Art Gallery disappointing	• Landscapes as symbolism • blackbirds are represented in her work

Table 4.15: design environment for designer #5

4.7 Designer #6: quilter

Designer #6 is primarily a quilter, but also loves to dye her own fabric and creates textile scarves and projects using the block printing process. She lives and works in Edmonton, Alberta. She also is a design educator and has many projects that have been included in exhibitions across Canada. She currently makes printed scarves as banners for the Alberta Opera. She works from a home studio consisting of two rooms. One is filled with fabrics, sewing and ironing equipment and tables and drawing tools. The other is on another floor where she keeps all the equipment she needs for laying out fabric for printing. See table 4.16 for a summary of designer #6.

Design background: quilting, dyer, printer	Years practice: 20+
Research location: home studio	
Session length: 2:15 hours	
References to source material: 40	
Tools used: pencil, graph paper, fabric, speedball block, block cutters, quilter's ruler, cotton, seta-silk dye, brayer, canvas fabric, scissors	

Table #4.16: summary of designer #6

Designer #6 displayed the following patterns of behaviour where she:

- Looked at the photos and chose the Madagascan Sunset Moth
- Picked fabric she had dyed from her stash.
- Mapped out a grid for a possible quilt project.
- Decided to use the Paper Kite butterfly and traced directly from the photo to make a template for a block print.
- Transferred the image to a block and cut the block,
- Printed out a pattern using Seta Silk dyes and canvas fabric.
- Tested out various repeat patterns.
- Thought this pattern could translate sometime later onto a silk scarf.
- Ended the session with a printed length of cotton fabric.

The sources used and the visualizations and art created by designer #6 are shown in figure 4.6.

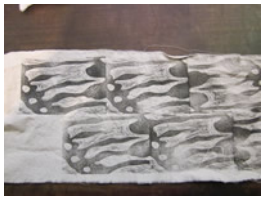
SOURCE	ART/ADAPTATIONS – sketch, block & print	
		
		

Figure 4.6: sources, visualizations and project for designer #6 – quilter

See table 4.17 for the exploration themes that were apparent during the research session.

EXPLORE	
Connection • Past work • pulls out fabrics • translates to block • quilting	**Narrative** Conversation with the project
Emotional • how to make it interesting • gets drawn in • love • intrigued	**Design Elements** • Potential for so many different projects • Lines • Shapes • Negative and positive space • repeat • colour

Table 4.17: references made by designer #6 while exploring the specimens

The design environment for designer #6 is shown in table 4.18.

Des. Env.	Inside	Outside
Local	• Teaches workshops	• Making her daughter a quilt • Likes sun printing
Universal	• Tradition of quilting • frugality with supplies	• Makes banners for the opera • goes to see it first

Table 4.18: design environment for designer #6

4.8 Designer #7: fibre artist

Designer #7 works and lives in Edmonton, Alberta. She is a professed "late bloomer" to design and is currently attending the Faculty of Extension working towards a degree in fine arts. She works with all types of fabrics and explores extreme ways to get texture and shape and form in interesting ways. She will glue and melt and manipulate fabrics to achieve the look and feel of what ever she wants. She also uses photographs, enlarged, as backgrounds to her work. She conducts extensive research on all her projects, but was willing to explore the inspirational sources provided with great interest. See table 4.19 for a summary.

Design background: multi-media,	Years practice: 13+
Research location: home studio	
Session length: 1.40 hours	
References to source material: 60	
Tools used: sketch book, pencil crayons, pencil	

Table #4.19: summary of designer #7

Designer #7 displayed the following patterns of behaviour where she:

- Looked at all the photographs and instantly eliminated the butterflies as being overdone.
- Looked at the beetles exclusively and put the rest of the photos away.
- Methodically examined each beetle and charted in her sketch book all the design elements for each one. These included sketches and note.
- Gathered details for future project ideas.
- Ended the session with a series of sketches.

The sources used and the resulting visualizations for designer #7 are illustrated in figure 4.7.

SOURCE	ART/ADAPTATIONS - sketches	
		
		

Figure 4.7: sources and visualizations for designer #7

See table 4.20 for the exploration themes that were apparent during the research session.

EXPLORE	
Connection • Loves shells • uses metallic fabric • Evoke a sense of visual ideas • Own work • research on internet	**Narrative** • Bug must live in pine park • Water • undersea hero
Emotional • Aesthetic sense • not interested at all with butterflies, shells • Creating emotion, graphically • Interesting	**Design Elements** • Reproducible pattern • texture • sketching with notes, • lines • surface

• Scary • Evocative • pokey, sharp • creation is amazing • playing • resting	• metallic • graphic patterns • light reflection/absorption • pointillism • lighting effects, haloing & highlighting • satin stitch • organic paisley

Table 4.20: references made by designer #7 while exploring the specimens

Table 4.21 shows the design environment for designer #7 divided into four categories.

	Inside	**Outside**
Local	• Uses books for inspiration	Own photos of butterflies, travels a lot has a connection to shells, working on a project with another designer on blue heron, uses tyvek fabric for the bubble effect, collection of fabrics and tools, Her studio and media she uses Showed her previous works
Universal	• Chemshaw – Design matters	• none

Table 4.21: design environment for designer #7

4.9 Designer #8: shibori artist

Designer #8 lives and works in Edmonton, Alberta and practices the textile technique of shibori (better known as tie-dye). She works with black cotton fabrics and after tying or folding or stitching the fabric, she will discharge the black colour from the fabric using a bleach solution. She loves words and exploring social issues through her work. She tries to design every week and often works from her house. This session was held at the textile design studio at the University of Alberta and the designer brought samples of her work and fabric and chalk. She used the sketchbooks and drawing tools provided and walked around the studio to find measuring tools and bowls to trace for her pattern. See table 4.22 for a summary of designer #8.

Design background: discharge, shibori & silk fusion	Years practice: 15+
Research location: surface design studio at University of Alberta	
Session length: 2:14 hours	
References to source material: 21	
Tools used: Sketch book, pencil, black fabric, bowl, chalk, ruler, thread needle	

Table #4.22: summary of designer #8

Designer #8 displayed the following patterns of behaviour where she:

- Referenced the shells and made a couple of sketches.
- Laid out black cotton fabric and drew a grid with chalk.
- Added motifs based on two different shells on to the grid.
- Stitched by hand for half an hour
- Ended the session with a cotton cloth with pattern and some stitching.
- Hoped to take home and bleach out the black dye.

The sources used and the resulting visualizations for designer #7 are illustrated in figure 4.8.

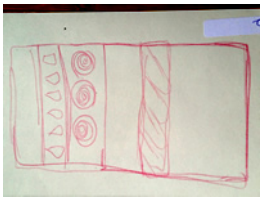
SOURCE	ART/ADAPTATIONS – sketches & artifact	
 		
		

Figure 4.8: sources, sketches and project for designer #8

See table 4.23 for the exploration themes that were apparent during the research session.

EXPLORE	
Connection • Hand of the artist • mark making • issues • translating into stitch and to shibori • her process	**Narrative** • Story to tell? Not sure
Emotional • Immigration • honour killing • discharge representative of removal, • capture the shellness	**Design Elements** • Lines & marks • Stitching • Dyeing • small or large piece • measuring

Table 4.23: references made by designer #8 while exploring the specimens

Table 4.24 shows the design environment for designer #8 divided into four categories.

	Inside	Outside
Local	Tom's collection	• Works with seashells • makes costumes for daughter (dancer) • her weekly work • word games with sister • has home studio • studio at lake property
Universal	Copyright issues	• Explores issues • Immigration • honour killing • uses bleach solution to discharge dyes as process to represent removal

Table 4.24: design environment for designer #8

4.10 Designer #9: fibre artist

Designer #9 lives and works in Edmonton, Alberta. She works out of her house, where she has her sewing machine and tools for creating her projects. Her works are painted canvas that she then stitches over to create landscapes (primarily of Alberta) that are rich with colour and texture. She sells her work at galleries, museum shops and craft and trade fairs. She researches mainly through the Internet and downloads images to use in her work. Currently she is interested in aerial views as backgrounds. See table 4.25 for a summary of designer #9.

Design background: needlepoint, stitcher	Years practice: 20+
Research location: home (kitchen)	
Session length:4:16 hours	
References to source material: 20	
Tools used: sketch paper, pencil, canvas fabric, acrylic paints, sewing machine, scissors, thread	

Table #4.25: summary of designer #9

Designer #9 displayed the following patterns of behaviour where she:

- Looked photos and talked about what they mean to her.
- Chose to use two or three photos at once.
- Started drawing a spiral based on the shell, and added trees and a grain elevator as she likes to do Alberta landscapes.
- She didn't like that idea, so chose four more photos on which to base the project. She created a landscape with the sky the colours of the butterfly wings, the trees based on the conus textile shell. The green bug inspired the green of the trees.

- Painted a small piece of canvas and then stitched to add the trees and ground.
- Ended the session with a relatively finished piece.

The sources used and the resulting visualizations for designer #9 are illustrated in figure 4.9.

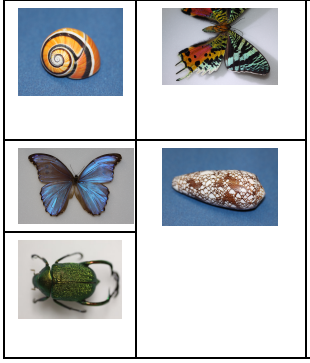
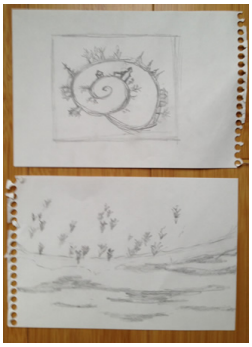
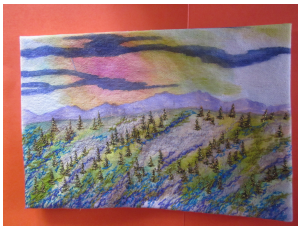
SOURCE	ART/ADAPTATIONS – sketches & artifact
	 

Figure 4.9: sources, visualizations and project for designer #9

See table 4.26 for the exploration themes that were apparent during the research session.

EXPLORE	
Connection • Represent real • landscapes aerial view • pictures • computer-ideas • quilters guild • small canvasses • stitcher • mountains • dark sky • coppery thread (never used 2 threads together) • sunsets-hokey • lets things set for a few days • nature is random • messy background (quilters would not like)	**Narrative** • Native culture • turtle – spiral • native swirly thing, • reflecting on Alberta – prairie landscapes • seasons marking time in different locations
Emotional • Likes abstract, but makes real for selling purposes	**Design Elements** • Colours, shapes, • landscape overtones, • pattern, texture

	• little sketches w/pencil crayons • Fibonacci • erase wonky stuff • acrylic paints, painting • metallic thread • fabric • wash • ground • lines,

Table 4.26: references made by designer #9 while exploring the specimens

Table 4.27 shows the design environment for designer #9 divided into four categories.

