INDIGITALIZED :

traditional Métis artistic expression in contemporary media art

by

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Abstract

This thesis examines a re-indigenizing process facilitated through traditional and computer-based media artistic expressive forms. My recent discovery of my Canadian Indigenous ancestry has brought me to investigate how my identity as a contemporary artist has been impacted by my exploration of Indigenous forms of expression that were lost to me due to my grandmother’s assimilation to a homogenized Canadian ideal.

I examined the relationships between my contemporary artistic practice and Indigenous perspectives to develop an exhibition of work that bridged computer-based media and traditional Métis beading practice.

My artistic influences and a descriptive account of my current artistic practices is synthesised with my new Indigenous knowledge of identity and expression, which not only produced several works of art, but also generated new programmatic methodologies and a computer-based media toolkit that can aid Indigenous artists with developing computer and media based art projects.
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Dedication

For my grandmother, Ida Marie Corbett (nee Richard) (1908-2003). Your spirit and teachings have, and will always, lead me to who I am
Chapter 1: Introduction

This thesis aims to investigate how my “traditional” Métis artistic practice can be expressed in contemporary media art forms. Through the fusing of North American-Colonial with Indigenous world-views, I intertwine my academic research-based knowledge with experiential and Indigenous forms of understanding in my traditional Métis beading practice. My fraternal grandmother was of Cree and Salteaux descent but for reasons known only to her, never let her heritage be known to her children. Subsequently I am attempting to embrace my grandmother’s culture and heritage that I have not been exposed to, by adopting methods of creative Indigenous production within my creative practice as a digital artist. I view her silence as a form of (self) oppression which, as I discovered, is a common story amongst Canada’s Métis and First Nation’s communities. This lost heritage is the seed from which my thesis has grown. My autobiographical exploration and academic research of loss and conciliation of dual cultures supported my creative and visual voice presented in my Master of Fine Art Thesis Exhibition “Expressions of the Sacred” at the UBC Okanagan FINA Gallery in June/July 2015. The fusion of these perspectives is critical to understanding my development of a Métis perspective of identity, and how I have synthesized my modern Canadian education and experience with my recently-discovered Indigenous heritage.

My focus in this written supplement to my visual thesis is to provide the background and context on which my visual exploration is rooted. I will first describe the exhibition works and space before I continue with a more in-depth look at my processes and methodologies and how they are informed by the specific cultures that serve as their foundations. I will conclude with an
analysis of the thematic components, the resulting affect the production of this work has had on me, and how I view its relevance within Métis and Canadian identity and culture.

Chapter one provides a description of my MFA exhibition including the physical layout in the gallery space, the glass bead and leather portraits, and the generative media installations.

Chapter two consists of perspectives on my processes and methodologies: specifically, how my methodologies are informed by my exposure to contemporary practicing artists and the perspectives of Indigenous artists who are exploring similar concerns by navigating identity and relationships between colonial and Indigenous cultures. Within this chapter I explore image fragmentation and distortion, how Indigenous art both affects and is affected by contemporary media artistic practice, as well as the technological and programmatic encoding of Indigenous creative expression.

The first perspective of chapter two presents my contemporary artistic education and how my interest in image fragmentation and distortion is informed by artists like Georges Seurat and Chuck Close. It includes a look at my formal artistic processes and development from the standpoint of the academy. This section explores my interpretation of imagery as a metaphor of identity and how physical image fragmentation and reassembly in art has developed over time and continues to be a foundational component of my own art production.

The second perspective in chapter two consists of my exploration of the traditional Indigenous art practice of beading and continues my exploration of meaning and metaphor but from a more Indigenous point of view. I investigate Indigenous artists that have played an instrumental part in the development of my Indigenous perspectives, and how some of my methodologies and processes have changed due to those influences.
The third perspective of this chapter is a distinctive systemic/technological point of view that although is derivative of a modern globalized society, remains a culture on its own – it is a virtual place where code is art, and has its own language, aesthetic, and culture that is distinctly separate from the previous two perspectives. I discuss my ideas behind coding aesthetics, both from how I approached the code created for this thesis as well as how the generative nature of the visual outputs reflect more than just the logical run of systemic functions. In this way, I see code not as a tool but as a place – a technological place wherein I communicate and bind together my colonial-history and Indigenous natures.

Additionally, I wish to note that I do recognize the terms "Indigenous", "Aboriginal", and "Native" have several definitions that share a number of similarities and just as many differences. However, I grew up with all of these terms referring to the same culture and people, and I follow the rules concerning their use as used by the Canadian government\(^1\) and mirrored by the Indigenous Foundations project at the University of British Columbia\(^2\). So, though these definitions may vary in meaning depending on geographical, political, legal, or cultural context, throughout my thesis I use these terms interchangeably but always in reference to the heritage and representation of the Métis and First Nation people in Canada.


