Designing for mindful reflection: An intertwined vision of design practice and everyday life

Rodrigo dos Santos

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By
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Awesome diner!

Breakfast alone!

liked more

Netflix + a snack

alone:

we went to the park!

Walking Playtime with kids!

Sleep after lunch!

clean + listen to podcast — invisibilia

clean all thing

talk to friend

Hot coffee and breakfast

Sat outside on my porch

LARG NIGHT? AROUND A CAMP FIRE!

Pieter CAMP

went out

Coffee

Diner preparation

Reading with the kids to see a loss growing

Acknowledgements

OOK 1st years
He+ memby!
Bored whisp?

routine

Head a pot luck with my peers

Worked in my office

Had a coffee

Her Job also ch
to support each o
old japanese p
from my neighb

Called

Walked to other
K reader

shopped for
Kids books
@ value village
@ value always
helps...

Grocery shops
working three well
by bike
lots of fun

Nice to
get back
home and
see my kids

Presentation
of the solution
for next release
Good
feedback!

at
work
arrive on
am rushed
ke up?
but I
don't want

Humm! Nice lunch! I had salmon!

Team work in the morning! Time to take decisions.

wine Organizing my closet

Watched presentations with my peers

Biked to school

take out dinner

Bike ride to-school

Went to a comedy show with my friends :)

with kids after dinner.

READ A BOOK CLEANED THE HOUSE

WENT FOR A WALK IN...

Preface

For a long time I have said that I suffer from stress and usually attributed it to work. Recently, however, I started to wonder why I feel this way. I should start by expressing that there were no clear reasons why I felt stressed because of work. These jobs were all in very safe, office-based environments, under very humane working conditions. Yet, that didn't suffice; I felt stressed anyway. The fact was that how I felt was not because of work. I was immersed in a regular feeling of life-stress, giving me anxiety throughout my day. Over the years I have found that I'm not alone—and I confess it is comforting to know I share this issue with others. Each of us has our own ways to deal with these moments of stress; and this research shows my relatively new view on them.

facial mask
+
loong shower

Brunch
with
friends

coffee

shoe
shopping
for my
son

found a
cute adidas
pair for
$181

Decluttering
+
home organizing

decor mag
+
research for
party decor

baked
cookies

...s books

made fritata

talked
to a good
friend

Cleaning
helps

talked to
family

went
running

...shopping
...r beers with
...y roommate,
very fun!!

Had friends over
to drink beers and
play ping pong

Had a
coffee

coffee

Befor...

WITH

...ENDS

WALKED TO A STREAM
AND LOOKED FOR
NATURAL BEAUTY

Browsed the
Internet
I did...
...or...

WORK
WORK

BEA...
PIZ...

Abstract

Today, more than-one quarter of the workforce population in Canada feels stressed (Government of Canada, 2015; Mental Health Commission of Canada [MHCC], 2015, p. 39), and work is one of the main sources of stress (Crompton, 2011, p. 46). Being self-aware, and conscious of the sources of our own stress are key for changing how we deal with everyday stressors. The body of design research presented in this thesis resulted in a design framework for creating mindful reflection practices regarding how we perceive, express and contemplate our life experiences. Through participatory design, individuals who feel stressed were engaged in co-creation and journaling activities in order to generate insights on: 1) how they were feeling during the day from an emotional, mental, physical and social perspective; 2) the possible reasons for such feelings; 3) the actions they took or envisioned taking in order to de-stress during that day. In a practice-led investigation, the ring patterns seen on the cross-section of a tree log were the inspiration for the design of visual and physical artefacts. These rings carry a lifetime of experiential information, suggesting that the way we choose to live our everyday experiences directly contribute to the person we become.

1 Theoretical context and framing

Changing perspectives of everyday stress

In recent years, a good number of Canadian workers have perceived life stress—stress as defined by the individual experiencing a situation, and the effects on their mind and body as caused by that situation (Cohen, Kamarck, & Mermelstein, 1983, p. 385). Working is an activity present in most adults' lives and, similar to any other everyday life experience, its events, routines and responsibilities can be a source of stress (see Side note 1 for statistics on work stress in Canada). However, stressful events do not need to carry only negative connotations. They also create opportunities for self-growth. How we perceive ourselves, and the actions and postures we take in life, seem to have an influence on how we deal with them.

Everyday stressors can be pervasive in people's lives, though the action of dealing with them can make us stronger. Di-Corcia and Tronick (2011), developmental and behavioural psychologists, defend the idea that developing quotidian resilience mechanisms is essential to overcoming stressful events. For them, "small stressors are ubiquitous in everyday experience" and simply being attentive to how we engage in the world can contribute to the development of resilience to stress (DiCorcia & Tronick, 2011, p. 1600).

Side note 1. **Statistics on work stress in Canada.** In the Canadian Community Health Survey 2014, "23% of Canadians aged 15 and older (6.7 million people) reported that most days were 'quite a bit' or 'extremely stressful'" (Government of Canada, 2015). A few years before, in a report published by Statistics Canada about the main sources of stress among workers, Crompton (2011) shows that 62% of the employed Canadian population who reported that their lives were 'quite a bit' or 'extremely stressful' (p. 45) indicate work as the main source of stress, followed by lack of time and financial issues (p. 46). According to the Mental Health Commission of Canada (2015), for over a decade more than one-quarter of the workforce population in Canada considers themselves "highly stressed most of their working days" (p. 39), with these numbers decreasing only slightly since 2003.

How we perceive and react to these stressors is key to our lives. The approach taken by health psychologist K. McGonigal (2015) involves shifting perspectives and seeing stressful situations as life challenges that push ourselves forward. Stress can be positive if we think of it as an instigator for personal growth, and identify which life factors are meaningful to us and which are worth changing. Asking ourselves "What mission in life or at work most inspired you? What change do you want to create? What kind of positive impact do you want to have on the people around you?" (K. McGonigal, 2015, p. 149) can contribute to broadening our perspectives on how we deal with stress. These questions challenge us to see our personal values, motivations, intentions and daily actions in a broader context; how we live now is the result of how we build our lives and perceive ourselves in the world.

Ultimately, these questions suggest an investigation into how we view our very personal selves. In the book *The Malaise of Modernity*, the Canadian philosopher Taylor (1991) says that the search for "the inner voice is important because it tells us what is the right thing to do" (p. 26). For him, to be in touch with our moral feelings requires us to be authentic, as well as understand who we are, and where we come from:

Being true to myself means being true to my own originality and that is something only I can articulate and discover. In articulating it, I am also defining myself. … This is the background understanding to the modern ideal of authenticity, and to the goals of self-fulfilment and self-realization. (Taylor, 1991, p. 29)

When we are self-aware and mindful of how we conduct our lives—the decisions we make, the actions we take and how we feel about them—we are open to change. Arrien (1993)—anthropologist whose work reveals the relevance of Indigenous wisdom to our relationship with others, nature and ourselves—comments that in contemporary society, many people feel little or no connection between the inner and outer world in which we live our daily lives (p. 3). For Arrien (1993), we should honour what we sense by being attentive to our intuition, "the source that sparks external seeing (perception); internal viewing (insight); and holistic seeing (vision)" (p. 84).

With K. McGonigal (2015), Taylor (1991), and Arrien (1993) in mind, we can say that in order to develop resilience, we should understand who we are, and how we perceive and express ourselves. We are engaged in a

constant search to understand ourselves in the context of our surroundings.

This thesis suggests that developing a mindfulness practice of reflecting on how we perceive, express and contemplate our everyday life can make us become more self-aware, and conscious of how we impact—and are influenced by—the world around us. This awareness can create opportunity to critically inquire and explore our values, how we project them into our everyday lives, and how we can commit to our thoughts, intentions and actions. When we make ourselves responsible for our inner life and active contributors to the outer world, we can revise our approach towards the stories we live that might cause us stress, and see possibilities for change.

To develop resilience to everyday life stress, we can engage in reflective mindfulness practices by looking at our own life experiences. Sanders & Stappers (2012) suggest that "the experience of the moment is connected to the past and future through memories and dreams" (p. 55). They elaborate: "people's memories, of past experiences influence how they behave and feel in the moment. Similarly, people's dreams for future experience also influence their perception of the moment" (Sanders & Stappers, 2012, p. 56). By

guiding our thoughts on our own everyday life experiences, and the expectations we have for the future, we can make conscious choices about how we will deal with present and future stressful situations.

How can design foster self-awareness and help individuals develop resilience to everyday life stress?

By engaging in a regular reflective mindfulness practice, we can ponder different aspects of the actions we take, the decisions we make, and how these can impact our and others' lives.

2 Design research and process

Exploratory
design
research

Stressless Cards *Stressless App*

Participatory
design
research

Research
through
Design

Co-creation

*Journal Sculpture
Lifetime Scroll*

Journaling
research

Holistic
visualizations

Research
analysis

Drawing
meditations
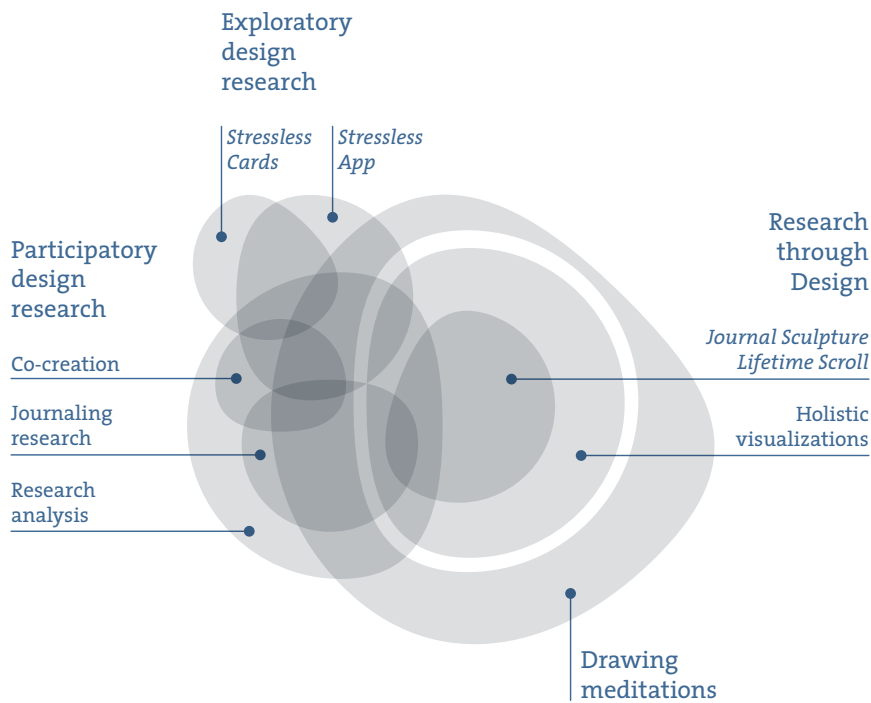
The primary research process presented in the following four sections involves exploratory and participatory design research, observations on my personal drawing meditation practice, and research through design (RtD) methods (see Figure 1). The design explorations that I present in the first section contextualized and informed the participatory design research decisions, in which I conducted co-creation and journal activities in order to understand how people perceive and deal with everyday life stress. In the second section I dive into this experience and describe my insights and analysis of these activities. Following this, I present how my personal meditative drawing practice intertwines and informs the direction taken in this design process. This new direction is expressed in the RtD section through visual and physical artefacts that I designed to explore how we can foster self-awareness and create moments of introspection in our everyday lives.