	Inside	**Outside**
Local	• other fibre artist works with butterflies • image from up in the air movie • Google earth • taught a class in Ottawa • always had a sewing machine in the house	• Previous landscape work, • banner work • works for money – doesn't do abstract • artist she works with for selling • her process for working • Alberta sky • not a great painting technique (scrubbing),
Universal	• Alberta Gift Show • Alberta Craft Council • Glenbow Museum, other retail venues • Quilters guild and mathematics • slide show for a guild meeting • nature is random • Quilters guild shows • Needlepoint guild	• Facebook presence for her customers

Table 4.27: design environment for designer #9

4.11 Designer #10: felt artist

Designer #10 is a felt artist who lives and works in Edmonton, Alberta. She is also a painter and has experimented with various types of textile techniques. She is a design educator and administrator and she creates felted projects like

bowls, scarves and hats that she then sells at markets. She has a home studio that is equipped with tables for felting and sketching. She has a vast assortment of different types of wool and many other fibres that she incorporates into her work. She makes her own slurry of organic soap to work with the felted fibres. This designer makes copious notes and sketches while she works and is surrounded by paintings and other textile projects. See table 4.28 for a summary for designer #10.

Design background: felt artist	Years design experience: 30+
Research location: home studio	
Session length: 2:10 hours	
References to source material: 22	
Tools used: sketch book, felt pens, merino wool rovings, silk yardage, silk fusion paper, pool noodle, bubble wrap, hot soapy water	

Table #4.28: summary of designer #1

Designer #10 displayed the following patterns of behaviour where she:

- Looked at a number of the photos and chose the brown butterfly.
- Sketched and talked about the layout for a felted scarf.
- Decided between a three-dimensional object like a hat or bowl versus a two-dimensional project like a scarf.
- Chose to make a felted scarf.
- Made decisions about a repeat pattern.
- Laid out all the wool and embellishments.
- Ended the session with an unfelted scarf.
- Later (on her own time) felted the scarf to a finished project.

During the research session, designer #10 created a design for a completed project (see figure 4.10).

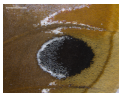
SOURCE	**ART/ADAPTATIONS – sketch & artifact**	
 		

Figure 4.10: source, visualization and project for designer #10

See table 4.29 for a list of the references the designer made during the exploration stage of the research session.

EXPLORE	
Connection • Previous work • makes scarves & hats & bowls • does lots of research on project • works in series • iridescences from silk fibres • weavers guild • ACAD and NSCAD • Feltlines • knitters have hissy fits	**Narrative** • none
Emotional • Felting is meditative • explored health while ill	**Design Elements** • Scarf or 3D object? • Texture • scarf folds • repetition or single motif? • sketch colours • colour blending • depth of colours watery stripes

Table 4.29: references made by designer #10 while exploring the specimens

Table 4.30 shows the design environment for designer #10 divided into four categories.

	Inside	**Outside**
Local	• Took and taught art at university • museum work	• Slow design process • Photography • work she has already done with shells and bugs • paints & fibre work • current work painting sewer works, • loves water – seen in past work • interested in text, fibre • selling of work • painting • materials she works with • started felting with a friend

Universal	• Sells her work at craft fairs, markets, • felting vs. weaving & quilting (no control), • doesn't weigh fibre or keep good notes (other felters would) • Alberta Craft Council – what's a girl to do?, waterworks, • other artists • weavers guild • ACAD	• online felting group Hot Flashes (newest show)

Table 4.30: design environment for designer #10

4.12 Summary: raw data

The data collected for this research is presented as: 1) a short description of the designer and how they work; 2) their pattern of behaviour; 3) visualizations or artifacts that the designers produced; and 4) a table that outlines the references to influences that the designers talked about during the research sessions.

Chapter 5 . Discussion: Towards understanding inspirational sources

5.1 Introduction: understanding inspirational sources and influences in textile design

With the goal towards better understanding inspirational sources, the research herein looks towards ten textile designers' process where they work to create ideas for or an artifact of their choice using the provided inspirational sources of butterflies, beetles and shell specimens. Two central research questions are addressed through the following discussion. The first involves the designer's patterns of behaviour as they use sources of inspiration. The discussion surrounding this question focuses on what was discovered while mapping the rhythm of the design progression of the designers during their design project. Three themes were utilized to help identify how the designers used the sources: 1) looking at how many times they referred to the sources of inspiration throughout the research session (Source); 2) how they explored and examined the inspirational sources, through dialog and expression (Exploration); and 3) what kinds of adaptations occurred during each design project (Art). The second research question looks at the difference between how designers use inspiration and how they use influence. The research herein considers the references that were spoken by the designers during their design project. Using Strickfaden's design environment model it is possible to sort and describe some of the areas of influence for each designer. See figure 5.1 for the structure of the themes that are discussed.

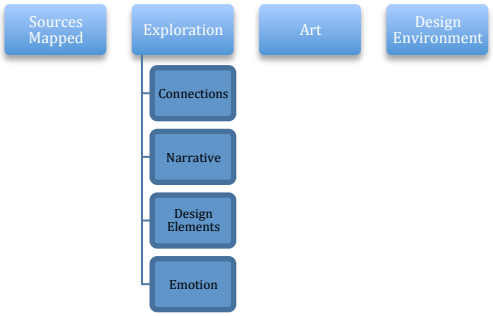


Figure 5.1: Flowchart for discussion

In addition to addressing these research questions, the significant differences between the two groups; those that used the three-dimensional real specimens and those that used the two-dimensional photographs of the specimens is further explored and described.

5.2 Sources Mapped: use of inspirational sources

The first theme for discussion towards understanding how the sources of inspiration were adapted was to map the sources of inspiration (see figure 5.2).

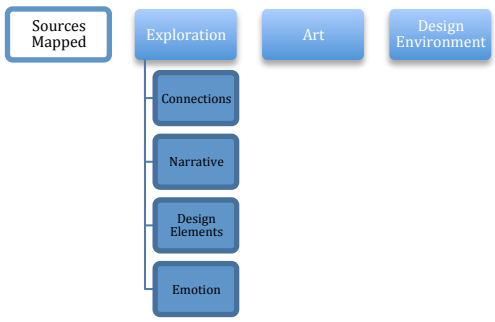


Figure 5.2: Sources mapped

The sources were mapped by tallying the number of times the designers used or made references to the sources of inspiration during their design project. These references were counted when reading through the transcripts and watching the videotapes. For this exercise it didn't matter if or how the designers used the sources, they were simply counted to check how often they were being referenced. It was also noted if the designers quit referencing the sources of inspiration altogether at any point during their design project (see table 5.1).

Actual Specimens				**Photographs of Specimens**			
Designer	**# Ref**	**Duration**	**S hr/min**	**Designer**	**# Ref**	**Duration**	**S hr/min**
1	27	end	2:06	6	40	end	2:15
2	18	end	2:54	7	60	end	1:40
3	12	½	1:48	8	21	3/4	2:14
4	22	end	1:27	9	20	3/4	4:16
5	10	½	2:46	10	22	end	2:10
Total	**89**			**Total**	**163**		

#Ref = number of references, S = session length

Table 5.1: Number of references and duration of sessions

When considering the actual numbers of references to the sources of inspiration, there did not seem to be any correlation between the length of time of that the design project took and the number of references. The least number of references during a project was 10 and the most was 60.

What is noteworthy, however, is that there was a great difference between the number of times the inspirational sources were referred to by the group using the actual specimens and the group using the photographs. In the first group using the specimens there were 89 references made by the designers. Of these, three designers referenced one or more sources right up to the end of their design session. The remaining two of the designers used the sources only up until half way through the design project. Alternatively, the designers who used the photographs referenced the sources 163 times with three designers using them right up to the end and the other two using them up to ¾ of the way through their project. The difference was not how long they referenced the sources, but rather in the markedly higher number of references from the photographed sources. The group that used the photographs referred to them 163 times versus the group who used the specimens referred to them only 89 times. Even if you remove the

highest and lowest numbers, the results are still significantly higher for those using the photographs (79 to 103). The designers using the photographic sources referred to them nearly twice as often as the designers using the actual specimens. This difference was a surprise outcome that has many implications and needs to be studied further.

One explanation of why the sources were utilized or responded to more often by the designers using the photographs could be that they were more convenient to carry around and shuffle through and use during designing. As well, even though the specimens were available to the designers to handle and pick up, some of the designers were not really comfortable doing so. Because the actual specimens were fragile and somewhat intimidating, they seemed to hinder the designer's explorations of the source of inspiration and it also seemed to complicate the design project. Interestingly, there were over two hundred photographs of specimens compared with only nineteen actual specimens. The number of photos could have been intimidating to the designers, but the result was opposite whereby it seemed as though the group that used the photographs had a wider variety of things to look at and consider for their projects. Based on this analysis, it is clear that the designers referred and used the photographs more than the actual specimens.

Another possible explanation to explore is that most textile designers are creating projects or artifacts that are two-dimensional. The nature of textiles is that they are a flat surface. The use of two-dimensional sources of inspiration may then seem appropriate for this reason. However, designers #1, #2 and #10 often create works that are three-dimensional in structure.

Another reason for the difference in use of the sources of inspiration could be that the photographs highlight many design elements in a rather explicit way. That is, basic design fundamentals like colour, texture and contrast became more obvious through the way the specimens were represented and perhaps by the way the photographs were taken. The visual medium of photography is a format that designers are used to using, for example, through books, magazines and on the Internet. In addition, designers are known to take photographs of their own to document the elements of design for further reference.

Therefore the photograph is already a tool of expression (like a sketch or other representation) that designers use in their arsenal to develop and progress, through a project, which means that referring to photographs more often is natural because the important design elements that drew them to it in the first place were already obvious. In addition, interestingly the designers did not often return to the source of inspiration once they have created representations and renderings of their ideas, instead they referred back to their own visualizations, such as sketches and notes, to get further direction towards an end project. This was the case for both groups of designers, those using the actual specimens and those using the photographic representations.

5.3 Exploration: Connections, Narrative, Emotion & Design Elements

Along with mapping the number of references made to the inspirational sources, it is interesting to examine how the designers explored their ideas through dialogue and expression (see figure 5.3).

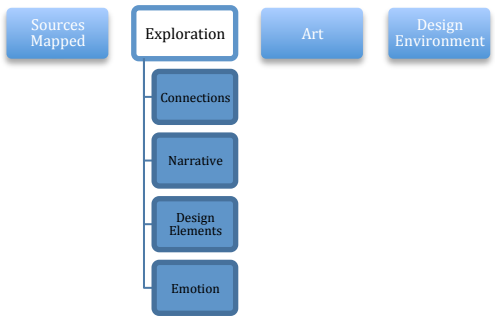


Figure 5.3: Themes for discussion - exploration

The different ways that the designers explored and expressed themselves during their design project was naturally varied dependent on the designer, their personality and how they handled the design project. Even so, four separate themes were apparent upon analysis: 1) connectedness to their previous work; 2) narrative or story to be told or found; 3) the individual designer's emotional reaction/s; and 4) design elements which include the tools and materials they used, the reference to different design elements, and also the design decisions that became apparent during the sessions. These four themes tell us an interesting story about how inspirational sources are valued while designing.

5.3.1 Connections: experiences, tools and ways of working

One key aspect that plays into how inspirational sources are used is through how designers link the new source to a previous experiences and connections (see figure 5.4).