Chapter 2: Exhibition: *Expressions of the Sacred*

“...art is an expression of the sacred”

(Leuthold, 1998)

My Master of Fine Art Thesis exhibition “Expressions of the Sacred” at the FINA Gallery on the University of British Columbia’s Okanagan campus from June 28th to July 11th, 2015 is the culmination of a journey I undertook in self-exploration and Indigenous reconciliation. My exhibition environment, the physical space, was designed to reflect my world-view and identity as a Western-Indigenous dual citizen of our modern culture. Within this space were displayed five intimate portraits, hand-beaded on leather, and framed with tree branches and sinew which represent my Métis inheritance, along with three large-scale programmatic, animated, projected “beading” installations that blend together my newly-discovered Aboriginal ancestry and my settler-history Canadian identity.

### 2.1 Exhibition Space

“Contemporary work by Indigenous artists tends to be process art, conceptual in its orientation. The viewer is not fixed in relation to the work, but can enter it from many angles.”

(Leuthold, 1998)

During the week long setup of my exhibition I was presented with a number of important questions regarding the physical arrangement of space and the relationships to my work. A couple of the more significant orientation choices were the use of the spiral, that is reinforced in
the physical beading portraits as well as the digital projections, and openness, or the ability to walk freely around the space, including behind the work.

The spiral motif is repeated in a number of works in my exhibition, but is also applied to the actual gallery space setup: my three large projection installations were set up as the inner part of the spiral and the small beaded works were situated around the outside ring of the spiral. This arrangement provided both a kind of narrative and a literal representation of progressive regression where I positioned my modern self at the center. As one followed the spiral outwards, I returned to the traditions and history of my Métis culture. Though I left behind the technology in the advancement of my Indigenous knowledge, one could not exist without being built upon the other. This relationship is further supported by my works being not two dimensional renderings but three dimensional objects.

By arranging my works in the open free space of the gallery as opposed to being attached to the walls that is customary in traditional gallery exhibitions, I invited the viewer in to my personal space where they interact with my works as cultural objects that have multiple meanings/points of view, as opposed to as works that are solely art objects. In this way I am making the comment that my work is sacred to my heritage, and that my community is free for everyone to interact with and experience not just as works of art but as representations of culture. They are constructs from my Indigenous self and my community not to be venerated as art in the context of an academic institution. This is purposeful. My approach to hanging the work is a way to consciously respect both heritages by allowing the objects to occupy the physical academic/gallery space but to retain their Indigenous approaches and genealogies.
2.2 Physical Portraiture

Each portrait in my exhibition was created with a different beading style, reflecting specific properties of the person depicted. The three main beaded portraits in this exhibition—glass beads on a leather support, stretched within a frame of natural wood branches using sinew—were of my children, with two proof-of-concept works featuring other family members. Each portrait is approximately six inches wide by 9 inches tall, with the final frame being approximately twelve by sixteen. The three portraits of my children - Lucas (figure 1), Alexi (figure 2), and Jacob (figure 3) were hung in the outer ring of the spiral layout I created in the gallery space.

The specific style of each reflects my interests in an Indigenous concept of the collective support of community over individual identity and the transmission of knowledge from one generation to another. These portraits are kept small to accent their intimate nature and invite the viewer to approach and experience each individuated bead.

Figure 1. Alexi, 2015

Figure 2. Lucas, 2015
Figure 3. Jacob, 2015
2.3 Digital Portraiture

There are distinctive separations and a merging of cultures evident in my large digital projection installations. I used the programming development environment called Processing to encode my physical experience of beading, generated in digital imagery. The removal of beading from the physical world into a digital one is representative of my separation from my Métis heritage. My identity, constructed in the computer age, is displayed as a digital archive. However, though a separation exists between the actual and digital forms of beading, these works visually represent my merging of cultural beliefs and perspectives through a complimentary coming together of technologies, methodologies, and pedagogies.

These three large digital projection installations of my Métis family members are projected onto three separate cowhides; they simultaneously exist in a physical and virtual place. All three works were complimented with the inclusion of organic and natural components, being hung from large freshly cut pine branches with lashings made of deerskin and natural sinew. These three works entitled Generations I, Searching, and Generations II are described thusly:

*Generations I* (figure 4; figure 5) makes explicit use of the spiral to animate digital beads in a sequence to complete a portrait of my Métis intergenerationality. Each completed portrait displays a family member in generational order – my grandmother, my father, myself, and my son. As each generation completes, the beading is “undone” from the center to make room for the next generation. As the beads continue to undo, a new portrait is started at the same point as the previous. Then the cycle continues.