Figure 1. Design research diagram. How my personal meditative drawing practice is incorporated into the participatory and RtD processes.

Exploratory
design
research

Stressless
Cards

Stressless
App

Figure 2. Exploratory design
research diagram. The *Stressless
Cards* and *Stressless App* that
illustrate this section are
examples of how exploratory
design projects cannot only be
a reflect of, but also guide the
design process.

Exploratory design research

This exploratory design research is guided by the life of Violet, a persona that I created based on secondary research (Crompton, 2011; Heart and Stroke Foundation of Canada, 2013; MHCC, 2015), as well as my own life experience and personal observations. Violet's personality, habits and behaviours led me to design *Stressless Cards* and *Stressless App*, exploratory projects intended to foster individuals' Emotional, Mental, Physical, and Social experiences.

Violet

36 years old
software designer

Violet lives with her husband and a 3 year old daughter

She works 40h/week in a small, local software start-up office

She wakes up around 6AM to her get daughter ready for daycare and herself for work

In the meantime, her husband prepares breakfast for the family

At work, she has a full day of responsibilities and she feels she is always late with deadlines

New demands are commonly added to her backlog, regardless of what is already assigned to her

She regularly feels like she should take work home to meet her goals

She leaves her office at 5PM sharp to pick up her daughter at the daycare

During dinner time, she can't stop thinking (and talking) about her work, the reason why she feels guilty for considering that she doesn't give much attention to her family's needs

Even though she is exhausted after having put her daughter to bed, she cannot rest, thinking about all she has to do the next day

Everyday life stressors

1. Family responsibilities
2. Sudden work demands
3. Overload of work
4. Not enough time to rest
5. Thinking about work during family time
6. Personal versus professional life
7. Feeling that she should work long hours
8. Has trouble sleeping
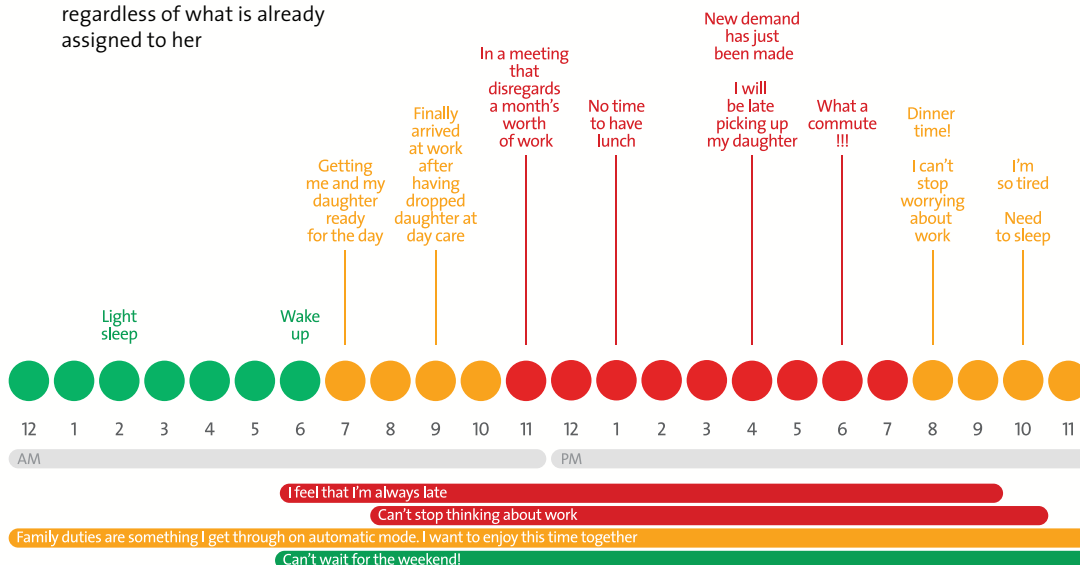
Persona and scenario

Scenario visualizations can display a timeline of events that occur during a regular day of the persona (Martin & Hanington, 2012, p. 152). I designed this scenario to visualize events that might cause the persona peaks of stress, when these events would likely happen, and how long they might potentially last (see Figure 3).

The green, yellow and red circles differ from the bars shown at the bottom of the page as the first represent specific moments in the day, and the second are recurrent thoughts and built-in mindsets which persist regardless of the day, hour, or specific event. Chronic or persistent stress is represented here by the red bottom bars. The green and yellow bars are persistent calm and eustress mindsets, respectively. According to Cohen (2011), chronic stress leads individuals to experience exhaustion, illness and disease if it becomes routine in their lives, while eustress is a beneficial type of stress, commonly associated with higher performance, energy and focus.

Figure 3. **Persona and scenario.** In this scenario, the hours of the day are represented in: green, the times of day when the persona was calm; yellow, the moments when she was under acceptable levels of distress; and red, under critical moments of distress.

Stressless Cards

Game designer J. McGonigal (2012) created a method for encouraging people to build positive behaviours in the face of stressful situations. Using her method, individuals can build emotional, mental, physical and social resilience in order react positively and not be affected by stressful situations.

According to J. McGonigal (2012), physical resilience, is developed when our body is worked so that "our heart, lungs, and brain react efficiently to stressful situations"; mental resilience is achieved as we exercise our focus, willpower and determination; emotional resilience is associated with seeing and experiencing our life through a positive lens, and being more hopeful than fearful; and "social resilience is about relationships" and how they support us in life.

With J. McGonigal's (2012) strategy in mind, I designed *Stressless Cards*, a set of eight cards that displays emotional-, mental-, physical-, and social-related practices such as be grateful, meditate, sleep well and make connections (see Figure 4). Each practice illustrated in the *Stressless Cards* is followed by recommendations of activities divided into four different levels of difficulty, from those that might be easiest to accomplish—e.g.: meditate for 5 minutes three times a week—to those that might require more willpower to perform—e.g.: at least twice a month take part in a community activity.

Figure 4. Stressless Cards. Emotional, mental, physical and social related-practices and activities for building resilience to stress.

- 🔴 Emotional
- 🔵 Mental
- 🟢 Physical
- 🟠 Social

Emotional

Be grateful

Look around and identify the good things about this moment

Levels of accomplishment
1. Once a day
2. Once in the morning and evening
3. Three times a day
4. As many times as you wish a day

Emotional

Just laugh

The action of laughing lowers your body's stress hormone (cortisol), relax muscles, and increases self-esteem

Levels of accomplishment
1. Watch a comedy movie or a sequence of funny videos
2. Talk about these stories and make a friend laugh
3. Go out and meet a goofy friend of yours
4. Make fun of yourself

Mental

Focus

Slow down and focus on the details of what you are living in this moment

Levels of accomplishment
1. Embrace the beautiful things at the start of every day
2. Avoid multitasking and do one thing at a time
3. Make a list of distrations and set a specific time for them
4. Work 90 minutes Rest 20 minutes

Mental

Meditate

Choose a calm place In your home, sit up straight in a comfortable position and pay attention to your breathing

Levels of accomplishment
1. Three times a week for 5 min. only
2. Every day for 10 min.
3. Before sleep with a mantra for 10 min.
4. Every day at the same time for more than 15 min.

Physical

Exercise

Exercising allows your body to ease tension and anxiety, and to work out stress

Levels of accomplishment
1. Once a day go out for a walk
2. Avoid elevators, and take the stairs
3. At least once a week go out for a long walk or run
4. Enrol in a gym that motivates you

Physical

Sleep well

Good sleeping habits help balance your life and result in a less stressful day

Levels of accomplishment
1. Take a bath or shower 90 min. before going to bed
2. Go to bed and wake up every day at the same time
3. Avoid digital distractions for 1 hour before going to bed
4. Put on calm music to create a relaxing ambiance

Social

Just talk

Talking to someone can help you to connect with your feelings and thoughts

Levels of accomplishment
1. Every morning go out and compliment someone
2. At least once a week share your ideas with your family
3. Call your friends regularly and talk about life
4. Frequently talk about your feelings

Social

Make connections

Relationships make us happier and healthier

Levels of accomplishment
1. Every day go out and smile at someone
2. Regularly meet up with your relatives
3. Every week meet up at least one friend
4. At least twice a month take part in a community activity

Stressless App

The *Stressless App* introduces the idea that each of us should be self-aware and mindful of the time and space we share with others. This app uses J. McGonigal's (2012) four pillars for developing personal resilience in everyday life—emotional, mental, physical and social—as a way for reaching self-awareness while exploring the importance that time and location plays on stress and wellness (K. McGonigal, 2015, p. 141). In the *Stressless App*, individuals' preferences and location, along with the current time, are used to give recommendations for behavioural practices and activities that can enhance resilience to everyday life stress (see Figure 5–7).
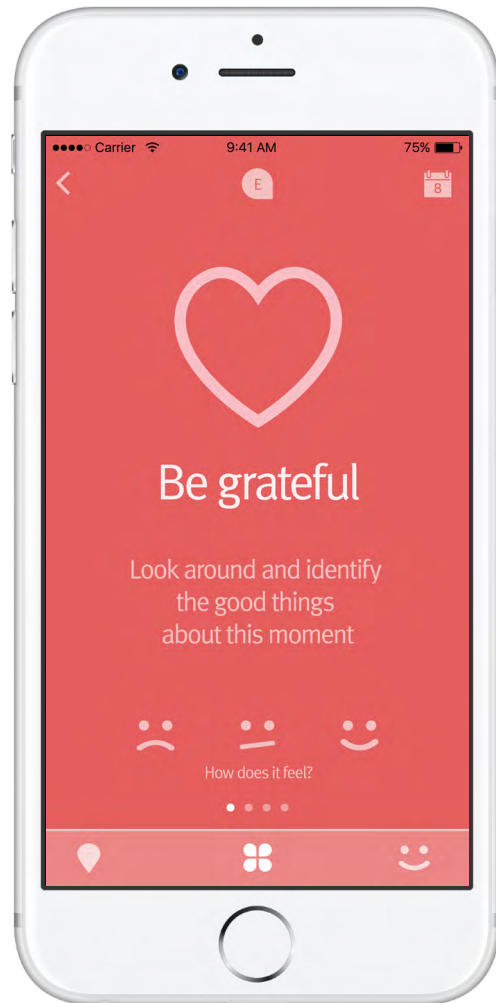
Figure 5. Developing resilience with everyday activities. Similar to *Stressless Cards*, individuals can select an emotional, mental, physical or social activities.