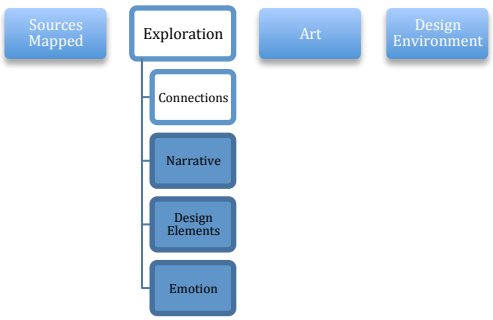


Figure 5.4: Exploration - connections

It was quite apparent with all the designers that they seek to create some meaning or connection with something they already know or care about. Therefore, the sociocultural capital (see chapter 2, section 2.2) of each designer is an obvious and vital aspect to how the designers worked. Although the inspirational sources were new to them and were the catalyst to spark their creativity, the connections the designers made are more about the influences that drive their work. That is, this influence comes directly from what they already know through connections to other parts of their lives. When examining the data generated by the designers a few key themes emerged. The designers often mentioned their own previous design work, objects they own that influence them

(for good or bad) and ways that they tend to work when creating a project. See the list below and table 5.2 for examples of some of these connections. A summary of the main connections are detailed:

- Books were mentioned a number of times and were used for inspiration as well as research on topics of inspiration.
- The designers often referenced how they work and what kinds of materials they like to work with. The source of inspiration made them think of the types of fabrics, tools and styles of work (blind contour drawing, taking photos and entering into Adobe Illustrator) that they are used to. “I was always a stitcher”, “I have a linen addiction”, and “here is my magpie stash of fabrics and shiny bits”. More than one designer began searching for and pulling fabrics after looking at the sources of inspiration.
- Styles they like including 1970’s pottery, Swedish style, landscapes and no landscapes. It is clear that the designers like to zero in on the details of objects and things that reminded them of a feature or element from the inspirational source.
- Exhibitions they saw, entered or are entering that connects to historical work, their personal past and future work.
- Groups they belong to including the weavers guild, quilters guild, needlepoint guild, Alberta Craft council, Alberta College of Art and Design and more.
- Educational outlets that included workshops, teaching, and administration in design environments.
- The designers all mentioned how they like to research including computer (e.g., internet searches, consulting collected imagery), library, taking personal photographs, and sketching/drawing/rendering from a source.
- Many designers claimed that they never work as quickly as they did during the research session. They indicated that they would often work for weeks or months on the same project, letting thoughts and ideas percolate before making significant moves in the design process, often working on more than one project at a time.

Books		

How the designers prefer to work, for example, by looking at and selecting fabrics and tools they like to ordinarily use		

Table 5.2: connections to previous work, objects and ways designers work

Unlike with the number of references to inspirational sources between the two groups there is not a noticeable difference between the two groups when it comes to connections that the designers made with the inspirational sources. The connections that were made fit quite neatly into the four themes and did not have a relationship with what type of inspirational source is used. It is speculated that the reason for this is partially due to the nature of the research project where seemingly random (from the design designers' viewpoint) inspirational sources were provided. That is, the designers had to make sense of the sources of inspiration and the most natural way to do this is through their personal backgrounds and experiences.

5.3.2 Narrative: story telling through textile design

One common aspect among all of the designers during exploration was that each designer spoke about the importance of narrative in their work (see figure 5.5).

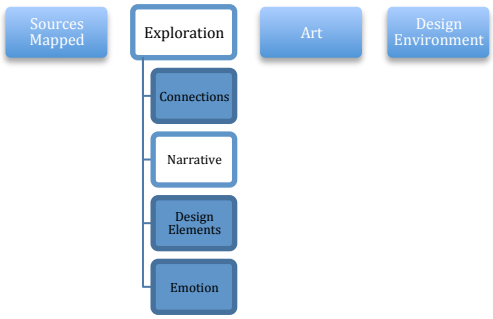


Figure 5.5: Exploration - narrative

The dialog they used when speaking about narrative was quite conversational. They commented on how the source of inspiration either "spoke to" them and suggested they needed to "tell a story". Alternatively, the designers indicated how one or more of the sources could work within the project that would enhance the story they felt needed to be told. The majority of the designers looked for a story to emerge or picked a specimen that helped tell a story.

By involving a source of inspiration in the design process, a relationship between the designer and their methods of work and their materials of choice seems to be sparked. Designer #6 speaks of the need to always have a "conversation with the project" and a need to "revisit the source" to remind oneself of that conversation. After designer #1 had been working with the same

beetle for over an hour suddenly proclaimed that "this is a piece with something to say and it has to be big" see figure 5.6 for a reference to this that she added to her sketchbook.

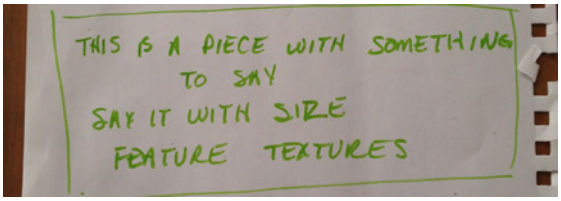


Figure 5.6: Example of narrative exploration

Designer #2 claims that he always does something with text in his projects. He said, that one of his goals in producing textile was to "put the text back into textiles". Interestingly, five of the designers were curious about the camouflage of the different species, "where were they from?" and "what does that say about them? " This curiosity feeds a need for the designers to understand and to relate to the information about the sources of inspiration. Although the designers didn't have any contact with one another, there were many references to native culture, totems, and tribal leanings. These designers indicated that the specimens reminded them of these sorts of things when they looked at the patterns and colours of the sources of inspiration.

Other themes that designers explored were Canadian landscapes. Designer #5 spoke of wanting to represent her move from Quebec to Alberta as pictorial landscapes, (something she had done previously), but also as a personal story of moving her family from one province in Canada to another. Another designer, #9, is drawn to painting and stitching the Alberta landscape. She mentioned that her audience prefers depictions of reality through landscape rather than abstract work, because they can make a connection to a "land" that is familiar to them.

More uniquely, designer #7 went through the process of making up stories about the inspirational sources as she methodically went through and examined each beetle. She said things like "this one must live in Pine Park", "this one reminds me of a super hero who lives under the sea." Consequently, the sources of inspiration become more than just a beetle, a butterfly or a shell. They were instruments for telling stories that are personal to each individual.

In terms of actually narrating the sources of inspiration they were exploring, there were differing viewpoints about whether the adaptation of the source needed to be real or could be abstracted. For instance designer #5 was adamant that the pattern on the butterfly's wing needed to be accurate so that a viewer could identify it. Other designers were not so concerned with accuracy, whereby it was more that the visual aesthetic that was important to the piece. To what extent the inspirational source became part of a specific narrative varied due to how and when the sources were used during designing.

Not all references to narrative in the design process related directly to the sources of inspiration, but it is noteworthy that the majority of the designers have used textile projects to explore different issues that are important and personal to them. Issues such as their personal health can be explored through their work,

where they can express thoughts and feelings when words are not enough. Their projects become a certain type of therapy and aided them in retaining some control over what was happening to them. Others designers explored social issues through their work, such as immigration. It was important to some of the designers that they could communicate, through their work, the story of workers coming to Alberta looking for jobs (designer #5) and the immigration of war brides during World War II (designer #1). Designer #8 uses the technique of discharging dyes from fabric as a way to show removal or the getting rid of parts of things. This process has become a material manifestation of "getting rid of" or of movement that visually conveys the stories of immigration of people from foreign lands and some of the problems they are leaving behind such as honour killing. This kind of narrative is quite interesting since most viewers would never understand the depth of the concept since it is so embedded in material exploration.

Finally, another way that the designers made apparent the importance of narration was their references to the traditions of the crafts that have been passed down to them. The differing textile and fibre art techniques they used, tell stories about the individual designers, which seemed to be important to them. For example, designer #2, who "stitches", embraces the story of embroidery and the needlepoint of India as expressions of culture. Designer #6 talks about how quilting is an "expression of frugality". She indicated that it is important for her to use up all the bits of fabric. These stories of the tradition of craft are an important part of what some designers do to aid in moving forward with projects.

5.3.3 Design Elements: building blocks of design

Design elements are part of the general knowledge related to the design process. They include things such as colour, texture, line, form and shape, to name a few. Therefore, it is natural that design elements are something that creeps into a designer's exploration of inspirational sources (see figure 5.7).

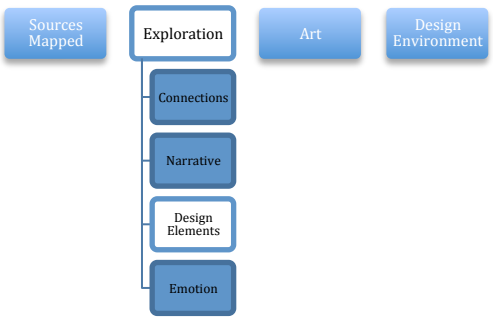


Figure 5.7: Exploration - design elements

The designer's exploration on design elements can be summarized as two fold: 1) the references that the designers make about design elements, such as colour and texture; and 2) the design decisions they make during the design process based on the design elements that interested them in the first place. What they actually did and what they used to make the projects will be discussed in section 5.3 in this chapter on art and adaptation.

The first link to the design elements is how the designers spoke about and referenced them. This kind of dialogue seemed to help the designers to organize their thoughts, to articulate their vision for the project and to focus on what various inspirations offered. The designers said things like; "I could use this fabric, in this colour and melt it" (designer #7) or "I will sketch this out in this colour of pencil crayon and draw out this pattern" (designer #4). By using the elements of design to connect their work to the inspirational sources, it appeared to give the designers a chance to evaluate where they were going with their ideas and decide whether they needed to change the direction they were going, or move on to something completely different. It seemed to be a common tool to express their thoughts. If sketching is a rendering or visualization of an idea, then all the other design elements mentioned by the designers add layer upon layer of detail to aid in moving forward in the design process. For example, if a designer discussed the sheen of the beetle's shell, there was also talk of metallic fabrics or silk fibres that could emulate the colour and quality of the shell. Talk of texture often led designers to picking out fabrics they had on hand and also to using techniques of melting, embossing, stitching, and/or quilting that could be done to achieve a look that would represent the texture of the specimen. Each design element led to thoughts of what to do, how to do it, when to do it and to evaluation where questions like "is it important?" were asked. These thoughts and questions are part of the evaluation phase of the design process, which in this case was instigated by providing unexpected inspirational sources.

During the analysis of how the designers referenced design elements, there were two noteworthy differences between the two groups of designers. One was that the group that used the specimens referred much more often to "form" and "shape" as design elements than the group that used the photographs. Interestingly, three of the designers (#1, #2 and #5) who used the specimens at one point during their sessions mentioned the three-dimensional form of the inspirational source and all of them mentioned the outlined shape of the specimen. Of the group that used the photographs, none of the designers brought up form as a design element and only three (#6, #7 and #9) mentioned shape as an element that they thought was useful for the design of their project. One possible explanation could be is that the shapes of the specimens are very obvious when they are laid out in the specimen boxes (i.e., the specimens contrast with the white background of the display boxes). Whereas the photos were numerous enough but did not have the space around them for each specimen that would supply the same contrast as the actual specimens. In addition, the photographs were easy to move to get in close (even though there was a magnifying glass for the designers to use) for examination of the details of the sources of inspiration. Perhaps it was easier to get lost in the details of the photographs and shape and form got lost in the exploration.

Alternatively, the other difference was that the group that used the photographs mentioned "line" twice as much as the other group. Again, the nature of the photographs and the close up shots highlighted parts of the specimens that translated as the design element of line. Whereas, in order to see line in the actual specimens it required the use of a magnifying glass to really see the detail. Magnifying glasses were available, but not all designers used them.