*Searching* (figure 6) is an interactive work that utilizes a Microsoft Kinect sensor for proximity input and as a device for decision-making. The sensor receives spatial feedback from
the three dimensional space in front of the work which is processed within the Processing application. Decisions are made based on the strength of a viewer’s relationship to designated “hot-spots” in the work’s field of vision. The choices made from the sensor’s input will change the display of the projected image. The portrait of my father in this case attempts to look away from the viewer’s position of engagement. As more viewers enter the space a situation is created where several decisions need to be made as to where the image will face. There are a number of other methods I could have chosen to drive this animation but proximity and engagement were important factors for this piece. As such the Kinect sensor provided me a greater control than noise-based or random inputs to determine when and where the code reacted. It supports the importance I place on human decision-making in programmatic encoding artistic works.

*Generations II* (figure 7) is the third installation and is a timed sequencing linear beading projection. Unlike *Generations I*, which makes use of the spiral as its primary display structure, *Generations II* uses a squared grid arrangement to display the portrait. With a subset of ten different bead shapes, rows of relatively equidistant beads are sequenced together using collections of randomly selected bead shapes and colours to formulate the portrait output. Each projected portrait is therefore unique due to the infinite combination of bead shape, rotation, and colour selection. Furthermore, the person depicted in the projection is timed to randomly change every six to ten seconds, and within those six to ten seconds that individual portrait is computationally-reconstructed once every second.
Figure 4. *Generations I*, 2015. [transitioning from Ida to Rick]

Figure 5. *Generations I*, 2015 [Ida]

Figure 6. *Searching*, 2015. [Three interactive activations]
Figure 7. *Generations II*, 2015 [Jake]
Chapter 3: Methodologies and Processes

As I have developed my artistic practice I have explored many mediums and forms of creating work. My knowledge gathering for this work was no different, in that I looked at not just mediums and materials new to me, but also at how those instruments respond within my creative explorations. In this chapter I discuss the modern/contemporary artists, including distinctly Indigenous artists, who influenced my thesis work. I reflect on how their work echoed my specific affinity for image fragmentation and interactive media. Additionally, I explain the materials and choices I made in the creation of the work, and conclude with an examination of my own programmatic process and how I imbued it with an Aboriginal perspective. I use computer programming as a tool to encode an Indigenous perspective and action as opposed to coding for efficiency or functionality.

3.1 Identity: Image Fracturing

“The first step in redefining self is the fracturing of the old sense of identity based on national spheres of influence.”

(Leuthold, 1998)

My approach to art-making often involves the fragmenting and distortion of imagery as a means of expressing the complexities of identity and identity-creation. From a sociological perspective I agree with postmodern theories of identity as a fluid state (Deleuze & Guattari, 1987; Foucault, Martin, Gutman, & Hutton, 1988; Weber-Pillwax, 2003), that representations of the self are dynamic and “cross the boundaries of time and space” (Weber-Pillwax, 2003), and are not something internally held. However, I do resist in part Deleuze and Guattari’s notions that identity is “constituted by ‘assemblages’” (Kidd & Teagle, 2012), because to me
‘assemblages’ implies that one’s identity is composed of a *selection* of experiences instead of the entirety of one’s life. Instead, I propose that though we are indeed an amalgamation of experiences, our identity is created through a process of continual fracturing and reassembly. As an artist, I like to translate this concept into a visual metaphor where my images are constructed out of fragments of other images or objects. I believe we shape our identities by breaking apart our cumulative identity to consume and integrate new experiences. These experiences are not merely added to our identity, but infused. In some cases we need to separate previously joined thoughts in order to find an appropriate place for the new ones. Thus, we are still creating an assemblage, but it is one that is made up of the *whole* of our existence and not just the parts.

There are a number of artists that have had a significant influence on my work. Specifically, artists who have explored reduction and/or division of the image into smaller compositions of colour and form: Georges Seurat, Ellsworth Kelly, and Gerhard Richter have had a great influence on me. Perhaps the most influential modern artist for me is Chuck Close. Though Close started with a meticulous hyper-realistic style, a medical condition forced him to explore the fragmentation of the image into much larger elements. His recent works from the turn of the 21st century treat each grid-cell component as an individual work that can be regarded simultaneously as independent as well as part of the greater image. This image fracturing has also been explored in an Indigenous context by Lawrence Paul Yuxweluptun. Yuxweluptun is a Northwest Coast-Salish Canadian artist who utilizes Coast Salish iconography and cosmology in his work. Specifically, Yuxweluptun’s ovoid paintings are not just simplifications of Coast Salish image structures in to pixel-like ovoid colour objects, but are representative of Indigenous philosophy and allow him to “intellectualize place, space and Native reason” (Yuxweluptun,
2003). The ovoid structures that Yuxweluptun uses are directly related to the beads and bead structures which I use both physically and digitally.