Swiping left over an activity reveals sad, neutral and happy emotion icons. By selecting one of the icons, users can check into an activity.
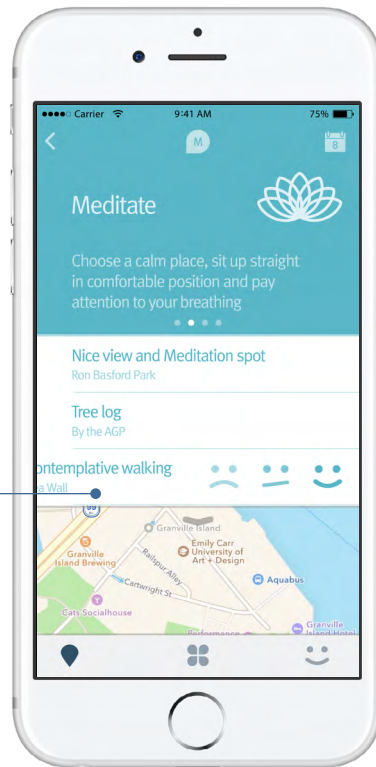
Figure 6. **Activity by location.** Individuals can receive recommendations for a location-specific activity. For example, if an individual is near a seawall, and chooses a physical goal, the recommendation might be to take a contemplative walk on the seawall. This feature requires building up a database of relevant and considered activities that relates to the selected goal.
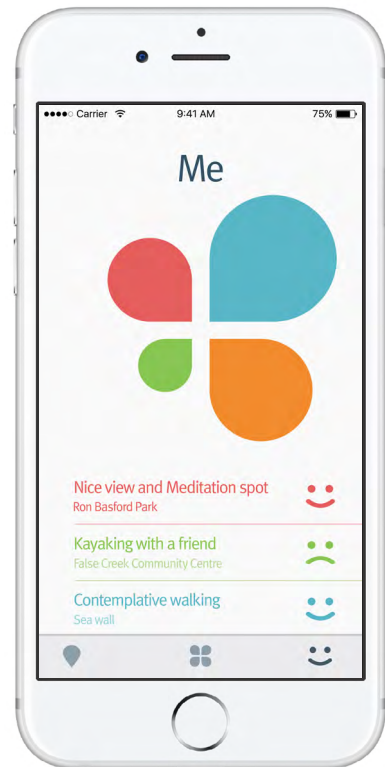
Figure 7. **Activities balance.** A dynamic chart aggregates the number of times the user engages with emotional, mental, physical or social activities. The assumption is that the more balanced these pillars are, the more balanced the individual would be. This screen also shows the history of the latest activities performed.

Participatory
design
research

Co-creation

Journaling
research
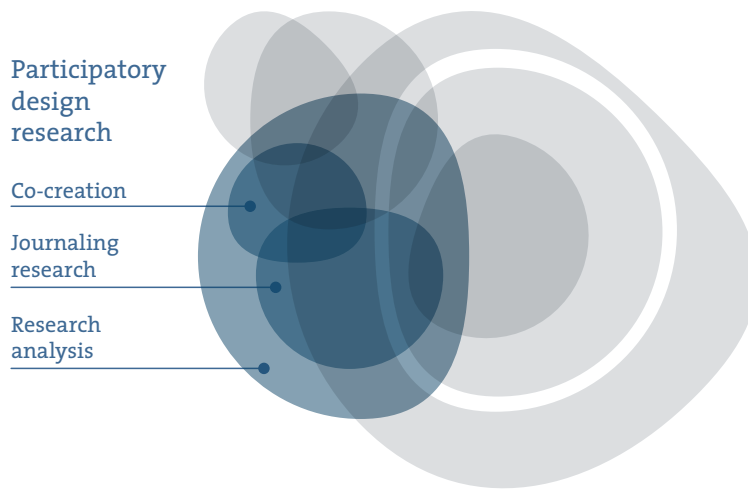
Research
analysis

Figure 8. Participatory design
research diagram. Co-creation
and journaling activities were
conducted and further analyzed
in this phase of the design
research.

Participatory design research

Using a framework of participatory design research methods, I designed a series of co-creation and journaling activities intended to explore how individuals who work in Canada perceive their daily lives, and how they develop resilience to everyday stress, specifically work-related stress. Violet—persona introduced on the exploratory design research section—illustrates the habits and behaviours of the target audience of this research. However, these participatory design activities were designed in such a way that anyone with perceived life stress could participate of this study (see Figure 9 on the next page).
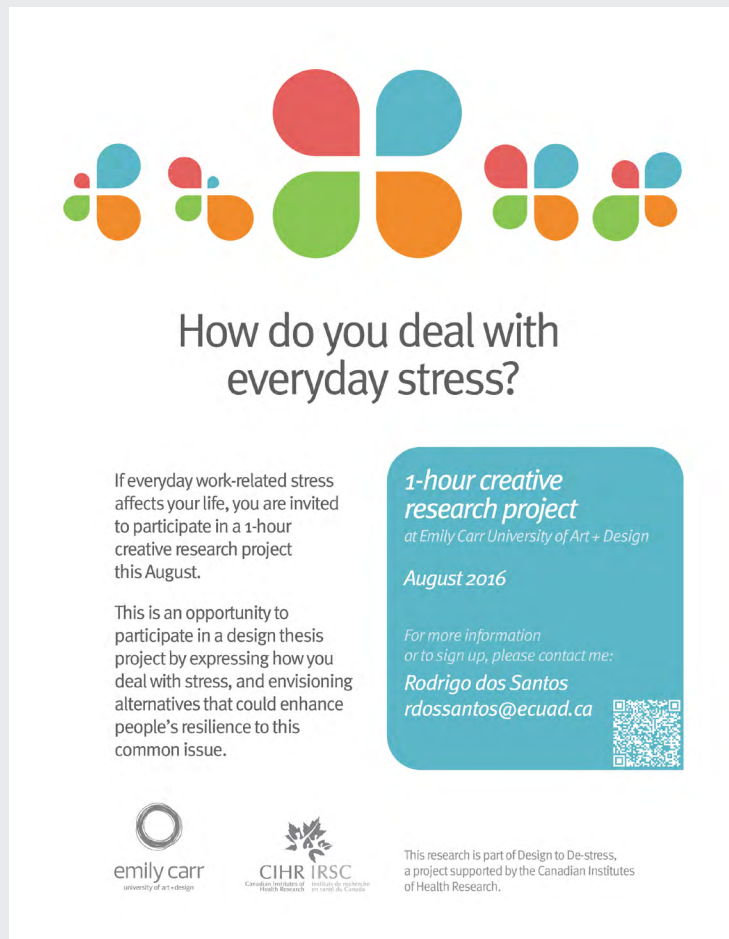
Figure 9. Recruitment poster. Both co-creation and journaling activities were conducted in Canada in the summer of 2016, and were aimed at adults who experience everyday work-related stress.

Co-creation research

In this co-creation activity, three people who live and work in Canada expressed how they perceive everyday work-related stress in relation to three different mindsets: their present experience, their feelings and behaviours built over past experiences, and their expectations for an envisioned future.

1. **Relation to present moment: How is your typical workday?**

   The participants individually created a timeline with a collage of the activities they usually engage in on a typical workday. They identified usual sources of stress and when those events are likely to occur during the day, from the time they wake up, until the moment they go to bed. This activity helped me to understand how these people relate their current routine to their perception of everyday life stress.

2. **Relation to past experiences: How do you usually feel and behave under stress?**

   Participants expressed the thoughts, feelings and sensations they typically experience while dealing with some of the situations shared on the timeline. This activity evoked the participants' self-awareness, or the consciousness we have of our own feelings, perceptions, intentions, behaviours and actions, by asking them to reflect on their feelings and common behaviours when facing stressful situations.

3. **Expectations for the future: How do you envision yourself dealing with these stressful moments?**

   The participants expressed their expectations for better understanding sources of stress, and discussed alternatives that could help them better deal with those situations, such as task prioritization and sharing frustrations with a colleague (see Appendix A for a more comprehensive overview).

Figure 10. **Co-creation activities.** By combining their timelines together, participants could visualize similarities and connections between them, such as when stress is perceived and how it is distributed throughout the day.

The three timelines created presented similarities, which is logical since all participants worked for the same company, and all in administrative positions. One similarity relates to how stress was perceived throughout the day, initially building up in the first hours of the morning when they rush to work, and reaching its peak in the afternoon with the end of the workday approaching (see Figure 10).

Participants individually plotted their daily activities on a line chart. Even though the representations looked alike, their meaning and intentions were different. One of the participants' line chart illustrated their level of energy and productivity throughout the day; others represented how they perceived the day from an emotional perspective. They also associated these variations in energy, productivity and emotion with factors that can cause stress that they had noted in their earlier work on their timelines, such as feeling overloaded, disagreements between team members during meetings, or feeling the need to prioritize work over personal life.

It was in the evenings that most activities to reenergize and destress happened. These included a mix of physical activities practiced in groups and individually, mental activities such as reading and cooking, as well as social and emotional activities, such as sharing time with friends. It is important to note that these patterns may change throughout the year. As this research took place in the summer, sometimes participants ate lunch outdoors, which was an opportunity for de-stressing moments during working hours; the same might not happen very often during the winter.
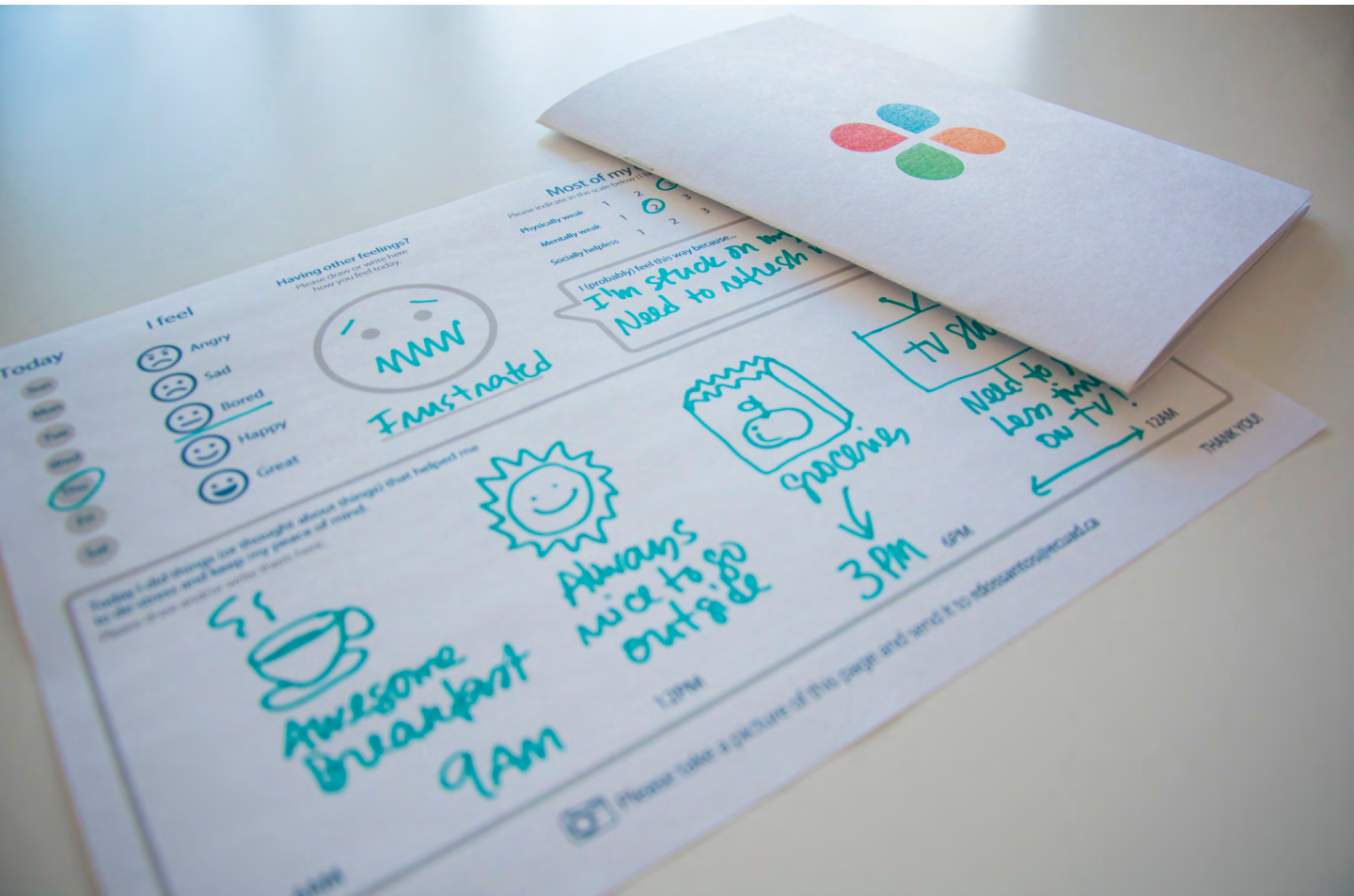
Figure 11. **Journal booklet.** Copies of this journal were distributed to research participants from Vancouver and Montreal.