Another aspect of the design elements was the relationship of individual elements (same or different) to each other and how these got interpreted into design decisions. Some of the design decisions faced were about whether to make the project as one big piece or many smaller pieces to be placed together afterwards (designer #8). Other issues were whether the overall piece should be two-dimensional, like a scarf or wall hanging, or three-dimensional like a soft sculpture (designer #10). When the designers were speaking of a clothing item, such as scarves, they discussed placement of the motifs on the surface and where they would be when a person would wear the finished piece. Some of the designers saw potential for many different projects while others zeroed in on one source and adapted it to fit in one or two projects. Early on in the design process, all the designers were thinking ahead to a vague idea of what the finished project would be and adjusted their design moves to fit the picture they had of that vision. This didn't mean that they didn't allow for spontaneity or serendipity to occur. For instance, there was evidence of a few "aha" moments that ended up taking the project in different direction. What it did allow was for, in some cases, was complete rejection of certain or the majority of sources of inspiration as they focused more and more on the final outcome. This was important to free the designers from distraction of all the other sources to complete the decision-making.

5.3.4 Emotion: attachment to ways of working

Emotion plays a huge role in the design process and particularly when a designer is in exploration mode (see figure 5.8).

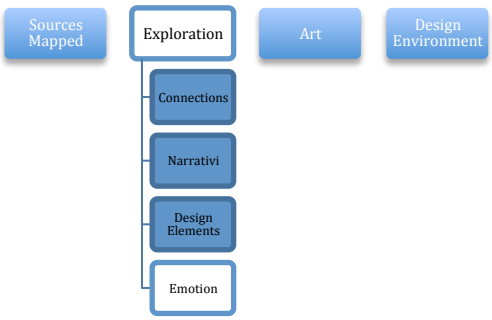


Figure 5.8: Exploration – emotion

Most of the designers create textile and fibre art pieces for the love of their work. Some sell their work and all display and show their work through exhibitions, in galleries, museums or community centres. Each designer indicated a deep emotional connection to their craft including the process of creation. They spoke of being drawn into their work, including the "meditative quality of creation", how to create emotion in their work for others to enjoy and how to spark controversy in the public arena. Whether emotion was implicit to the feelings of the designers when they were creating or explicitly considered for audiences, it was one aspect that was evident during the design process.

The emotional tie to the work manifested itself while the designers worked, and was linked to obvious likes and dislikes for the specimens. Interestingly,

seven of the designers (#1, #2, #3, #5, #6, #8 and #10) immediately rejected certain groups of sources of inspiration. Comments such as “butterflies are overdone”, “I feel a connectedness with the shells” or “bugs are often thought of as scary and ugly, but these are beautiful” are just a few that illustrate the emotional reaction that the designers felt when encountering the specimens. The emotional reaction to the inspirational sources was instant, visceral and often led to the inclusion or exclusion of what the designers continued to look at as possible subjects for their projects.

Another way that emotion was apparent during the design projects is the nature of the session itself. Each designer was asked to work for a time in as natural way as possible, while being watched, photographed, and audio taped. At the same time, the designers were asked to talk about what they were doing throughout the session, which naturally made each designer a bit nervous and tentative. Needless to say, the designers had very little idea of what to expect before they started their session, other than that they had opportunity to work on a project in the presence of a researcher interested in inspirational sources. All of the designers expressed at some point during the session that it was quite an unnatural way of working. Besides the fact that they were being so closely observed, many also indicated they usually spend weeks and months researching ideas, (some even came prepared with their own inspirational sources). In addition, having inspirational sources provided for them was a very unusual scenario for every one of the designers who took part in the study. Designer #8 commented, “I don’t usually design on demand”. But even given the constructed and unnatural environment of the sessions, each designer was able to focus on the task at hand, and invariably the sessions seemed to be very enjoyable and challenging for each designer. Most of the designers made comments about how fun it was to use the specimens, because there was no real pressure for the piece to be exhibited, for it to be made to a certain size specification, or even if it ever had to be finished. Designer #2 made the comments “It’s a kamikaze kind of day” and “It must be the bee’s knees.” Another designer (#6) said “I am enjoying this.” A few of the designers had not worked in their studios for a length of time and were inspired to “get back to it” (#4, #9 and #10).

The emotional connection to the specimens was also obvious in the way they talked about them or by the way they worked with them. “This guy is scary, pokey and evocative” (designer #7), “this is a very feminine shell” (designer #1). “I like to feel what I am drawing. I need to get to the essence of the source of inspiration” (designer #3). “On the surface all is calm, but I add the blackbirds to depict the difficulty of that day” (designer #5). Throughout each sessions it was obvious that an important part of the design process includes some emotional attachment that the designer feels towards the project they are working on.

5.4 Art: adaptations through visualizations and created artifacts

This discussion about art centres on how the designers use inspirational sources during the design process, specifically how they adapt the source towards a completed project or concept of a project (see figure 5.9).

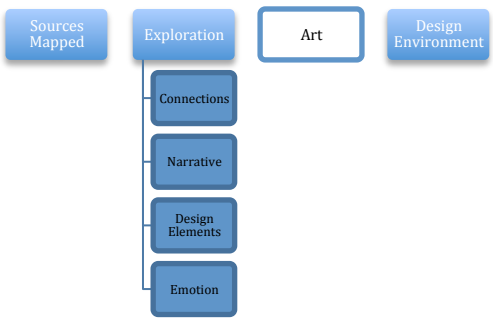


Figure 5.9: Themes for discussion – art

Each designer was asked to use the inspirational sources towards a textile or fibre art project and was told to take it as far as they wished. This could mean creating preliminary representations and visualizations and sometimes further to a more completed project. Table 5.3 illustrates how far in the design process each designer was able to use the inspirational sources in the given time, whether it was a completed project or potential ideas for a project. The first column shows the designer number divided between those who used the specimens and those who used the photographs. The second column displays the number and type of visualizations that were produces by the designers. The third column indicates the types of design adaptations that interested the designers enough to actually leap to another idea, whether it was literally or abstractly. The last column shows what the designer worked towards completing during the session. It could be a finished artifact or a concept for a finished artifact. It is as important to mention the potential projects even if they were not completed, because a source of inspiration is used at all kinds of different stages in the design process towards a completed project.

Specimens			
P	**Visualizations**	**Adaptation(s)**	**Concept or Finished Artifact**
1	3 pages sketches & notes	Texture, pattern, colours, shapes, abstract	3D soft sculpture (concept) (Literal translation)
2	1 page sketches	Pattern, stripes/dots/ shape & form, contrast, colour	Linen wall hanging (artifact) (Association)
3	7 pages sketches, tracings, painting samples	Shape, line, pattern, colour, texture	Block print or screen print on silk (concept) (Conscious Simplification)
4	10 pages sketches	Brush stroke, layout, colour gradation, shape, lines, repeat, balance, border design, polka dots	Silk painted scarf (concept) (Abstraction)
5	1 page sketch, 1 photocopy painted	Black/white, iridescent, pattern, colour, line quality	Hooked rug (concept) (Literal translation)

Photographs			
6	Bundle of fabric, 1 page sketches	Line, shape, negative/positive space, repeat, colour, light/dark	cut block, cotton strip printed (artifact) (Literal translation)
7	7 pages sketches & notes	Pattern, texture, line, surface, metallic, light reflection/absorption, pointillism, lighting, haloing & highlighting, organic paisley	Vertical line design, fish head repeat, shibori motif, wood grain trapunto, abstraction (concepts) (Conscious Simplification, Abstraction)
8	3 pages sketches	Line, marks, dyeing, removing	Shibori stitched black cotton for discharge (artifact) (Conscious simplification)
9	2 pages sketches	Colour, shapes, pattern, texture, ground,	Landscape on cotton, painted and stitched (artifact) (Modification)
10	1 page sketch & notes	Texture, repetition or single motif, colour, stripes	Felted scarf (artifact) (Conscious simplification)

Table 5.3: Adaptations in the design process

What is noteworthy are the differences among the designers. There were no two who worked the same. This speaks to the complexity of engaging in and explaining the design process. The only consistency among them was that each designer took time, initially, to examine the sources of inspiration, whether they were actual specimens or photographs. But the amount of time spent with the specimens differed greatly. All of the designers quickly jumped into their area of expertise and their materials at hand. Some worked very methodically and logically through certain specimens. Others jumped around to whatever struck them as interesting at a given time. Five of the designers (# 1, #2, #3, #4 and #10) picked one specimen only, designer #5 hardly used any specimens, while designer #3 sketched one specimen for a while, then experimented with painting it and one designer (#1) spent a long time examining and exploring many potential ideas from the one specimen. The ways of working were varied and complex.

A significant difference between the two groups is that four of the five designers who used the photographs actually proceeded to making a project that was finished or almost finished. They took it to a point where they chose fabric and other materials and made something. Two of them finished them outside of the session (#8 and #10). Of the group that used the specimens, only one of the five finished or even attempted to start a project. All the rest left off at the visualization stage. This could be explained that when using photographs, the

designer may already be bypassing one of the steps in the decision-making stage in the design process. Many of the designers spoke of how they would take pictures of sources of inspiration and use them to further their decision-making. By having the sources already photographed, it took the designers less time to jump to the next stage in the design process and they were able to move forward towards completing an their project.

Nevertheless, whether the designers finished their project or focused mainly on visualizations, there were few differences in the types of adaptations and transformations to the inspirational sources as outlined by Eckert and Stacey (2003). See Appendix A for a complete list of their descriptions of methods of transformation and adaptation while using inspirational sources. Of the listed methods, five of them were apparent in the research herein. These were: 1) literal adaptation; 2) conscious simplification; 3) abstraction; 4) modification; and 5) association. As explained below, each designer exhibited one of the methods of adaptation. There was no correlation of types of transformations between those using specimens and those using photographs.

Designers #5 (specimens) and #6 (photographs) displayed literal adaptation when working with the specimens. Very little was transformed from the source. One traced a part of the butterfly wing from a photo and the other tried to duplicate it and wanted to accurately portray the pattern of the wing. Interestingly, they both chose the same butterfly for its high contrast and graphic quality.

Three designers, #3 (specimens), #8, and #10 (photographs) made conscious simplification of the sources, they took portions of the wings of butterflies or viewpoints of shells and modified them to create a new pattern. In all cases the designers used the sources as motifs in a repeat pattern.

Designer #1 and #4 (specimens) and designer #7 (photographs) adapted the sources of inspiration through abstraction. They did this by using a certain feature of the source material and changing or discarding other elements of that source to create something else. Designer #4 looked at several specimens, picked the design element that excited her and manipulated it to create pattern that would work with silk painting. These designers often combined elements from more than one source. For example using the shape of butterfly, with the colouring from a shell.

Designer #9 (photographs), combined elements from different sources and created a project that doesn't look like it related to any of the sources. This is conscious modification of the source. The design elements gleaned from the sources of inspiration were: 1) colour of two different butterfly wings to create the sunset; 2) lines from the pattern on the conus textile shell for the linear layout of trees; and 3) iridescent colour from a beetle to make the colour of the trees. This was a complex process and differs from sheer abstraction of inspirational source in that she added extra elements that were not present in the source material.