My bead works treat each element as a critical component of the image while facilitating the expression of my own “Native reasoning”. My work avoids consciously excluding or removing pieces of my imagery, preferring the construction of the image through the addition of whole elements. In this manner I am able to visually explore the formation of my own identity as a product of mixed ancestry that has been distorted and fragmented through my grandmother’s self-oppression from her Métis culture and heritage.

3.2 Beading as Artistic Practice

“The experience of nearly having lost the knowledge of ancestral art forms is one motivation for working with traditional styles.”

(Leuthold, 1998)

I had never beaded before I started the work described in this thesis, but two things strike me as significant with beading as an art form. The first is that it perpetuates my affinity for individuated imagery components and its subsequent metaphor to my ideas surrounding fracture and the concept of Koestler’s holon\(^3\). Secondly, it is a form that has a rich history that is deeply respected and treasured in Aboriginal and Métis culture (Belcourt, 2010) – a culture which I am actively seeking to reclaim. Additionally, I want to create work that could function as art from both the viewpoint of the academy as well as from an Indigenous perspective. In other words, I want to ensure that my beaded artwork is not an attempt to appropriate an Indigenous style or

\(^3\) Holon: from the greek ὅλος (holos or "whole"), is a word coined by Arthur Koestler in his book “The Ghost in the Machine” (Koestler, 1968). The word describes something that is simultaneously a part of a something as well as being an independent whole.
aesthetic as seen through my Westernized lens (Leuthold, 1998), but my work must perform as a true expression of my Indigenous voice. To accommodate these reasons I need to understand the underlying motivations of Aboriginal and Métis beading practice. According to distinguished Métis artist Christi Belcourt there are three distinctive threads that are common to Aboriginal beadwork in North America, all three of which I personally experienced and identified with through the making of my thesis work. I reflect on these common threads here. They are: personal and cultural/group identity, the spiritual and sacredness of imagery, and the practice as a Healing Art (Belcourt, 2010). In terms of methodology I discuss how these three threads relate specifically to my chosen subject imagery and my experience of the physical act of beading.

My exploration of identity throughout my lifetime has always been an important part of my artistic methodology. Beadwork is no different. As Belcourt notes it “expresses cultural and personal identity for the maker and wearer” (Belcourt, 2010). As well, beadwork is one way that native peoples record images that are spiritual and sacred (Belcourt, 2010; Racette, 2004). Both of these concepts that Belcourt identifies are especially relevant to my subjects – my children. Obviously my children are very sacred to me, but I also believe they must be responsible for the formulation of their own identity. I do not have the authority to tell them who they are. Though my teachings and stories may have an influence on how they perceive the world, their personal identity should be theirs to express. As such, I felt that the portraits I used to recreate my children in bead-form could not be my choice. I asked my children to provide me with a “selfie” taken with their mobile devices. The only parameter I gave them beyond the “selfie” format was that it must represent them as they see themselves. Meaning, if they wanted to smile or not, or include something important to them, they could. This was an important step in my process because I wanted them to provide me with their perceptions of themselves.
reproduce, they had participation in the choices for how they would be perceived. This way I feel I could retain, to some extent, their spirit and personal projection of self. The resulting beaded portraits from my perspective not only reflect a physical likeness, but are self-representational.

When it came to the actual process of beading, I was intrigued to discover that the seemingly tedious task was far more meditative than it was monotonous. I was happy to realize that the focus required for beading my designs allowed my mind and body to relax and let go of my daily stresses. In fact, I found there were moments when time and place felt arbitrary and irrelevant. The only other occasions I have experienced this state of being is when practicing deep Vipassana meditation. In addition, I found the threading highly symbolic: with each stitch and bead I was bringing their likeness into being, which in turn felt like I was bringing my children closer to me. This made for a new intimacy with them, despite the geographical distance that separates us.