Journaling research

This journaling research took form as a print booklet designed to encourage participants to write and draw their reflections about how they perceived their day (see Figure 11). Over the course of one week, participants indicated:

1. How they perceived their lives from an emotional, mental, physical, and social perspective;

2. The possible reasons for such feelings; and

3. How this mindset led them to actions and behaviours that might have helped them to alleviate stress and keep their peace of mind.

These journals encouraged confidence in self expression, enabling a deep connection between people and their stories. Based on the information provided by the participants, these journals worked as an instrument for channeling their observations about their inner and outer worlds. This leads me to think that the purpose and context in which the journal research was introduced favoured a personal and intimate reflective space not only regarding work-related stress, but also everyday life (see Figure 12 on the next page).

Journal booklet

Figure 12. Journal booklet annotated page. Each participant received a journal booklet containing seven identical template pages that they were to fill in at a time and place of their convenience.

Today

Sun
Mon
Tue
Wed
Thu
Fri
Sat

I feel

Angry
Sad
Bored
Happy
Great

Having other feelings?
Please draw or write here
how you feel today.

Today I did things (or thought about things) that helped me
to destress and keep my peace of mind.
Please draw and/or write them here.

6AM   12PM

Please take a picture of this page

Most of my day I've been...

Please indicate on the scale below (1 being the lowest and 5 being the highest).

Physically weak	1	2	3	4	5	Physically strong
Mentally weak	1	2	3	4	5	Mentally strong
Socially helpless	1	2	3	4	5	Socially helpful

I (probably) feel this way because...

6PM   12AM

and send it to **rdossantos@ecuad.ca**   **THANK YOU!**

1. Indication of how individuals perceived their lives.
   Participants of the journaling research could draw and/or write their feelings and emotions on the pages of this journal booklet, as well as indicate how they perceived their physical, mental and social aspects of their lives.

2. Possible reasons for the indicated feelings.
   Participants could express their thoughts about how they felt in a given day.

3. Awareness of activities, actions, thoughts and behaviours.
   Participants could also draw and/or write a timeline of activities, actions, thoughts and behaviours they had engaged in during the day in order to de-stress. Some of the participants, however, used this area to state a few stressful situations they had experienced.

When I started receiving the first filled-in pages of the journals by email, I noted that participants were likely to express their feelings by drawing their own emotion icon (see Figure 13), rather than selecting one of the five examples I provided as a conversation starter: Angry, Sad, Bored, Happy, and Great.

Similarly, they all took up the idea of expressing their thoughts and activities on the daily timeline through drawings, instead of just writing about them. Some drawings supported an idea in the written text; others complement the text with additional information. Either way, the images added another layer of meaning and openness to interpretation.
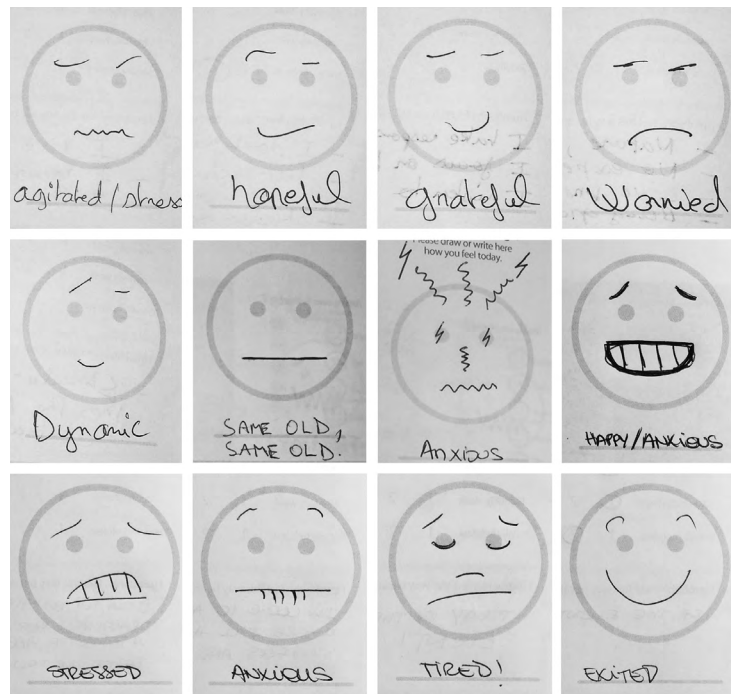
Figure 13. **Examples of reported emotions.** Participants were likely to express their feelings by drawing their emotion.

Observations on the design
of the journal booklet

The journals achieved their goal of eliciting responses that were mindful representations of the participants' feelings, behaviours and actions. However, there are a few areas for improvement in future versions, specifically in the instructions given and the presentation of content.

An example of this would be having no pre-defined emotion icons on the journal template, or categorizations of any sort, such as emotional, physical, mental, and social. This way participants could to approach the journal from a more spontaneous mindset; the icons were important to trigger self-reflection, but in some cases seemed to limit participants to just choosing one of them.

At the same time, the journals should not be too open ended. A workable compromise could be to provide them with questions that trigger initial reflection without calcifying their self expression. For example: What was the most special moment in your day?

As the research tool was a printed booklet, it was expected that participants' responses would be text and drawings. In future versions of this research, participants could be provided with materials that facilitate other forms of expression such as verbal, gestural, or photographic.

Participatory design research analysis and further reflections

Bricolage is a term described by French anthropologist Lévi-Strauss (1966) "as a way of combining and recombining a closed set of materials to come up with new ideas" (Turkle, 2007, p. 4). This concept reflects well the sentiment of this participatory design research analysis, and further steps in the following RtD section.

While individuals' perceptions of their feelings directly related to their possible sources of stress, the stories—represented through actions and behaviours described in the daily timeline—provided information that was richer than a literal representation of what was done in the day and when. This triggered my attention and interest for diving into these stories (see Figures 14–16 on the following pages).

The shared stories did not only relate to the participants' actions and intentions to destress, they also contained what seemed to be further sources of stress. The participants had ignored the explicit purpose of this field, and created stories that incorporated what was significant to them. They illustrated moments of stress, anxiety, and anger, but also joy, desires, and remedies in the form of individual self-care, social

gathering, and social support. These individuals generated powerful narratives capable of creating an environment for reflections about their own activities and feelings facilitated by self-expression.

Reflecting on our everyday experiences can make us more self-aware, and mindful of the moment and the narratives we live. The stories shared in the participants' journals indicate that the time they committed to the research created opportunities for introspection. They reserved a moment in their day, and expressed—consciously or not—their capacity and willingness for developing self-awareness in their own lives. Walker (2011) claims that "tacit ways of knowing can be perceived internally, felt and recognized, but cannot be adequately described or expressed in words" (p. 164). By creating a moment for introspection, for reflection on how we feel and how we perceive our daily experiences, we are also accessing a tacit knowledge that conveys who we are, and who we want to be.

Ultimately, this way of thinking suggests we should embrace the knowledge we build through our daily actions, and through the stories we live, tell and envision; what would we change if we were more mindful of our everyday life experiences? These insights nudged me to develop an introspective meditative drawing practice as a method for searching for awareness of my inner and outer worlds. What started as a personal practice during the summer of 2016 completely influenced my RtD process, making me perceive and reflect on everyday life stress from different perspectives, in context with individual values and philosophies, and how these are expressed in—and influenced by—our surroundings.

Figure 14. Research analysis wall. Even though the co-creation and journaling research were conducted with no inter-dependency, the data collected from both was aggregated for analysis. With this in mind, every text and drawing entry in the journals was transcribed to sticky notes. These notes were aggregated and displayed in different ways, allowing for different interpretations of the data. One of the last variations displays the actions and stories shared on the journal timelines on a 24-column matrix, with each column signifying one hour, allowing a holistic view of the participants' days.

ZZZZ!!

"take care of my physical appearance"

"meeting psychiatrist"

"Chatting on Social Network"

"Walking (to)"

"Up in the window"

"Walking (Watch habit)"

"Steam Room (Sauna)"

Flexibility, feelings of practical value truthful / honest teamwork

"Vietnamese Sandwich"

"Walking by the beach"

Random dancing or conversation (involvement)

Burger at new restaurant

Task prioritization for the work & Scheduled Discipline

Practice Discipline

"Cook steak"

"write some letters"

Talk about problems to my parents or for free time

Lack of value, Pressures against value system, spinning wheels, lack of discipline

Need to connect with family

→ Angels Movie @ theatre

"Pasta Restaurant"

"Walk @ the park"

12 PM   6 PM   12 AM

"Hard time making a decision"

LUNCH

"Check some (Happy Hour?)"

"I painted a little bit today. I'm amazed how happy!"

"Painted a little bit"

My Bestfriends ♥

FOOTBALL / SOFTBALL

"talked to my sister"

Ate dessert watching friends (TV show)

HIGH ENERGY & PRODUCTIVE

"Pause for Lunch 'Phew!'"

organize all the things I had to for the event through ...

"Bad Pizza & Breakfast"

"Still have to do my luggage"

ZZZZ

"talked to family members about the dream"

Feeling stressed about how quickly the day passes by

"work work work"

wrapping up the work for the week + feeling down and re prioritizing unfinished tasks

Dinner with the family "not really alone"

feel like napping but don't

good @ yellow at

"to do list"

slept until late

"one more chore (online course)"

Podcasts

Headphones

Music / background noise

Exercise class

deep breathing exercise

Talking it out - going to ... went to the ... with colleague

Peer to Peer conversations

Get away from your computer

task prioritization

"organize my luggage"

"Had a nice and balanced lunch"

"I need some vegan food"

"I forgot my lunch box"

"yummy lunch break"

"my presentation went so well"

Plan cards and talk to my family

"Hot and Raining or not"

ZZZ

"get some A/C"

ZZZ

BOOKS

WORKING ALONE

RUN

COOKING

"late lunch WORKING TOGETHER went to the coffee shop"

HUNGRY

"burn ... back home"

"Movie night with families and ice cream"

"spent the night out with families and friends"

"I want to the pool and finish reading that ..."

TIME

ZZZ

GMAIL "yummy lunch break"

walk

YOGA

"I feel like a red blade but it feels good!"

Journal research data visualization

This data visualization was designed based on responses gathered from the journaling research. It shows the aggregated information on how the participants perceived themselves from emotional, mental, physical and social perspectives, as well as the volume of activities they performed during one week.