Designer #2 (specimens) designed in the style of association. The beetles reminded him of tribal art and he used sketches that he had drawn previously and used other elements from his work. While he did use one small marking from one of the beetles in the head, he kept adapting the project to elements that came from his work all along the way. All in all this kind of adaptation is a free association of his influences and he tried to fit the sources of inspiration into that.

5.5 Design Environment: connections to other influences

The second research question encompasses exploring a more holistic view of the design process by considering the role of influence and how it differs from the role of inspiration by looking at the design environment of the designers (see figure 5.10).

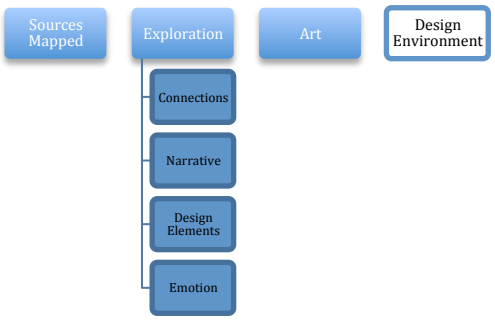


Figure 5.10: Themes for discussion – design environment

As much as inspiration plays a part in the design process, we also acknowledge that the influences of cultural, social and economic capital, including personal experiences, of each designer are also an integral part of the process. The cultural capital that amasses throughout the lifetime of a designer contributes to how that designer thinks and works. The research herein takes into account the references that were spoken by the designers during their design project. Every time a designer would mention something regarding design that was not directly related to the inspiration, it was noted and the references were sorted and inserted into Strickfaden's design environment model (see Chapter 2, figure 2.4).

Through analysis it is possible to define and describe some of the areas of influence for each designer. The data that was charted into this model gives us a snapshot of the experiences and influences of the designers involved in this study. The data is classified into four themes that take into account both local and universal realms of influence and further breaks those down into inside or personal experiences and studio culture.

The first quadrant (inside-local) of the design environment is the educational ideology or studio culture. This includes the schools the designers attended and teachers that they had during the course of their education. Not surprisingly, most of the designers do have some design education, though not all of them do. Many of them teach workshops and two teach in design institutions. Many of them mentioned influential instructors or teachers that made an impact in the work they do today even though they weren't asked directly about this. While sketching from a live specimen, designer #3 made the comment that one of her instructors always stressed the importance of sketching from real life to get the "essence" of the source of inspiration. Other influential people that influenced the designers were other designers, even though all of the designers work individually and not in design groups. Many still seek out learning opportunities and cherish any occasion to share and acquire new skills.

The second quadrant (outside-local) in the design environment model encompasses the personal or individual perspective. This occurs when the designer draws on past experiences and ways of work to move forward in their design projects. The most interesting premise that resulted was that each of these designers have design because they love the process. Also other indications of personal or idiosyncratic experiences include how they work, with designer #1 explaining how she may be "right-brained in creativity, but works very left-brained" and very logical when designing. Designer #7 talked about "working slow and working small". Hobbies play a big part in what they design, not necessarily how they design, with nature being mentioned very often as a common source of inspiration. Not surprisingly, the balance of family, employment and design work is an issue that all struggle with, but somehow, they all find time to do what they love. Most have carved out personal spaces where they set up design studios and this lends itself to allowing work to be picked up and worked on easily, without having to put every thing away each time they design.

The third quadrant (inside-universal) of the model deals with the design culture of the professional community. The designers talked about many of the ways they show their work in the design community. These include exhibitions, museum openings, gallery showings and retail shops. To a great extent, a lot of the work they do is influenced in where they will be showing or selling their work. Designer #9 only creates works that are very realistic instead of abstract (which she prefers) because they sell better. Designer #1 enters many exhibitions and so her work is dictated by the guidelines of each show. Another thing that was mentioned by over half of the designers is the importance of obtaining grants and scholarships from local, national and international sources to help both financially and publicity. In this quadrant of model, it also lists how many of them rely on books as sources of influence. They use books or pamphlets from museums and art galleries, design books and books on nature. Many of the designers belong to other design groups such as the weaver's guild; quilter's guild, Fibre Art Network and these groups do have influence on how the designers work.

The fourth quadrant (outside-universal) involves the sociocultural aspects and incorporates the influence of common cultural currency not necessarily only design culture. The designers spoke of how they build on traditions of craft, folklore and design styles of the past to enhance and explain their design work. They use their work to explore social issues such as immigration, migration and honour killing. Another theme that was apparent is the trend towards using social media such as Facebook, or personal websites to share information about their work and advertise upcoming exhibitions, shows and sales. Embracing technology was important to many of the designers when they work on their own projects. Due to the lack of time and the focus of the research sessions, very little was done with computer programs or social media as ways of disseminating information or creating projects.

5.6 Summary: discussion of inspirational sources and influences

This chapter highlights parts of the thought processes of ten designers including the steps that they make during the design process. By identifying

certain themes and commonalities among the designers' actions and conversations, it is possible to form ideas regarding how designers adapt inspirational sources and to see how experiences and past work will influence the work they do. To begin with the sources were mapped to get a quantitative look at how often the sources were referenced. There were more references made by the group who used the photographs as sources of information. This could be attributed to the ease of carrying them around, whereas the specimens were perceived to be fragile and thus became a little trickier to work with and some of the designers didn't want to touch them.

Next the theme of exploration of the sources of inspiration was considered. How the designers adapted and used the sources was examined and analyzed. This was divided into four themes: 1) connections; 2) narrative; 3) design elements; and 4) emotion. It was apparent that all the designers make connections to their past work and design experiences when they design. They acknowledge this through the mention of books, education, research styles and design guilds or groups they belong to. The same is true for narration. To tell a story or derive a story from the source of inspiration was important for the designers. It gives context to their projects and helps them make decisions about what steps to take when they design. The use of design elements also aids the designer to move forward in the design process. Talk of colour, texture or shape give structure and detail to ideas of what to create. There were a couple of differences between the two groups of designers that became apparent. The group that used the specimens commented more on shape or form of the sources. The group that used the photographs mentioned line as a design element more than the other group. It is the nature of the photographs that they highlight detail more because of the close up shots and this possibly would lead them to notice line more. Last of all, while looking at exploration it was obvious that emotion plays a large role in the design process and how they adapted the inspirational sources. The designers talked of instant attraction or rejection of certain specimens as well as how they like to explore social or health themes in their work. Connections to traditional craft practices or how they are feeling that day all have an impact on how and what they will create.

The next theme that was identified is that of art and representation and adaptation, how the designers adapted the sources of inspiration through visualizations and how some went on to create projects. It was noted that the group that used the photographs created a more finished project than the group that used the real specimens. One possible explanation could be that the photograph is a secondary source of research (already a visualization or representation) and this left more time for the designers to move to the creation of their project. Using the list of adaptation styles developed by Eckert and Stacey (2003) the adaptations done by each designer was examined and explained.

To study how past experiences influence designers, the design environment model was used to sort the designer's experiences and references into the four different quadrants. In summary, what is apparent is that no designer works without a myriad of influences to guide them in their endeavours. Whereas inspirational sources will change from project to project, influences will always follow them.

Chapter 6 . Conclusion & Future Research

6.1 Introduction: conclusion towards inspirational sources and influences

This research explores inspiration and influence with the designers using butterflies, beetles and shells (real and represented) to explore questions around how inspirational sources and influences are used during the design process. The research questions and subsequent research set-up were established to engage with practicing designers during the creation of a project of their choice. By providing inspirational sources and following how designers engage in their work using these sources, it was possible to view and experience the details of the design process as they unfold.

Our ten designers shared in how they typically create projects, albeit in a compressed way that was much quicker than they were used to, while using materials that are unfamiliar to them. The designer designers each engaged in processes that were idiosyncratic yet also fit with current knowledge on how designers engage in designing. That is, they went through the early stages of the generic design process (see figure 2.3 in chapter 2) as expected, while at the same time used the inspirational sources in unexpected ways. The ways that the designer designers used inspirational sources was individualistic (some used one source, others used many and all used them at the different points during the design process) and the degree to which the inspirational sources were imbedded in their final projects also varied (some were explicitly present and others were part of the process and not very apparent in the final project). The most surprising results were in how group one (using actual specimens) and group two (using photographs of specimens) used the sources. It was assumed that the designers with the real specimens would engage more deeply with the sources, but in fact it was the designers with the representations that seemed to use the sources more readily. One explanation for this is that textile designers are more accustomed to using imagery (representations) than using actual objects, particularly for designers (like textile or fibre artists) who work in two-dimensional mediums. When it comes to influence, it is clear that designers rely heavily on their personal backgrounds and interests when creating design work. In the case of textile or fibre artists, they bring materials to their projects in the form of narratives (often personal) that drive the directions they will take their projects. It is clear that the designers in this study work like artists who express their inner feelings, rather than designers who are creating primarily for users or audiences. Even so, some important insights were discovered into how inspirational sources and influence are a significant part of the design process, which leads to further questions.

6.2 Fields: material culture and human ecology

This study was carried out through the perspectives of material culture and human ecology. In addition, it crosses into design studies because the majority of literature available on the design process and inspirational sources has been reported within this domain. The literature review revealed gaps in information that lead towards a need to further investigate issues relative to inspiration and influence, particularly with fibre art and textile designers. Where design studies have looked at the mechanics of designing through the design process, the

individual idiosyncratic background or cultural capital of the designer is largely missing from this research. Therefore, by looking at the design process as a system that involves 'material production' and 'cultural production' this research approaches designing in a slightly different way. It looks at the individualistic aspects of designing while considering the commonalities (cultural values) of designing. In addition, human ecology brings a more holistic perspective on designing that is not common among scholarly research. That is, human ecology considers the interconnected nature of people to their surroundings in general and looks at the near environment of textiles specifically. These perspectives were the lenses that were used towards understanding how fibre art and textile designers use inspirational sources and are influenced by their individual sociocultural situations.

6.3 Research Questions: responses

The research questions presented in this thesis naturally led to the research setup, consequent design sessions, and resulting projects created by the fibre art and textile designers. The first main research question asked was "how are inspirational sources adapted towards textile design?" and the second question was "what role does influence play in the design process?" To answer these questions an ethnographic, qualitative research design with ten experienced fibre art and textile designers created projects in their studios, which is the natural environment, they normally would work. They participated in using inspirational sources; half were given three-dimensional specimens of butterflies, beetles and shells and the other half were given two-dimensional photographs of those same specimens. The resulting data was rich and diverse providing ample materials to respond to the research questions. Upon analyzing the data, themes were identified and some answers to the research questions began to come to light. When looking at how the sources were used or adapted we discovered that: 1) of the number of times the sources were referenced; 2) how often the sources were used; 3) when in the design process the sources were adapted; 4) connections to past work and experiences; 5) the role of narration in design process; 6) the references and use of design elements; 7) emotional reaction to the sources; and 8) what kind of adaptation took place in the form of visualizations and/or completed project.