Much of my research for this thesis involved studying Métis beading patterns and processes. My main source of inspiration and guidance was a small book titled “Beadwork: First People’s Beading History and Techniques” by Métis artist Christi Belcourt. Belcourt’s book not only provided me with a basic understanding of proper and/or traditional beading techniques, but also of the history and personal importance of beading for the identity of one’s culture. With this primer I purchased some beads, Glovers needles, and a small piece of leather. I approached the beading of my first portrait using an oil pastel painting I made in 2003 as inspiration. The original oil pastel work was loosely based on Chuck Close’s cell-grid process, which I felt would be helpful in spacing and sizing the beaded image. The result was my first beaded work Chagdud Tulku Rinpoche (figure 8). This experience provided me the opportunity to explore how beading fit into my contemporary artistic practice, as well as establishing the necessary parameters,

4 Vipassana meditation is an ancient Indian meditation process focused on self-observation
possibilities, and limitations that the media could afford. The most significant of these parameters were the actual materials – from the type and size of substrate I could use, the best tools for threading, and the size, style, and material of the beads.

I find satisfaction in remaining true to artistic and cultural traditions—as an artist I like to make my own materials—therefore, once I completed my proof of concept work, I engaged in sourcing and creating my own materials like leather, thread, needles, beads, and associated tools.

Figure 8. proof-of-concept - Chagdud Tulku Rinpoche, 2014
**Leather**

The materials exploration is a large component of my artistic methodology, and one of the most challenging experiences was exploring the fabrication of my own leather or buckskin supports for beading onto. The greatest hurdle in this pursuit is overcoming my Buddhist beliefs in the sacredness of all life, which makes hunting for me not something I can actively participate in. Therefore, I rejected the possibility of hunting deer just for the purpose of obtaining the hide. If I was not going to make use of the whole animal for my own survival I could not justify the sacrifice of life for this single material. I chose instead to acquire my deer and elk leather from a vendor who supplies these types of hides from non-sport hunting, and supports the livelihood of First Nation communities.

**Thread**

I looked at a number of thread alternatives including thin cuts of leather lashing, sinew, and repurposed cotton fabric. However, without a consistent size and control over the thread required to tie the bead to the leather I once again looked for a natural source. I chose a thread that is variegated and made from organic natural cotton. As a way of maintaining my respect for nature and Earth I wanted to avoid the use of artificial or man-made materials like synthetic silk, nylon, and polyester. Because the thread in this work ultimately reflects my connection to my family and Aboriginal culture and heritage, I felt that the material itself must also reflect that these connections are genuine and natural. I chose threads as free from commercial manufacture as possible.

**Needles**

Needles are one of the hardest instruments to physically make for beadwork because they need to be small enough to thread through the bead, but also strong enough to pierce the leather or hide. I attempted to create some needles with locally-sourced hardwoods like cherry, walnut,
and birch. Though I was able to make needles small enough to fit the larger 8/0 beads I was unable to make a needle to fit the 10/0 beads. Additionally, though I was able to pierce the leather, the point on my best needle could not be maintained for more than 3 or 4 piercings. I would have tried using animal bone or tooth, which may have provided needles that would have remained sharp for a longer period of time, but my lack of knowledge and time were insufficient to explore those avenues. In the end, I obtained specifically-designed metal needles from the same business that supplies the hides and leathers.

**Beads**

I had much better luck with my beads to some extent. I decided early on that I would be using glass beads because in historical Métis tradition glass beads were obtained through European trade and were prized and preferred by Métis artisans. However, I also felt it was important to explore handmade beads as well. I didn’t expect my handmade beads to be used in my final works due primarily to the time necessary to make the quantity I would need. I could make about 15 to 20 beads an hour, but with one work requiring minimum three to four thousand beads, it was not feasible for this project. However, I still invested time in this stage because it provided me valuable experience and knowledge that allowed me to explore what First Nation beading practices would have been like prior to European contact. I made a number of beads from wood which were fairly easy to make from softer woods like firs and yews. I value this part of my process because I developed skills in making wood beads, as well as producing natural dyes and inks made from found “pigments” like various soils, charcoal, and berries.

**Beading Tools**

Finally, after making my proof-of-concept work, I looked at making the beading process easier. One of the problems that I found in my first attempt at beading was keeping the leather
stretched evenly so as to not warp the beaded image and to allow for easier piercing with the needle. Because my works were to be larger I looked at pre-stretching the leather onto frames where I could control the tension on the leather. This also allowed me to flip the work front and back easier without damaging the pattern. It also resulted in less tangles and unwanted knots in the threads.

I looked at quilting and needlepoint hoops for inspiration but, because I couldn’t find an appropriate size, I found other materials to make a stretching frame. My final frame was made from two bamboo cooking steamers. After removing the bamboo mesh from the bottoms I cut one frame all the way through on one side, allowing it to be flexed and wrapped around the other steamer tray. By fastening a bracket and nut-screw to this outer frame it allowed me to tighten the stretched leather with sufficient pressure to prevent it from relaxing.