Figure 15. Visualizations of the journaling research. The participants' activities and plans to destress are here displayed in relation to time and their informed emotions.

Participants' emotions.
Aggregated emotions of how the participants of the journal research felt during the week.
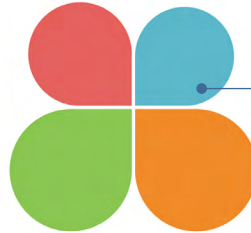
Self-awareness chart.
Chart representation of how participants of the research perceived themselves from an emotional, mental, physical and social aspects of their lives.
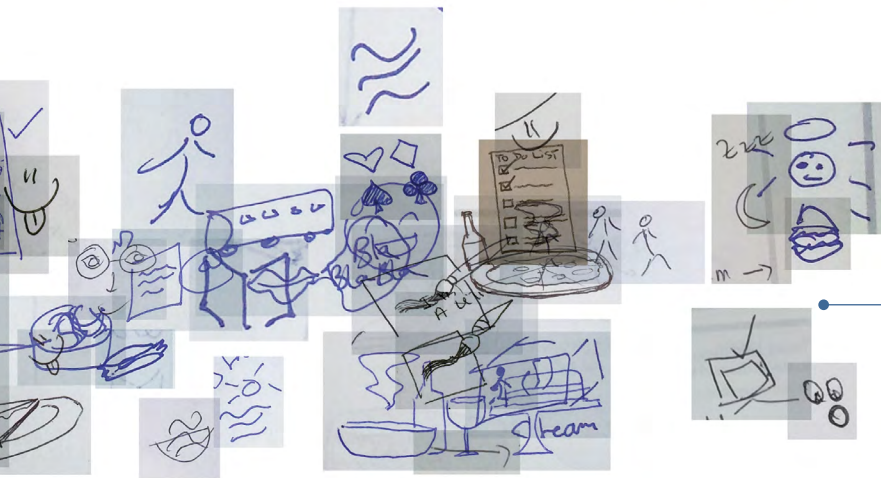
Drawing representations of activities.
Participants' drawing expressions of the activities they have done during the week with the intention of de-stressing.
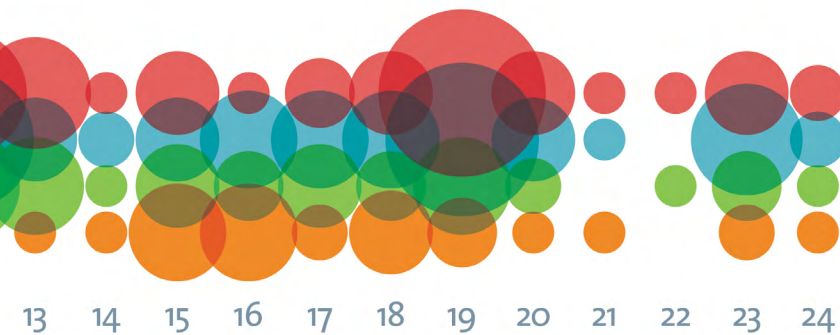
- Emotional
- Mental
- Physical
- Social-related activities

13 14 15 16 17 18 19 20 21 22 23 24

Activities per hour.
Volume of one week of activities displayed per hour of day.

43

Journal research data visualization (cont.)

Figure 16. **Aggregated journal visualizations filtered by emotion.**
1. Stressed;
2. Worried and tired;
3. Balanced, anxious, same old and impatient;
4. Grateful, dynamic, excited, hopeful, anxious but happy;
5. Feel great.

WORK WORK WORK

TO DO LIST

WAKE-UP LATE

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Grateful
Dynamic
Excited
Hopeful
Anxious but happy

WORK WORK WORK

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

2.3
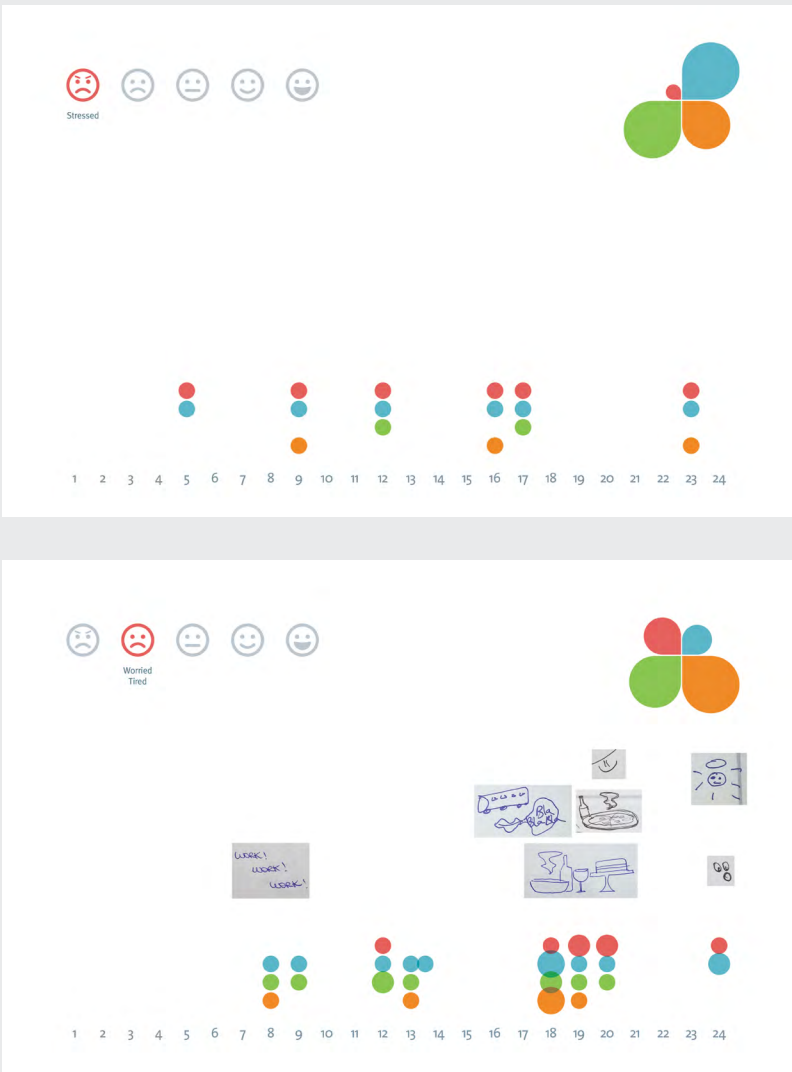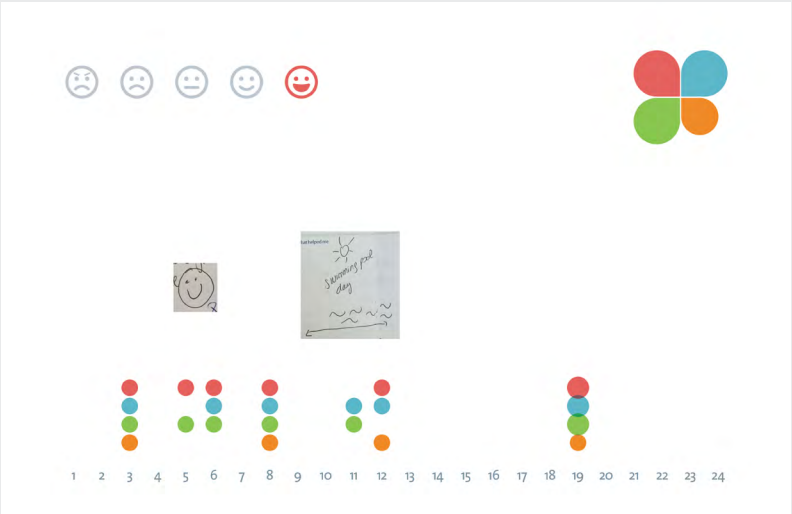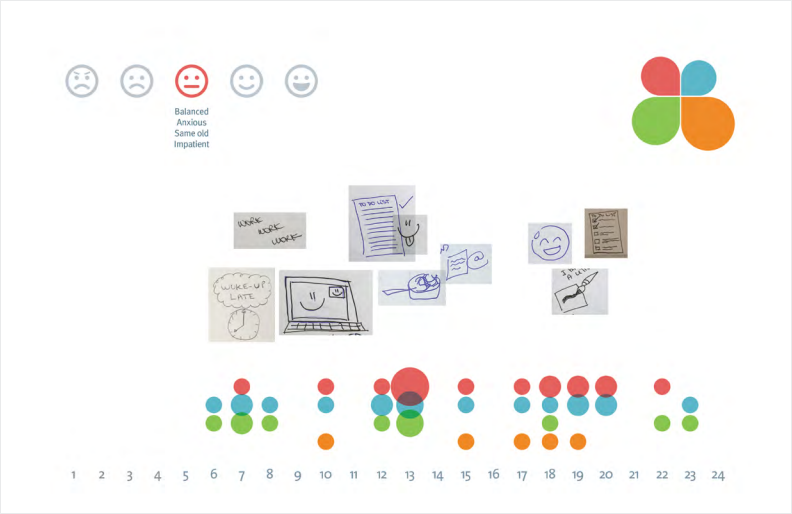
Drawing
meditations
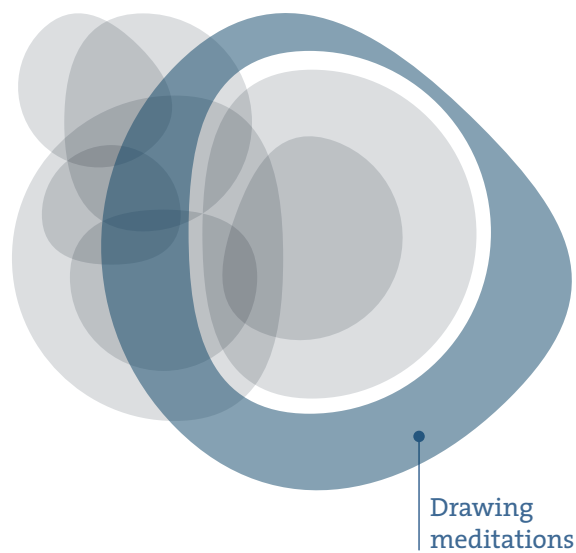
Figure 17. Drawing meditation
practice diagram. What started
as a personal practice, became
an integral part of this design
research.

Drawing meditation and my personal search for mindful experiences

During most of the summer and fall of 2016, I engaged in a personal meditative and expressive drawing practice routine that I developed. It consisted of focusing my attention for a few minutes on my own heartbeat as a way to connect to myself (see Side note 2 for details about the *Heartbeat Drawing Meditation Practice*). In this way, my heartbeat became my very personal meditation mantra and paying attention to its rhythm could evoke a calm state of mind. Noticing the frequency of my own heartbeat during this practice reminded me that our bodies are intrinsically resilient; we have the power to adapt ourselves to different situations, to different environments, and to different contexts.