When looking at our question on the role of influence in design process, we discovered many references through the idiosyncratic personal experiences of each designer. These were explored by sorting the references into different categories as outlined in the design environment model developed by Strickfaden. This was a means to highlighting influence in terms of specific connections the designers named and organized them into categories that ranged from very personal experiences and other broad based community (or cultural) influences. Through our study it was revealed that inspiration is adapted in many ways and when we are considering the actual transformations that occurred, there was very little difference in whether the designers had the three-dimensional specimens or the two-dimensional photographs as the sources of inspiration. There were, however three differences between the groups that are of interest. First, the most significant difference that was discovered was that the groups who used the

photographs referenced and used the sources of inspiration almost twice as often as the group who used the actual specimens. Second, another key difference was that only one of the group who used the specimens actually created an artifact while the others ended their sessions with renderings and visualizations that could be used later towards a finished project. Alternatively, of the group that used the photographs, four out of five of them went on to complete a textile project either in the session or it was finished at a later date. Third, the group who used the actual specimens mentioned the design elements of "shape" and "form" more often and the group who used the photographs mentioned "line" more often. One of the key findings of this work on the design process is to aid in differentiating between inspiration and influence and the role that each of them play in designing.

Though it was not intentional, the research herein validates the studies of Eckert and Stacey (2003) by finding similar results of how the inspirational sources were adapted in the textile design process and how the designers worked on their artifacts. It provided the framework for analyzing the visual representations and artifacts and interpreting how they were adapted and transformed from the inspirational sources. Overall, we gained some important information as a result of our study, which leads to significant findings for the fields of material culture and design studies, while also presenting some new questions about inspirational sources and influence.

6.4 Impact: benefits of understanding design process

As noted, this work has the potential to impact the fields of material culture and design studies. To begin, scholarly information about the design process and particularly production processes, are scarce especially about designers such as textile and fibre artists. The information gained through the research herein may be used in the practice of design and in design education. First, an understanding of design process and production processes allows reflection within designers, which has the potential to aid designers in their personal work or assist companies by enhancing the design process. For example, when more is known about the design process, companies may wish to provide support towards actively encouraging their employees to work with inspirational sources more consciously. Second, understanding the design process of designers is a move towards broadening information about different kinds of designers. Historically there have been many areas of design, however, with industrialization, some of these have been emphasized more than others (e.g., architectural, graphic, industrial), which has led to more research being done in these areas. Therefore, research on textile design is a significant step towards enhancing this field of study. Third, by understanding design process the research herein has the potential to impact design education in the future. Many designers are taught design in schools (i.e., high school, college, university) and the more information there is about designing the more teachers have the opportunity to enhance teaching. In the case of our project, having an understanding about inspirational sources and influence provides opportunities and challenges for design teachers to consider alternate ways of teaching design.

The research herein suggests that the designers used the photographs more than the real specimens and this has implications for curators of collections. This knowledge informs that instead of trying to think of ways to get the public to visit collections, it would be beneficial to have images available in print or online form to reach a wider audience. Also, this information supports the concept that an image database for natural patterns would be an important tool for designing as references for sources of inspiration to be used for pedagogical purposes as well as for designers in their endeavors.

6.5 Future Research: towards understanding inspirational sources and influences

The research herein looked at ten experienced textile and fibre art designers and came to some conclusions about how they adapted inspirational source and what the role of influence plays in the design process. Every research project is the end and beginning of something and the work herein is subject to this as well. Therefore, along with providing some insights into inspirational sources and influence there are new questions and room for future research. There is still a need for more research into these topics and future study in this area could include:

- Building on the research herein surrounding the theme of "real versus representation" as inspirational sources by conducting a study with a larger sample size to see if the results are similar to this one. It has significant implications in how inspirational sources are accessed and used (whether actual three-dimensional or two-dimensional sources are needed for successful outcomes in textile design).
- Setting up research to study designers who are less experienced than the ones in this study. This research could explore further the role of influence in design process. By looking at designers with little experience, how confident are they in moving forward in the design process? As well, do they adapt the sources of inspiration differently than the more experienced designers?
- Conducting research sessions where the designers are given the time to complete projects. Possibly this could involve more than one session for each designer. The further a designer gets in the design process, there is often more adaptations that occur to the original source.
- Study more than one designer at a time. Designers often work in groups and it would be interesting to see if adaptations of inspirational sources differ when there are several opinions at work. This could also shed more light on the role of influence in design process, as it would be complicated because you are dealing with many people's experiences.

The need for this research underlines the importance of understanding how designers work and think through all aspects of the design process.

6.6 Summary

Throughout the duration of the research herein, the main focus has been to try to understand the role of inspirational sources and influences that designers use when they design. To study design process through the perspectives of material culture and human ecology adds a depth to the exploration of the topic by introducing a more holistic, interdisciplinary and complete lens to frame the research design and carry out the study.

The research questions that were identified early in the research setup helped to guide the research towards a more focused plan for data collection and analysis. The resulting answers that were discovered aid in formulating concepts and theories to add to the existing knowledge about design process and more specifically, textile design process. Further, this research also shed light into the difference between inspiration and influence and how designers have a need for both to facilitate create during design projects.

The research herein has the potential to impact a wide assortment of people including scholars, educators, manufacturers, student and more importantly, designers in all disciplines. Any knowledge that adds to further understanding the design process can only assist designers by making them aware of how and possibly why they work and think the way they do.

This thesis set forth to answer questions about design process and by doing so, we also raised a number of research studies that could be considered for future in this area of study. Only by continuing to conduct research can we educate people and generate interest into the every growing study of design and designers.

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APPENDIX A

Inspirational Sources - Transformation & Adaptation as Identified by Eckert & Stacey

Transformation & adaptation is achieving the closest possible likeness to free association of ideas.

1. **Literal Adaptation** – occurs when the outcome is as close as possible to the source of inspiration in appearance.
2. **Conscious Simplification** – is selecting parts of source or discarding parts of the source.
3. **Abstraction** – happens when designers capture some essential properties of a relatively complex source while eliminating or changing others to create a relatively simple design element. The essentials properties might be basic proportions, geometric shapes, colour schemes, or visual emergent properties such as overall busyness or complexity. The object might be to retain the cultural meaning of the source.
4. **Modifications to Source** – when designers introduce changes when transforming a source. Might change details within overall form copied from the source. May regroup elements derived from the source. May amalgamate design elements from different sources (when they have several good sources or are planning to create very complex designs.
   It is difficult to distinguish modification from abstraction and simplification: use the criterion that the adaptation should add features beyond what is required for any degree of simplification.
5. **Association** – reminds the designer of another object or another design they have seen. May draw and object or design element that is visually similar to the source, though not derived directly from it. May use the source to define a topic and create another design fitting into that topic, drawing on memory and imagination or another source of inspiration. Designers often exploit associations within the context of the source. They also sometimes develop design elements by evolution away from the original source where an initial adaptation inspires a further transformation.
6. **Deviation** – this is when the designer makes some move completely away from the source. Take ideas from the environment they are designing in. (coincidental inspirations). Draw on ideas that they already have in mind related or not related to the source.

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APPENDIX B

Invitation to Participate

An Invitation to Textile Designers and Fibre Artists

Are you interested in textile design or consider yourself a fibre artist?

Designers are needed for a research project at the University of Alberta that investigates the use of inspirational sources by experienced designers and the design process while creating a textile or textile pattern. The primary aim of this project is to shed some light on the design process in order to better understand the use of inspirational sources and the importance of them during that process.

This research involves two parts: interviews and observation of you while you design. The duration of observation will be negotiated in advance, but will involve one or more instances of you creating a textile pattern. Both the interview and observation will be completed with as little disruption to your work as possible. The research investigators all have backgrounds in design education and practice, therefore are fully aware of time constraints. Precision and accuracy in data collection is important to us therefore video/audio equipment will be used along with occasional photo documentation and note taking.

The projected time you would be asked to commit to is approximately 1½ hours to 3 hours. The study will be carried out in a design studio at the University of Alberta or in a location that suits your needs. Designers can work alone or in groups.

If you are interested in participating in this exciting project or would like more information, please contact me:

lesleys@ualberta.ca

Lesley Stafiniak (MA candidate)
Clothing & Textiles
Department of Human Ecology
University of Alberta

APPENDIX C

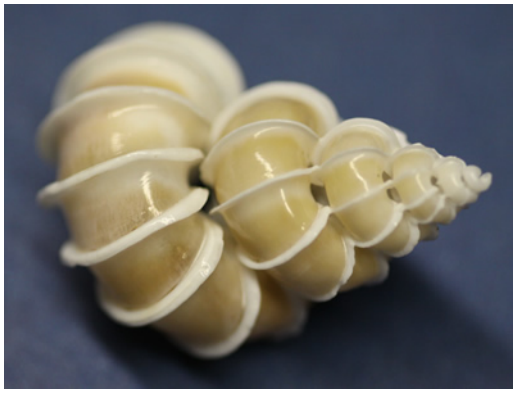
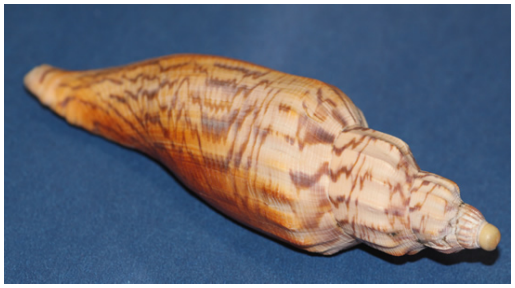
Supplementary Information on Specimens

	Dubernard's Luna Moth/Chinese Moon (Luna) Moth (adult male?) Family: Saturniidae Name: *Actias dubernardi* → found in China, larvae feed on pine trees
	The Paper Kite Family: Nymphalidae Name: *Idea leuconoe* → found in Southeast Asia, feed on *Parsonia* species, a type of dogbane.
	The Morpho/Blue Morpho Family: Nymphalidae Name: The genus is definitely *Morpho* Species. Hard to say since the pictures aren't super clear but: *M. didius, M. amathonte, or M. anaxibia* → Mexico, Central and South America, feed on a variety of leafy plants Morpho is an epithet of Aphrodite and Venus

	Pale/Pallid Swallowtail Family: Papilionidae Name: *Papilio eurymedon* → Northwestern USA, into parts of southern British Columbia. Participate in "puddling parties", where the butterflies feed together on wet soil, but sometimes even human sweat, or tears! They do this to gather salts and amino acids.
	Madagascan Sunset Moth Family: Uraniidae Name: *Chrysiridia rhipheus* → From Madagascar, are the only herbivores that feed on the *Omphalea* plants in Madagascar. The larvae (caterpillars) sequester the alkaloid toxins produced by the plant, and retain it in the pupal and adult life stages. This deters predators.
	Family: Saturniidae

	Harlequin Beetle (male) Family: Cerambycidae Name: *Acrocinus longimanus* → Central & South America, adults feed on tree sap. Longimanus describes the extremely long forelegs of male individuals. Tiny arachnids called pseudoscorpions like to hitch rides on the beetle, hiding beneath the elytra (hardened outer wings), and get off once at a suitable food source.
	(a type of Metallic Wood-boring Beetle) Family: Buprestidae Name: *Chrysochroa toulgoeti*
	Red Speckled Jewel Beetle (a type of Metallic Wood-boring Beetle) Family: Buprestidae Name: *Chrysochroa buqueti*

	Ceiba Borer Beetle Family: Buprestidae Name: *Euchroma gigantea* Largest member of the family Bupestidae
	Darwin's Stag Beetle Family: Lucanidae Name: *Chiasognathus granti* → Chile. Adults feed on sap, larvae feed on decaying wood
	Shining Leaf Chafer Family: Scarabaeidae Subfamily: Rutelinae Name: *Chrysophora chrysochlora* → Peru. Adults feed on foliage and fruit, larvae feed on roots and decaying vegatation.