### 3.3 Code for Art, Code as Art

“…a celebration of art made with code by artists that push the possibilities of creativity - where technology is their canvas and code is their raw material.”

(Google Developers, n.d.)

As a computer programmer of thirty years I have had plenty of time to philosophise on coding aesthetics, knowledge representation, and data visualization. My interaction with the computer shares is a reflection of how I interact with my outside-world. I often look at life activities as if they are physical manifestations of computational functions. I find comfort in the logic and language of digital environments. Turkle draws many of these same behavioral comparisons between life and computers, seeing the computer as an object that created a cross-pollination of psychoanalytical and computational metaphors and behaviours shared between
humans and computers (Turkle, 2005). I envision this relationship much the same way, I view computer culture the same way I view geographical and societal cultures. For example, when people born and raised in one culture then migrate to live in another, some accommodation and concession need to occur in order to fit the laws and culture of the new location. Computer programming is very similar to this concept. It is not merely a culture that is driven by logic and math. Human-computer relationships can be formal or abstract much like our social relationships. In fact, many programmers approach their computer interactions in much the same way artists approach art, utilizing personal experience and knowledge that are not necessarily consistent with the assumed formality of mathematical constraint (Turkle & Papert, 1990). There is such diversity in computing informed by “multiple ways of knowing and thinking” (Turkle & Papert, 1990) that indicates there is a unique culture to coding that is independent of social and popular culture archetypes. Furthermore, from a purely definition angle, computer programming started out as an “art”. It wasn’t until society decided to “rename” it a science, as in “computer science”, that it became removed from an art connotation (Knuth, 1973, 2007). In a modern sense the idea of code as art can be approached in two ways: it is either a physical presentation of code as a form of artwork, like a painting or printout of a barcode for example, or, as the Google Developer’s community and creative competition DevArt describes it, as a merging of creative exploration and technology informed by artistic concerns, where the technology is used as the canvas and the code as the media (Google Developers, n.d.). This is important to understand because my approach to programming with relation to my artistic work generated here comes from multiple disciplines and multiple forms of knowing.

In terms of coding the visual renderings of my thesis I was mostly interested in addressing two concerns that are in line with DevArt’s focus on code as art. My first concern
involves having the code reflect my natural physical process of making art, and my second concern involves giving code many points of freedom and choice, to make it as dynamic, expressive, and independently creative as possible.

3.3.1 Encoding action

Having my code reflect my creative processes is not new to me. I have developed programmatic works in the past where I wrote the code in a way that fragmented digital imagery into components much the same way I would with traditional drawing or painting. In this thesis exploration, my exposure to various techniques of beading helped me establish a preferred practice of beading which I wanted to reflect in code. The result of this exploration is reflected primarily in my two generative works, *Generations I*, and *Generations II*, where both are programmed to mimic my physical process. As such, the code in some instances was produced in a manner that was knowingly inefficient from a programming perspective, but this was necessary so that the program itself was a more true reflection of my physical process as opposed to a computational one. For example, a sample output from *Generations II, Jake* (figure 7) shows a digitally generated portrait of rows and columns of coloured bead images that are arranged in a very systematic manner. The underlying code to create this gridded structure could be constructed in a number of ways, but from a programmer’s viewpoint the easiest may be to use a nested “for…loop” to iterate through each “bead” from left to right on each row until the width of the canvas was full and then advance to the new row and repeat. In pseudo-code this might look like this:

```
For rowCount = 1 to NumberOfRows
    For beadColumn = 1 to NumberOfColumns
        placeBeadAt(rowCount, beadColumn)
```
However, as I experienced during the physical act of beading the portrait *Lucas* (as seen from the back) (figure 9), I found that once I got to the end of a row the next logical bead was immediately below the last bead placed and I returned “backwards” along the proceeding row. In this scenario the beading pattern goes from left to right then down one row and from the right back to left and repeats in this fashion until it is complete. Therefore, I wanted my code to represent this process pattern of beading. I retained the outside “for…loop” iteration to progress from bead 1 to bead *n* on the first row, but I then altered the next loop to progress from bead *n* to bead 1 by checking if I was on an odd or even row – odd rows used a left to right format and even rows constructed from right to left. Again in pseudo-code this might resemble this:

```pseudo
For rowCount = 1 to NumberOfRows
Select Case rowCount
Case rowIsOdd(RowNumber)
   For beadColumn = 1 to NumberOfColumns
      placeBeadAt(RowCount, beadColumn)
   Next beadColumn
Exit

Case rowIsEven(RowNumber)
   For beadColumn = NumberOfColumns to 1 step -1
```

Figure 9. threading detail from *Lucas*
In both cases the output would be the same, but the first example would be programmatically more efficient because it has fewer instructions and parameter checks. But my artist’s perspective prefers the second example because it is more closely related to my physical process of beading.