Side note 2. Heartbeat Drawing Meditation Practice instructions. Pay attention to your own heartbeat and feel its rhythm. On a blank paper or canvas, start drawing what this rhythm suggests. Let it evoke gestures without any restriction or judgment regarding form, intensity, or meaning. Nothing needs to be rationalized, just listen to the musicality of your heartbeat. If thoughts or sentiments comes up, express them with free gestural drawings.
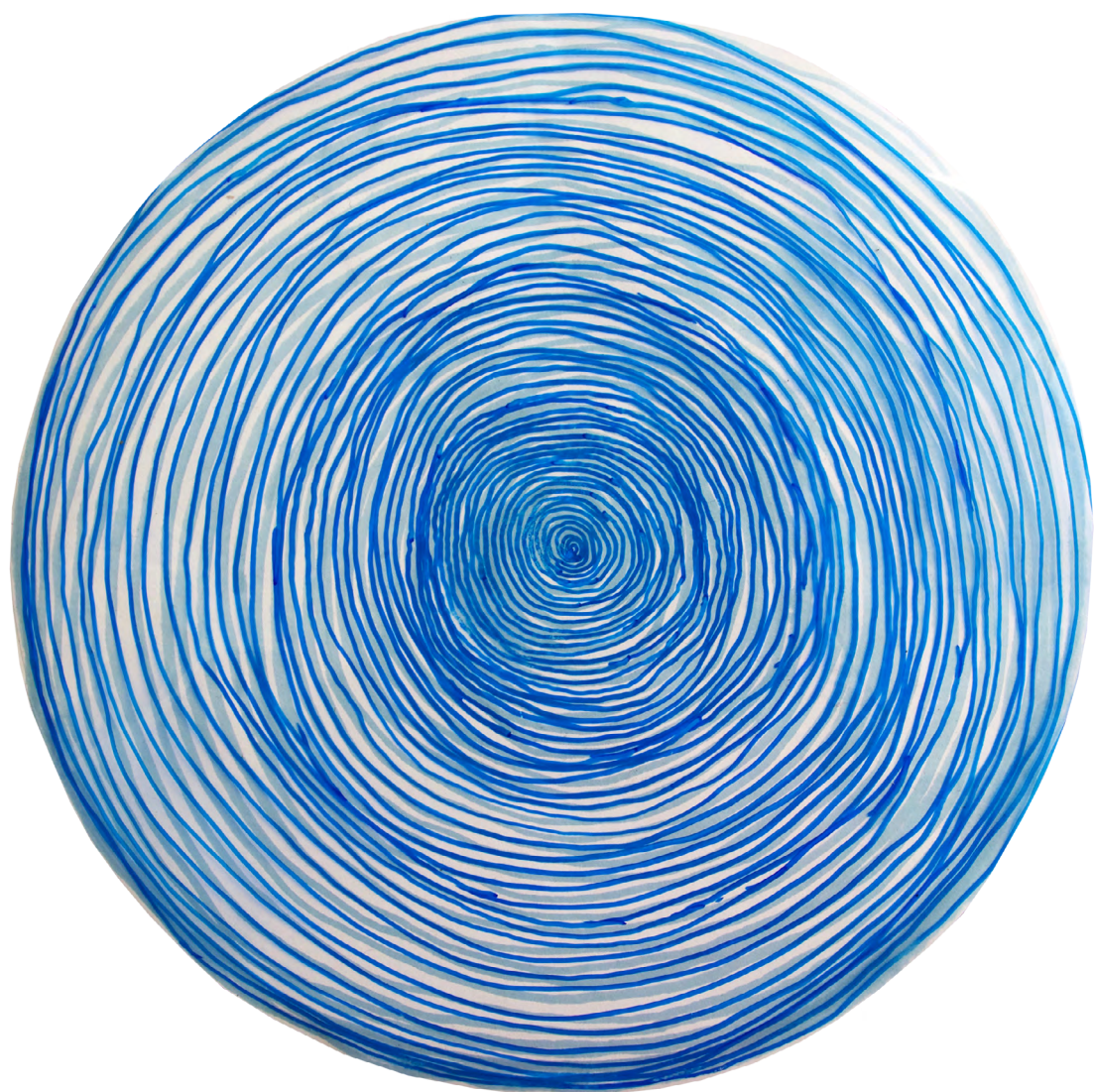
Circles and spirals

Most of the drawings I made during the meditation took either the form of circles or continuous spirals. Even though both types of drawings looked very similar at the end, they had distinct processes and meanings. The drawings of circles (see Figure 18) came after my observation of the ring formations seen in a section of a tree log. These rings create a visual pattern that expresses the stories lived by that tree; they create a type of experiential log that shows how the tree experienced life.

In the book *Intelligence in Nature: An Inquiry into Knowledge*, the anthropologist Narby (2005) says that plants make informed decisions in life by "computing what is actually going on, then mak[ing] appropriate responses in terms of what they perceive" (p. 87). Factors to which they are exposed in life, such as dry and wet seasons, abundance and lack of light, wind, minerals, as well as interactions with other species, make them "adjust their structures to optimize their ability to exploit what they find" (Narby, 2005, p. 88). Fundamentally, tree rings are rhythmic on their own and can imply persistence, plasticity and resilience. As humans, we also exercise plasticity and adapt ourselves to the situations we live everyday, but on a much faster time scale (Narby, 2005, p. 94).

Figure 18. Personal drawing meditation (circles).
During the drawing of these circles, there were moments when my right hand covered the path it would take on the paper. Sometimes it covered the beginning of the line, as if there were no clue that the circle would end up closing. However, if I carefully selected the point to start drawing the ring, or if the drawing line was traced in a less comfortable direction— clock-wise for me—I would have a clearer trajectory, as I had planned the activity in advance. The first times meditating were about adaptation; the more experienced I got, the more comfortable and fluid my drawings became.

Duration of meditation: approximately 20 min.
Marker on acetate and paper, 30cm diameter.

Reflecting on our actions in life and how we react to the events that occur in our surroundings, we can better ponder our choices and behaviours, and understand ourselves better. Past and current experiences influence how we feel and who we are today. Following the analogy of the tree, the most recent rings are formed over previous ones: they receive the shape of their inner world from preceding rings, and yet are also shaped by the interference of the outer world, such as the place they are located at and the things that sit by them. In order to understand one ring, we should not only see it individually, but also in context to the whole, including the environment they are in.

For Taylor (1991), "self discovery requires poïesis, making" (p. 62). By making and immersing into a meditative drawing practice myself, I opened a personal space for developing introspection and self-awareness. It allowed me to access thoughts and reflections about the present moment and personal aspects of my life that I might have not reached otherwise. According to Walker (2011),

> Creative activities demand deep immersion in process. These concentrated forms of engagement have been referred to as focal practices or flow and they are akin to spiritual exercises that cultivate single-pointed attention, and at-one-ment. (p. 164)

It seems to me that these reflection moments have been guided by the act of creating and continually working on the meditation drawing practice itself.

Unlike the concentric circles, the continuous spirals I drew as part of my meditative drawing practice allowed a smoother flow across the evolving loops (see Figure 19). Every loop could symbolically represented a new cycle, a new story that takes a

Figure 19. **Personal drawing meditation (spirals).** In this meditative drawing, the innermost spirals were where I was most focused, compared to the middle section the process. When, by the end of the drawing, the pencil approached the margins of the paper, my focus would return to accommodate the spacial constraints. This has created a tight-loose-tight loop pattern in most of my spiral drawings. Additionally, the space on the paper closest to my body is wider than on the opposite side; my body became then an interfering element in the advancement of the spirals.

Duration of meditation: approximately 30 min. Marker on paper, 30cm diameter.

day, a week, a month to develop. It could also mean another iteration of meaningful moments in life. What stories are told in each loop? The sense of reflection intrinsic to each of these questions creates a type of *action-reaction* experience that accompanies individuals living these stories. For Taylor (1991), "Identity is *who we are*, and *where we are coming from*" (p. 34), and we define it through our capacity to understand and express ourselves (p. 32). Where the loops originate from, and how we act and react toward the stories represented in each one of them, builds up our identity.

The reflections sparked by the drawing meditations are represented in my RtD process. What started as a personal practice in the last year became inherent to the design process adopted in this thesis. Arrien (1993) explains that

> Meditation is an opportunity to discover, uncover and recover aspects of ourselves… it accesses symbols, memories, and associations; it functions as a bridge between the outer and inner worlds and it reveals the divine creature that we are. (p. 88)

My drawing meditations informed my thinking on the importance of visualizing our own life stories with a more intimate and authentic means, neither seeing only the specifics, nor the broad context of these experiences, but both.

Figure 20. **Ring patterns as a form of visualizing life stories.** The ring formations seen on a cross-section of a tree log represent a type of life journaling activity, illustrating how they reacted to various situations and embody their stories over a lifetime.

Figure 21. Meditative Elm Disk. Making this disk was rewarding-frustrating-rewarding. Rewarding because working on and vectoring the rings of this cross-section of an elm tree was a meditative experience by itself; frustrating when finding out that I would need to manually sand it after having it machine engraved; rewarding again when immersing into the tactile experience that this manual work provided me, brought up sentiments of acceptance, perseverance, and accomplishment. Both rewarding stages of this design process were those introspective moments in which I dove into a mindful interaction with the elm disk. I call it *Meditative Elm Disk* for its capacity of making me immerse into a meditative practice while working on it, and sparking moments of visualizing new perspectives of the stories I was currently facing.

Duration of meditation: approximately 3h.
Machine engraving on elm wood, manually finished with sand paper. 30cm diameter by 7cm high.

HeartBit
wearable device

Inspired by the *Heartbeat Drawing Meditation Practice*, the *HeartBit* wearable device is a glove that lights-up a set of LED lights according to the pulse of the person wearing it. The intent of this device is to remind wearers of their own heart rhythm each time they see the lights flashing and, ultimately, to visualize how this rhythm reacts to the situations we face everyday.

I wore this glove for a few days and, during this experiment, I questioned if I was becoming more aware of my physical and mental responses—i.e., if this device could make me more aware of how my heart responds to external events. Simple everyday actions such as running to catch the bus or relaxing at home were emphasized by the flashing lights. Through them, I could visualize my physical response, and be mentally triggered to either keep or change personal rhythm.

After a few hours of use, I noticed that the enhanced awareness that I had initially developed seemed to be temporary. The flashing lights were now integrated into my routine. Perhaps I was sub-consciously interacting with and being influenced by them. The consequences that the *HeartBit* device could bring if I wore it for a longer time are unknown to me. What changes would I consciously or sub-consciously make to accommodate it in my life? What would its impact be on my physical health and behaviour in the long term?

Figure 22. HeartBit wearable device. This device connects a Pulse Sensor device to a LilyPad Arduino. A set of LEDs displayed at the end of a 1m cord flash in synch with the user's pulse.

Research
through
Design

Journal Sculpture
Lifetime Scroll

Holistic
visualizations
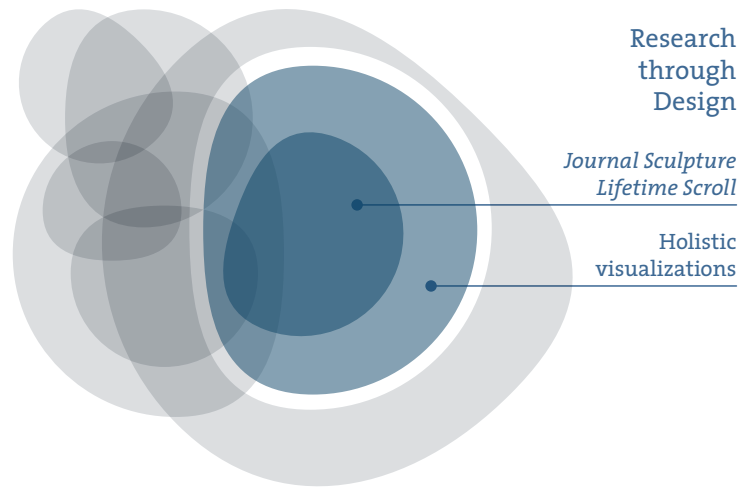
Figure 23. Research through
Design diagram. The process of
design and analysis of the *Journal
Sculpture*, *Lifetime Scroll* and
holistic visualizations.