	Cloth of Gold Cone Snail Family: Conidae Name: *Conus textile* → Venomous predatory sea snail! Super badass. Conotoxins considered dangerous to humans.
	Rock Snail Family: Muricidae Name: *Chicoreus sp* Predatory sea snails! There are a TON of these guys. I think it's most likely *Chicoreus nobilis,* but it could also be *Chicoreus cosmani*.*C. nobilis* is from Vietnam/Philippines/Japan *C. cosmani* is from the West Indies
	Precious Wentletrap Family: Epitoniidae Name: *Epitonium scalare* Predatory/ectoparasitic sea snail. Live in seas along Madagascar, South Africa, Fiji, & Japan
	Family: Volutidae Name: *Fulgoraria hamillei* Type of predatory sea snail.

	Rock Snail Family: Muricidae Name: *Murex sp.* → Tropical predatory sea snail. Couldn't find a species for this one, sorry ☹
	Family: Pectinidae Name: *Pecten sp.* Large sea scallops (clams). Also couldn't ID this one to species ☹
	Cuban Land Snail Family: Helminthoglyptidae Name: *Polymita picta* → Cuba. Use love darts in mating. See wikipedia for details! http://en.wikipedia.org/wiki/Love_darts

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APPENDIX D

HOW INSPIRATIONAL SOURCES ARE ADAPTED TOWARDS TEXTILE SURFACE DESIGNS

Information sheet

Consent to participate in this research project
This consent form is part of the process of informed consent. This will provide you with background on the purpose of this study, what will be involved in your participation and how this research project relates to you. If you would like more information about something mentioned here or information not included here, feel free to ask or contact the individuals listed on this form. Please take the time to read this carefully and to understand all accompanying information.

Researcher
Lesley Stafiniak Department of Human Ecology

lesleys@ualberta.ca

1. Purpose
Design issues are explored in this study on textile designers. This study investigates the use of inspirational sources by seasoned designers and the design process while creating a textile pattern. You have been contacted personally by one of the researchers because you are a designer with experience who is familiar with the creation of textile patterns.

The primary aim of this project is to shed some light on the design process in order to better understand the use of inspirational sources and the importance of them during that process.

2. Your participation
This research involves two parts: interviews and observation of you while you design. The interview component will take place in an environment that is comfortable for you (*e.g.*, design studio, office, home, coffee shop). That is, you will choose the location and the investigator will meet with you in that place. It is anticipated that the interview will last approximately two hours. The observational component will occur in our design studio. The duration of observation will be negotiated in advance, but will involve one or more instances of you creating a textile pattern. Both the interview and observation will be completed with as little disruption to your work as possible. The research investigators all have backgrounds in design education and practice, therefore are fully aware of time constraints. If at any time, you feel compromised, it is expected that this will be communicated directly to the investigator who is conducting the research with you. Your participation in this research does not have any future implications.

Using more than one different research methods allows for a more holistic view of your design process within context. Precision and accuracy in data collection is important to us

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therefore video/audio will be used along with occasional photo documentation and note taking.

3. Procedure

The procedure is as follows:

1. Introduction to the research project;
2. Informal interview;
3. Observation (optional);
4. Summary and wrap up.

Your participation consists of answering interview questions and allowing the investigator to observe you at work in the design studio. The interview does not involve any confidential information regarding your household; however, some personal details are required about your background. All the information gathered will be handled in the strictest confidence. The results of each interview and time spent in observation will not be shared at any time among the participants or with your colleagues/superiors. Furthermore, you may withdraw at any time from participating in this research project in which case any data pertaining to you would be destroyed immediately.

4. Your responses

Your interview materials will be gathered together collectively with other participants in this study and treated as grouped information. This information will then be analyzed and separated to relate to individual themes and issues that have emerged. The results of the analyses will be used towards verbal presentations and publications. There will be no links between your responses and you as a participant. You will be consulted individually in the instance that identifying video footage, photographs or quotations are required as detailed examples. These will be used only when permission is given. In all other instances, all participants will be collectively given credit for participation in this research project without being named.

Completed documentation will be kept secure in the office of the faculty advisor of the investigator in the Human Ecology Building as described:

1. Personal and identifiable information: No copies will be made. These will be placed in envelopes and in a locked cabinet.
2. Audio recordings, Video Tapes & Still Photographs: No copies will be made. These will be kept in a locked cabinet or password protected computer file.

As required by ethics procedures raw data will remain in a locked cabinet for five years following the completion of the research project (April 2012+5). Following this period, the raw material will be destroyed.

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APPENDIX E

EXPLORE HOW INSPIRATIONAL SOURCES ARE ADAPTED TOWARDS TEXTILE SURFACE DESIGNS

CONSENT FORM

Researcher
Lesley Stafiniak Department of Human Ecology lesleys@ualberta.ca

Consent form
Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor releases the investigators, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation. If you have further questions concerning matters related to this research, please contact either investigator.

Do you understand that you have been asked to be in a research study?	Yes	No
Have you read and received a copy of the attached Information Sheet?	Yes	No
Have you had an opportunity to ask questions and discuss this study?	Yes	No
Do you understand that you are free to refuse to participate, or to withdraw from the study at any time without any disadvantage to yourself?	Yes	No
Has the issue of confidentiality been explained to you?	Yes	No
Do you understand who will have access to your information?	Yes	No
I grant permission to use video footage, photographs and/or quotations in verbal presentations and publications when they are required as long as there are no links between me as a participant and my responses.	Yes	No

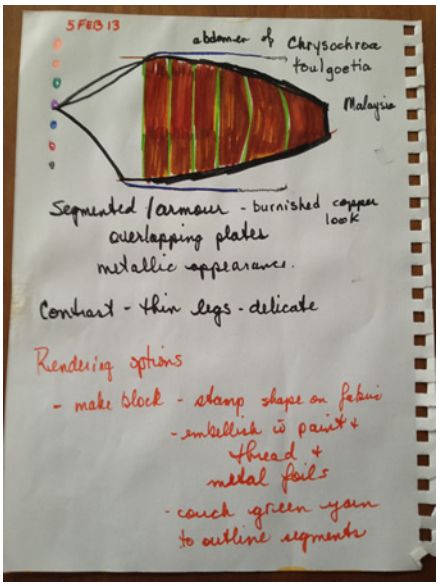
I agree to take part in this study.

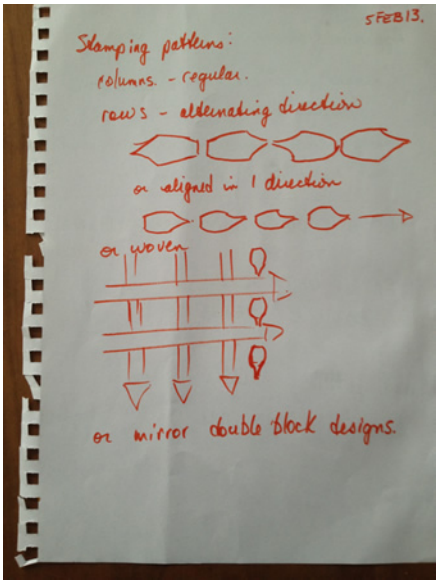
_____ _____
Signature of Research Participant Date

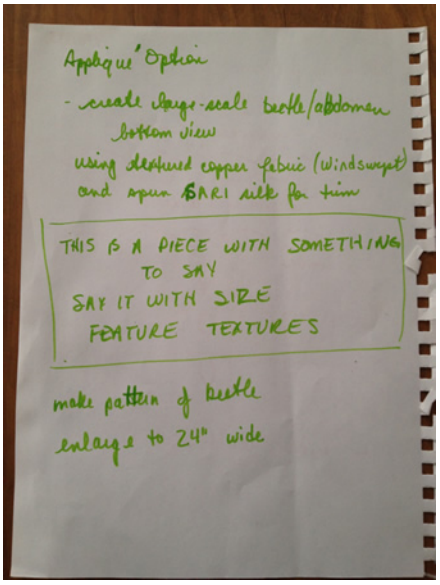
APPENDIX F

Enlarged Photographs of Data Collected

Designer #1







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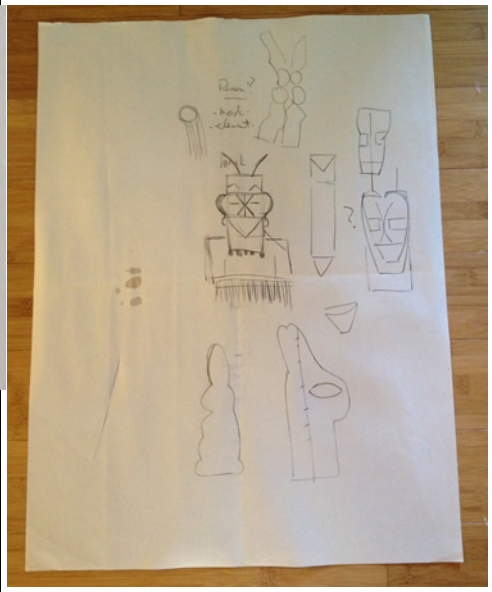
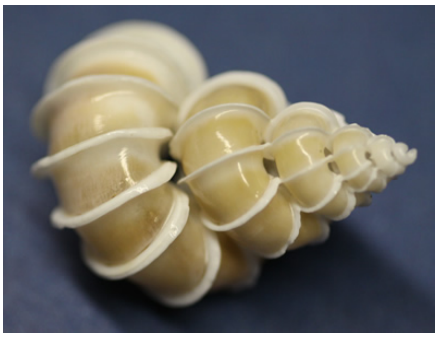
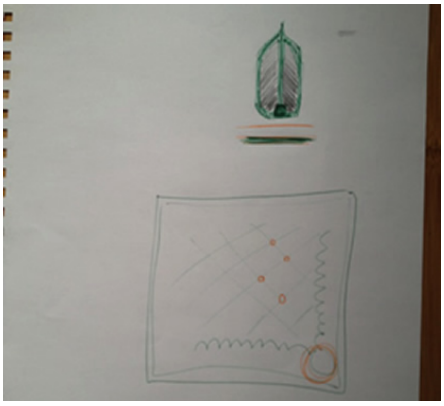
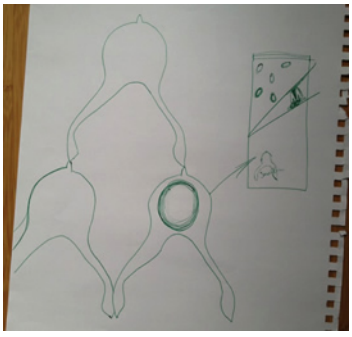