3.3.2 Coding freedom of choice

My second concern in programming these works was the idea of freedom, choice, and/or variation. My programmatic approach to this is accomplished in two ways: first through the use of tools and environments available, and secondly by using random selection that alters the natural logic of the program.

There is only one way to draw a straight line between two points, but there is almost an infinite amount of media that I can use. I apply this same philosophy to coding. I have a specific output in mind, but I have a number of tools, languages, and development spaces to choose from. For my thesis I used the development environment called Processing to generate my digital imagery, and with my piece titled Searching (figure 6) I also used a Microsoft Kinect sensor for proximity input and as a device for decision-making. The input the sensor receives from the three dimensional space in front of the work is processed and decisions are made based on the strength of a viewer’s relationship to designated “hot-spots” in the work’s field of vision. The choices made from the sensor’s input will change the display of the projected image. The portrait of my father in this case attempts to look away from a position of engagement. As more viewers enter the space a situation is created where several decisions need to be made as to where the image
will face. There are a number of other methods I could have chosen to drive this animation but proximity and engagement were important factors which is what led to my choice of tools for this piece. This approach is different from using strictly random or noise-based inputs to determine when and where the code reacted. This process also reflects how the artistic works can be programmed for the decision tree to be replicative of human method.

In terms of methodology, translating the physical and to some extent mental processes of my art-making into computational forms are a matter of allowing for as many points of deviation as possible. It is obvious that computers are relatively logical in that they perform their tasks according to very systematic and logical sets of rules provided by the underlying program. Without discussing the complexities and differences of artificial intelligence and computational creativity, how do you introduce points of decision-making with suitable solutions in code? I simplify this question by analyzing my own creative process and programmatically encoding my decision making as selective random routines as a way introducing a certain level of noise into the logical processing of the script.

As an artist I have spent hours drawing and re-drawing the same object or subject; each work has its own unique characteristics, each is distinct and separate from the previous though the source never changes. Those differences are tied to changes and alterations I make while drawing or painting. Choices like: what scale to use, where to start, and when to add or subtract media. These types of questions can easily be turned into functions within the code. So in reality the code is not necessarily reactive to its creative products or its input but performs in response to random and random-augmented parameters. One example of this is how I handle colour choice in my two “Generations” pieces. For these works the colour choice starts with a random selection of a sub-set of colours from the source image. This initial colour choice is then further
processed based on existing colours, where the code tries to avoid repeating a colour to give the greatest amount of variation in the output.

These two colour selection functions are just a couple of echoes to how I choose colours when I paint and have been quite successful as programmatic representations of my physical methodology.
Chapter 4: Thematics

Throughout the development of this thesis I was conscious of the various perspectives from which the artwork could be approached and interpreted. Beyond the physical manifestations of the work and the materials used in their construction, there are a number of things that my works do thematically, metaphorically, and symbolically. By exploring traditional Métis beading practices and by hand-making my own materials, I have started to develop the tools, knowledge, and traditions that were lost to me. And by introducing this knowledge to my contemporary programming practice, I am creating a system and ritualized process where by people who have lost ties to their Métis and First Nation roots can re-indigenize themselves. In doing so, I am creating a path that people can take in order to learn some of the history that has been denied them by Canada’s racist colonial history.

I use beading and projected images that borrow from digital generative art practices, traditional Métis artistic practices as well as contemporary art practices to create mixed media beaded works, both physical and digital. These works have both tool sets imbedded within them as a way to bring forth the Métis artist as a generative contemporary figure. My beadwork shows how Métis artistic practice is not merely a historical practice but a living, responsive, and changing practice. Both my physical beading and my digital beading works are in their very essence the same practice. My traditional beaded works could not exist without the computer and pattern generation programming, nor could my generative computer algorithms exist without my experience of the physical action of beading. These practices are one-in-the-same with two different types of materiality.
Amongst the meanings that I have incorporated into this work, there is a heavy reliance on time, fracturing and distortion, cultural interconnectedness, and cultural synthesis that I feel greatly promotes media-based Métis art and artists that are currently under-represented in our culture.