Research through Design

I kept up my drawing meditation practice while engaged into the RtD process. In some moments, they became almost intertwined practices, making it difficult to identify when one would give up space for the other. In this way, this section can be seen "both as process and outcome," and the artefacts presented here are not "utilitarian solutions," but "holistic expressions of human meaning in a continually evolving field of understanding" (Walker, 2011, p. 166).
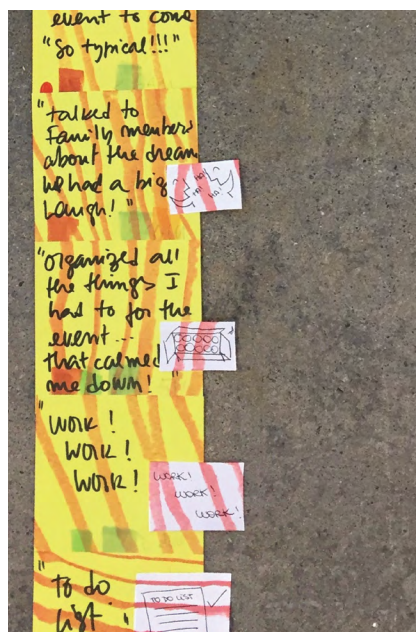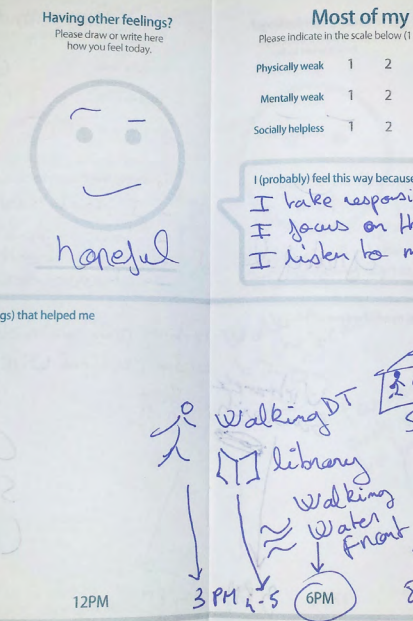
Journal Sculpture and *Lifetime Scroll*

In order to visually and conceptually integrate the partici-patory design research with my personal search for mindful experiences, I performed a drawing meditation over the wall that I used to analyze the data gathered from the par-ticipatory design research. This drawing meditation per-formance started with tiny spirals on the centre of the wall and soon evolved to wide gestural loops (see Figure 24). This new drawing directly overlaid most of the sticky notes that carried the transcriptions of the stories shared on the co-cre-ation and journaling activities.

In addition to individuals' stories transcribed through text and drawings, the visual patterns resulting from the medita-tive drawing performance added another layer of abstraction to these sticky notes. This performance created new and permanent marks that made the everyday stories even more unique; each note became an authentic designed artefact.

Once those stories were released from the wall, clear, un-marked spaces became apparent on the wall underneath where each sticky note had been. If stories and experiences can create distinct marks in one's life—here represented by

Figure 24. Process of making Journal Sculpture artefact. Even though the influence that the meditative drawing practice was having on my project was implicitly relevant to me, this drawing meditation performance bridged the participatory and the RtD processes.

Figure 25. Journal Sculpture **artefact.** Walker (2011) asserts that we can affect the creation of tangible artefacts by adding value and depth of meaning (p. 163). The actions, feelings and thoughts shared in the journaling research became an embodied journal sculpture from which stories could be recalled with the aid of a few visual cues and by memory.

the sticky notes—discarding these experiences can reveal missing pieces in the puzzle, and highlights how such life events are essential to composing the identity of a person or group. Attached in a line, one after the other, the stories were then rolled up until they became a spiralled cylinder. The core of this cylinder was formed with participants' reflections on their feelings, while their everyday stories evolved around that core. These stories were arranged in a way that the most recent ones appeared on the outer and most superficial layers of the cylinder.

The *Journal Sculpture* artefact is made of several daily stories and my reflections on them (see Figure 25). Its continuous and evolving aspects are now part of an aggregated structure in which every new loop can be a new iteration of moments and aspects of our lives. Its continuous revolution, suggested by the spiral form, allows the stories to be revisited, reconsidered, and evolve through incremental layers of knowledge. For experiential learning theorist Kolb (1976), every iteration of a subject can form the theory behind new learning experiences:

> Learning is conceived of as a four-stage cycle. Immediate concrete experience is the basis for observation and reflection. These observations are assimilated into a theory from which new implications for action can be deduced. (Kolb, 1976, p. 21)

This theory of learning reinforces the idea that everyday stories can ground human experiences in a continuous and evolving learning structure. With this in mind, how can we mindfully connect with different aspects of our everyday life

experiences? Would journalling our feelings, perceptions, intentions and the actions we take in life make us more aware of the things we experience today?

Unwinding *Lifetime Scroll* allows people to access life memories—and the feelings associated with them—and create an introspective moment (see Figure 26). With this artefact, whenever a new story needs to be written, we should scroll back to the present moment and incorporate the new experience on the end of the thread. Manzini and Till (2015) suggest that being resilient is "learning from the experience" (p. 9) of the situations we live through. In this case, is the movement of going between observations and reflections of our own life experiences, and being present and focused in the moment, therefore, an exercise resilience in life?

It is important to notice that whenever we reflect on previous experiences, the connections we make to retrieve such memories seem to skip over the linear representation suggested by a scroll. That being said, *Lifetime Scroll* became an artefact for recalling and contemplating stories from a linear perspective. This been said, how can I create a system flexible enough to allow a variety of self-expression methods, and easy and unobtrusive enough to integrate into many people's lives?

*Figure 26. **Lifetime Scroll artefact.*** New stories and reflections could be added to the end of this long spiral thread. Unwinding it can reveal a trajectory full of choices, decisions and learnings.

great play session
Work 2.5h Autism Job
Vancouver Kids books
baked cookies

Watching netflix
Watched a movie
Coffee w husband
Listening to the radio
made fritata

Baking around
(calling friends)
Browsed the internet (you way long)
Went for a bike ride along the seawall — so beautiful a day!
Slept in on my day off
Had coffee and lunch
Went shopping and got beers with my roommate very fun!

Organizing my closet
Watched presentations with my peers
Behind to coffee
WATCHED NETFLIX- BUT DIDN'T HELP TO OFF-STRESS JUST AVOIDED THINKING.
CHATTED WITH FRIENDS

Went to a comedy show with friends
IKEA & book: CLEANING THE HOUSE

FEELING OF ACCOMPLISHMENT SLEPT LATE
THE BLESS OF ACCOMPLISHMENT
Had dinner yesterday
HAD GUESTS OVER
talked to a friend
SEX took 1st year
GREAT TOOK TOUR. Hot night Born! unusual

MEET NEW AT L AND SHARED STORIES.
Work to Swim to see some art
LARGE NIGHT DRINK. A CAMP FIRE...

Watched a coffee in my dream
Friend to coffee w husband
Good luck
Cake time!
kids

Holistic visualizations

What if we could have a simultaneous micro and macro visualizations of our own lives? Would a type of holistic visualization challenge us to put our current experiences into perspective? Tufte (1990) says that "micro/macro designs enforce both local and global comparisons and, at the same time, avoid the disruption of context switching" (p. 50). The rationale behind the holistic visualizations was to suggest that looking back on our life stories can provide moments of introspection. These are micro views of the specific moments that have had great impact on what we have become and how we behave today. However, they can also hold macro visualizations with time-frames that reflect experiential moments—childhood, school years, travels, relationships. By looking back at our stories, would we be able to visualize the connections between those that mattered and contributed to the person each of us has become?

Following the *Journal Sculpture* and *Lifetime Scroll* artefacts, I designed a set of holistic visualizations (see Figures 27 and 28) that rely not only on lines of text and images to allow us recall stories. These visualizations can also be seen as an invitation to ponder how we situate the present moment in the

Figure 27. Heart and Sapwood visualization. Spiral visualization of life experiences in an analogy with the sections of a tree. The heartwood, or inner part of the log, represents the early experiences we have in life: initial steps, relationships, childhood, and adolescence. The sapwood, or outer rings, represents our more recent experiences. While in contact with our core knowledge, it is still in formation, interacting with the outer world.
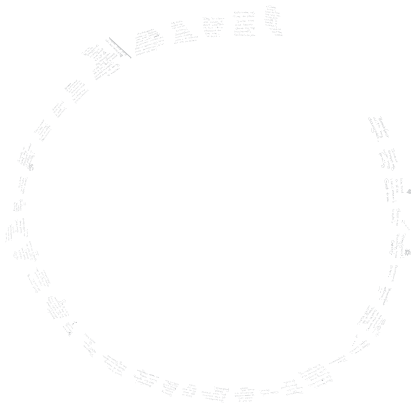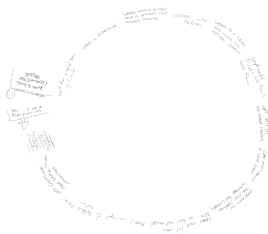
context of our life experiences, and to envision new stories to come. These artefacts and visualizations that I designed can also be interpreted as an open archive of life experiences.

In the book *Archive Fever: A Freudian Impression*, French philosopher Derrida (1996) concedes that "the word and the notion of the archive seem at first, admittedly, to point towards the past, to refer to the sign of consigned memory, to recall faithfulness to tradition" (p. 33). However, the archive also carries "an anticipation of a specific hope for the future" (Derrida, 1996, p. 72), inherent in the existence of the archive itself. This desire for and openness to the future is implicit in every new experience we face in the present moment.

How do we create a mindful environment so we can express ourselves, our perceptions and reflections of the experiences we have in life? The creative expressions that here take the form of written text, drawings and sketches should facilitate a self-reflective stage. For Taylor (1991), there is a "close analogy, even a connection, between self-discovery and artistic creation" (p. 61). A similar approach is usually taken with RtD, in which we expand knowledge and develop theory by transforming them into material expressions (Walker, 2011, p. 25).