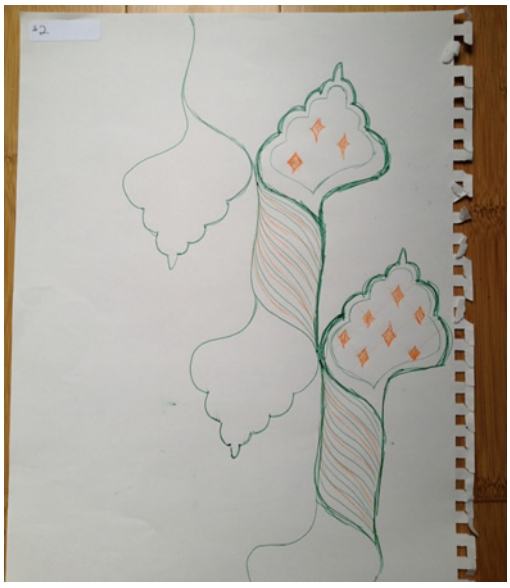
Designer #3

Designer #4



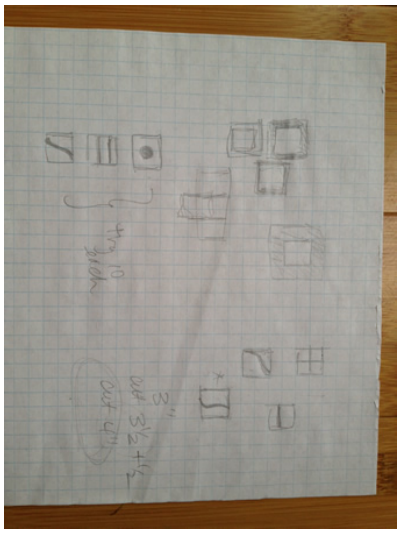


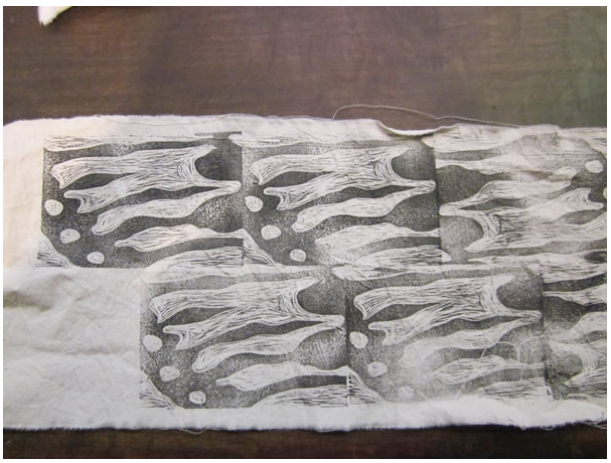




Designer #5

Designer #6





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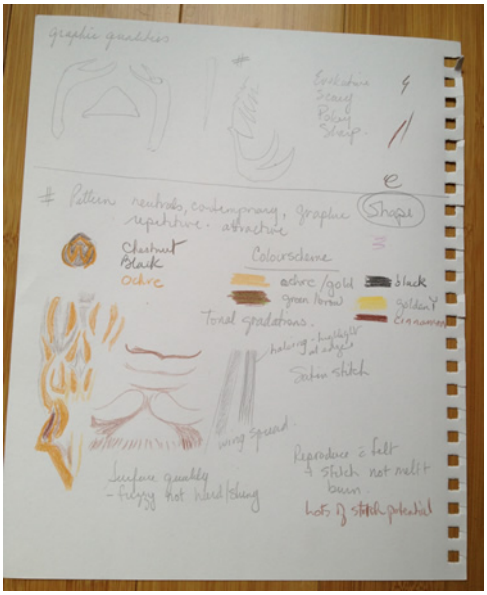
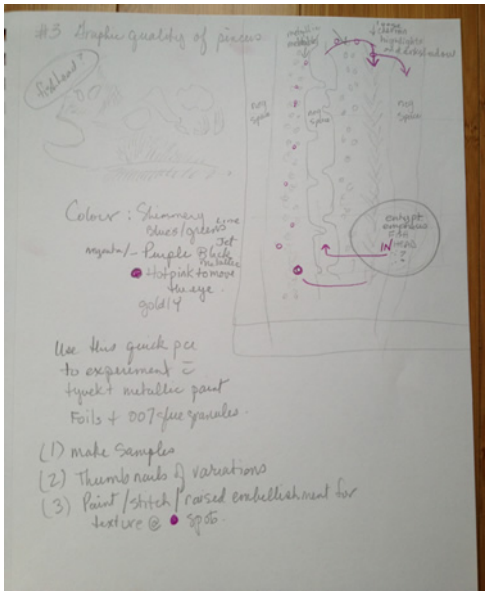
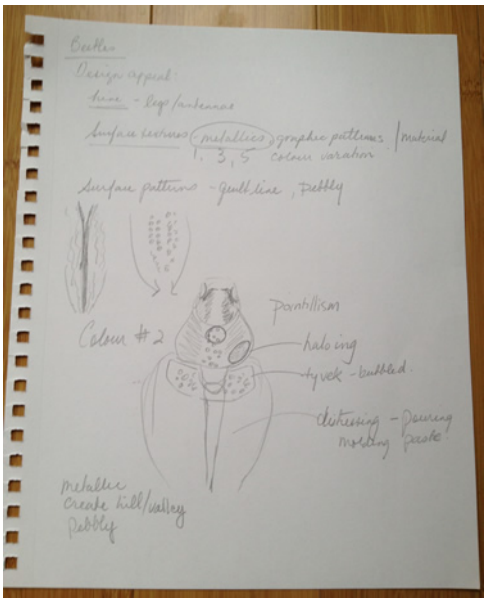
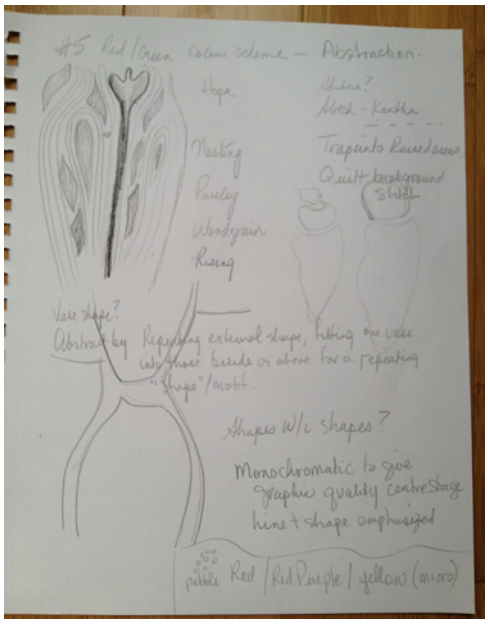
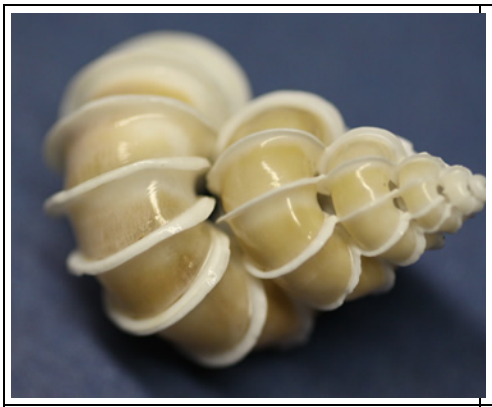

graphic qualities
Evolutionary
Scary
Pokey
Sharp
Shape
Pattern neutrals, contemporary, graphic
repetitive, attractive
Chestnut
Black
Ochre
Colourscheme
ochre/gold
black
green/coral
golden
cinnamon
Tonal gradations
Satin stitch
wing spread
Reproduce & felt
& stitch not melt
burn
Surface quality
- fuzzy not hard/shiny
Lots of stitch potential

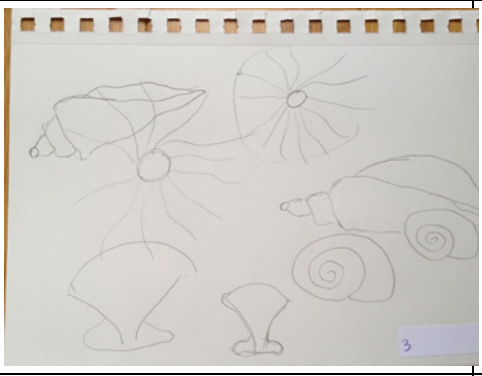

#3 Graphic quality of pieces
Use this quick pic
to experiment &
tyvek/ metallic paint
Foils + 007 fine granules
(1) make samples
(2) Thumb nails & variations
(3) Paint/stitch/raised embellishment for
texture @ spots

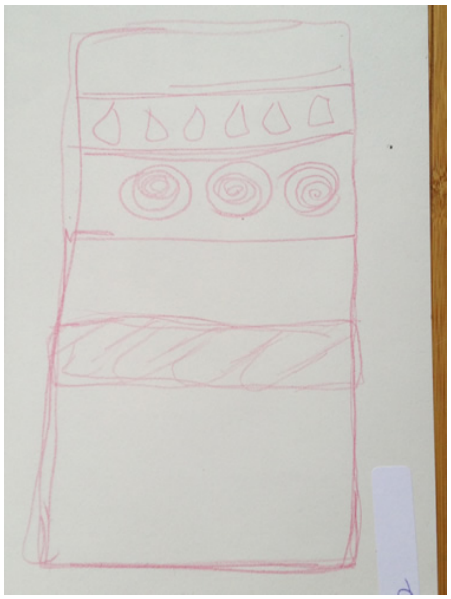

Beetles
Design appeal:
- legs/antennae
surface textures (metallics) graphic patterns /material
1, 3, 5
colour variation
surface patterns - gentle line, pebbly
Colour #2
Parrtillism
halo ing
tyvek - bubbled
distressing - pouring
modelling paste
metallic
create hill/valley
pebbly


#5 Red/Green Colour scheme - Abstraction.
Shape
Nesting
Paisley
Woodgrain
Rising
Trapunto Raised areas
Quilt background
Stitch
Vase shape?
Abstract by
"shape"/motif.
Shapes w/i shapes?
Monochromatic to give
graphic quality contrast
line + shape emphasized
pebble Red / Red Purple / yellow (micro)

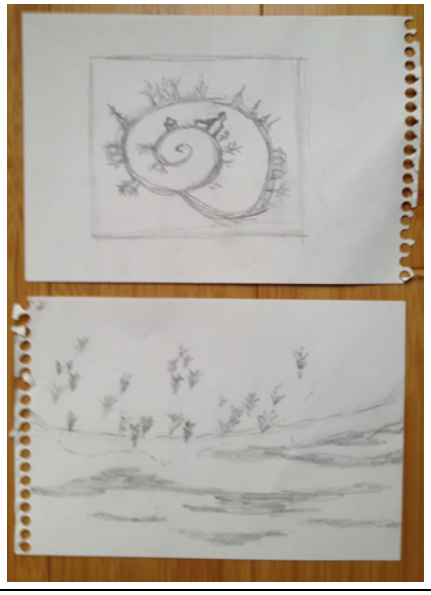
Designer #8

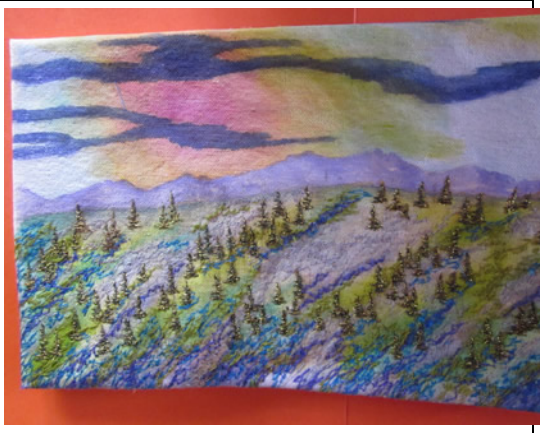






Designer #9





Designer #10