**Time**

All these works are time-based media, whether literal in the time it takes for the digital animations to render, or time as a support component represented by the countless hours hand stitching thousands of beads, or the time it takes a viewer to seek out an image within the collection of beads, or time as an echo of history. All of these works encapsulate both time and place in different ways and with different objectives.

Within the glass beaded portraits time is one of the products of the work. But also within that time component, time for me also went unobserved. During the physical act of beading I found the repetitive process to be extremely meditative and relaxing. Though my mind was quite content at focusing on nothing in particular my perception of passing time would often slow and cease altogether, therefore each bead marked the passing of time while simultaneously not being associated with time passed.

The viewer recognizes this as a time-intensive work by the intricacy of the work itself and the interactions of colour and shape that form the image. And though the images are for the most part immediately recognizable as portraits, a viewer might visually wander amongst the beads and patterns to see where one’s imagination might take over to interpret or fill in details that are subtly referenced. For example, the nose and lips in *Alexi*: because the eyes are easily noticeable we know where the nose is located, but in the determination of colours, the bridge of the nose may not be explicitly noticeable by all viewers. Instead, it is implied. The viewer’s mind is responsible for making the nose evident.
Time is also a measure of our history, our community, and finally us. It takes time to grow and to develop our identity, which is a result of the time we spend with each other, as much as it is the cumulative history of our ancestors. My time beading and programming (which is also beading) were exercises in bridging and building my own history, community, and self-discovery.

**Fracture/Distortion**

Fraction and distortion, as represented by the individualizing of beads and their collected orientation to form an image, serves a number of purposes. First it is the simplifying of the image into its most important parts. Utilizing a single component to represent a specific point within the constructed image is as important as the entire image itself.

Secondly it is a resistance to realism and defined detail which allows the viewer to interpret and apply their own experience to the work. Though there remains a meticulousness and tight beaded construction to a couple of the works, this tension is representative of the controls our culture applies to the formation of our lives and by extension to the parameters and controls we place on ourselves to fit or conform which can lead to self-oppression, assimilation, and loss of heritage practices. My only work that was completed without those controls was *Jake*. In this work strands of beads and colour choices were left to interpretation and feeling rather than a prescribed pattern. Additionally, the beads are threaded in strands, as opposed to individually, with fewer tacking points allowing for some movement which can be affected by deliberate actions like touching or incidental environmental effects such as air currents of people walking by. In this way *Jake* is free from the societal tensions that bind us in place and restrict our ability to freely express our identity.
And finally, the distortion of the beading is reflective of not a moment in time, but rather the collection of all life’s experiences tied to one another. They do not appear as independent events but as (inter)connected experiences, which has extended significance when considering our culture’s reliance on others.

**Interconnectedness**

My exploration of the physical media and components that went into the construction of my work also resulted in the exemplification of our inter-dependency and reliance on others. I could not make my work in its entirety without the assistance and knowledge of others. Like nearly everyone, I do not possess all the skills and knowledge necessary to fabricate every component of work that I produced, much in the same way each of us do not have the skills and knowledge necessary to produce our own clothing or farm our own food or construct our own dwellings. We rely on the expertise and knowledge of others.

**Cultural Synthesis**

Métis culture has always been about blending. My Métis ancestry came into being through my English ancestors taking First Nation women as wives as much for their own survival in settling Canada as for their livelihood in trading with the native people of North America. Their identity as a mixed culture was founded on accepting both English and Aboriginal traditions; it was about synthesis, not an assimilation. This synthesis of cultures is meant to as a blending of traditions and not a coexistence of the respective cultural practices. They are meshed together in a new form that retains or emphasizes the most important aspects of both cultures in a single practice, where one does not replace or supersede the other but where both are required for the form to manifest. The manner in which I beaded my traditional portraits used a code in order to generate the underlying pattern/decision of which bead went where, so I
integrated both sets of practices in what appears to viewers to be both a traditional form and a non-traditional form. Therefore, I have created both a generational and a Western-Aboriginal blend of my cultural heritage as represented in both aspects of my work – the traditional beaded portraits and my computer-generated projections.
Chapter 5: Conclusion

Indigenous expressions in media art are in desperate need of continued exploration and representation by Indigenous artists. My thesis exhibition “Expressions of the Sacred” and this written supplement work to reduce this deficiency. My exploration and efforts to re-indigenize and express my own Aboriginal heritage utilizing modern media and computing practices provides one platform on which future Métis and First Nation artists can build media-based artistic systems. My experience of encoding my own understanding of indigenous methodologies and artistic practices provides a unique approach to modern art making that can act to reinforce one’s relationships with their identity, family, and community(ies).
Bibliography