Figure 28. Synergy visualization. Experiential moments are contextualized by their preceding stories and the implicit foundation of the future to come.
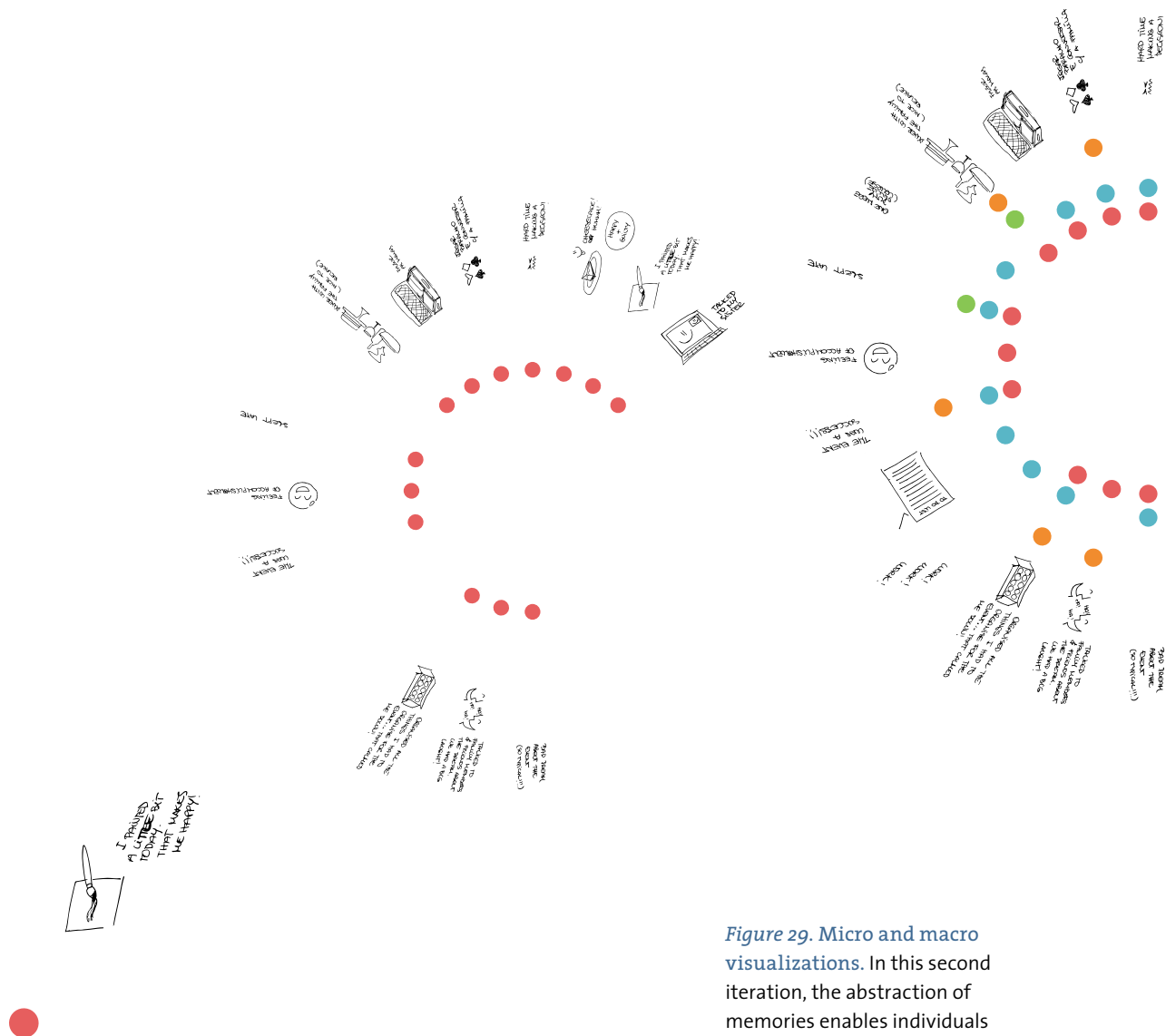
Figure 29. Micro and macro visualizations. In this second iteration, the abstraction of memories enables individuals to navigate from micro and punctual moments, to macro visualizations that show a broad view of life experiences. Each circle represents a period of time that carries specific stories categorized by emotional-, mental-, physical- and social-related experiences.
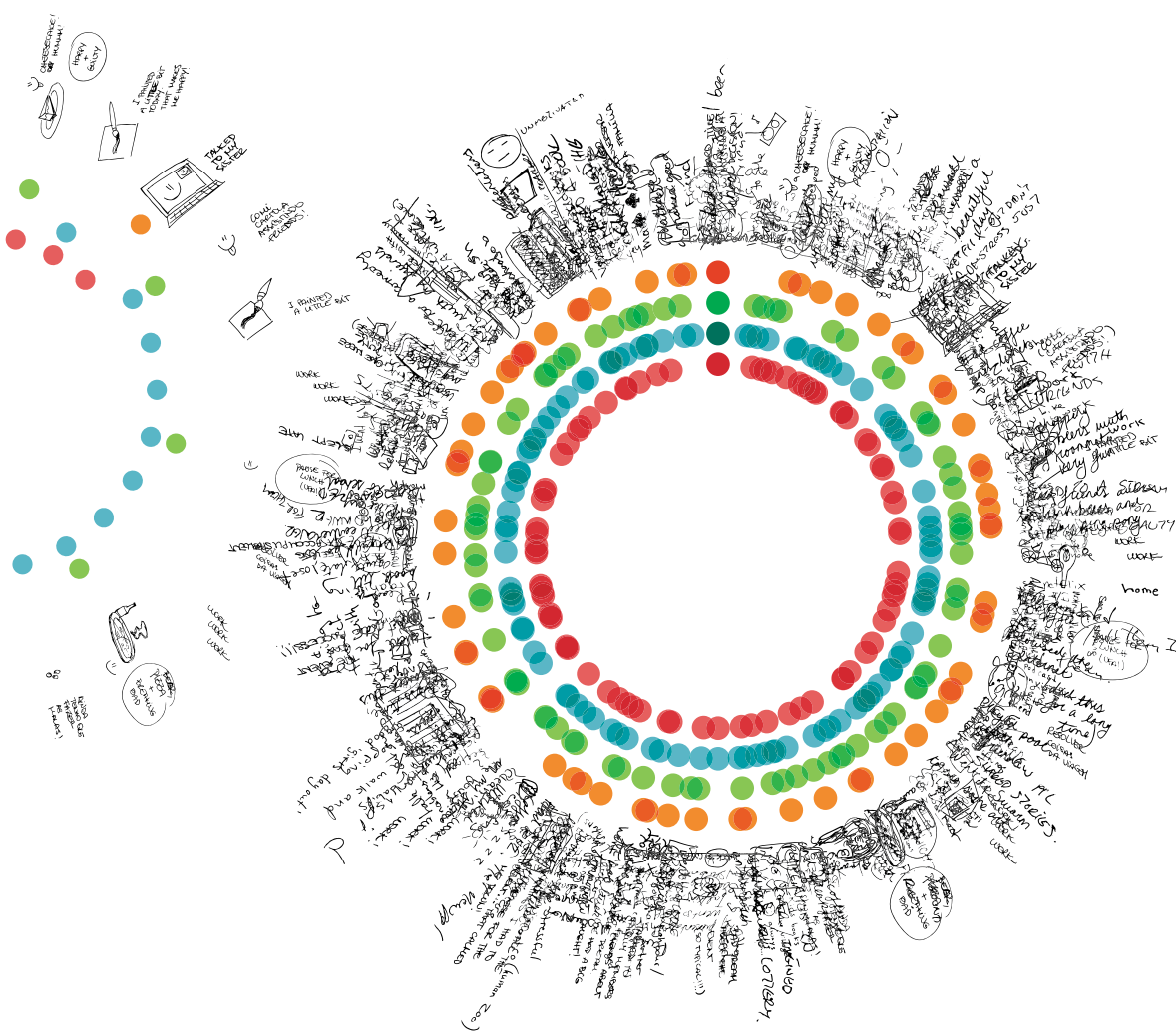
The emotional, mental, physical and social categories shown on these visualizations can trigger possible themes to reflect on, but can also constrain individuals' actions, thoughts and beliefs into simplistic labels of abstractions, into conceptual ideas. One can consciously state that his or her daily actions evoked a more "mental" than "social" experience, while others could see the act of labeling our experiences as simplistic, leading people to mindlessly associate these—or other—categories to events in their lives.

- 🔴 Emotional
- 🔵 Mental
- 🟢 Physical
- 🟠 Social-related experiences

3 Design outcomes

Based on the participatory design outcomes and RtD find-
ings, I have noticed that by reflecting on our life experiences
and how we feel about them, we can influence our actions
and behaviours today. Based on this, can we say that the act
of reflecting on our daily activities, and how we feel about
them, would make us more mindful of our life experiences?
Or even lead us to be more mindful and conscious of our
present moment?

Over the last months, I have been working on ways to create
holistic visualizations of individuals' lives. These are not only
representations of past experiences displayed in circular and
spiral formats, they are also an invitation for continuous
iterations on our own life experiences. As with Derrida's view
of the open archive, this expressive and reflective environ-
ment should not only represent the stories that have already
passed, it "should call into question the coming of the future"
(Derrida, 1996, p. 33) by acting as a form of envisioning the
future in every new experience we live.

WORKED ON PRESENTAT...

I PAINTED A LITTLE BIT

WORK WORK WORK

My presentation went so well. Talking, working all day about Doctoral student persistence

Reading on my way back on the bus

Workshop conference symposium

(which is also my thesis)

swimming pool day

CALLING BAD

MARKED DONE A COUPLE OF ITEMS ON MY "TO DO LIST"

Work, work, work

ain't no sunshine today

...like... and website... that appeals good!!

Come on! CAREFULL ASSESSING FRIENDS

HAD A NICE AND BALANCED LUNCH

random discussion with runner happened to be french the conversation lasted 4h!

I NEED TONES OF SUGARY FOOD

Sun woke me up

WOKE UP LATE (NEEDED TO REST)

Walking by the beach

Bunch of new research

+1 for our team mate got home late for the with hubby I thought.

+1 Lunch my lunch

TAKED MY SISTER

Lost my hair and make up done

Walk at the park

Pasta restaurant

(Vietnamese Sandwich)

Meeting psychiatrist (group medical visit)

Chatting on social network (WhatsApp)

Steam Room (Sauna)

take care of my physical appearance

half asleep my practices to my neighbors I'm the bus

Spend the night with hubby

I PAINTED A LITTLE TODAY THAT MAKES ME HAPPY

zzz hmm zzz

Bath

no such physical time to connect with

walked... water... shout

I quit theatre

movie night BOX

HAPPY + LUCKY

Hmmm

CHEESECAKE!!

looking Family and have dinner

My theatre

Walk down below

reading

Good pasta

No work rainy night Thank A/c

babbling like a baby

zzz

hmmm good pasta

feeling happy away from my work

yumm good pasta hmmm

Son is arriving

Woke up late (1:33) - got to give a coffee on my way / with a good laughing mood on the bus

DINNER WITH THE FAMILY (NICE TO RELAX)

HARD TIME MAKING A DECISION!

ONE MORE ONLINE COURSES

hah I said I perfect Sunday I went bike ride and very very very... run

zzz

SLEPT LATE

HAD DINNER MADE SOCIALIZED

FEELING OF ACCOMPLISHMENT

Hot Meal

In this project, I intended to create a way for encouraging people to perceive and view their everyday life stories, memories and life experiences from different perspectives. According to Walker (2011), "through stories, we can find, express and recognize meanings, and it is one way of endowing inanimate things with significance and value" (p. 9). By expressing our own stories, we as individuals can deeply immerse in a mindful reflection practice in order to achieve clarity and understanding about them, and develop a sense of awareness of our own actions, behaviours and feelings. In this design research, the way I explored this idea was mostly though expressive drawing meditations and continuous iterations of new ways of expressing and visualizing personal life experiences (examples include the *Journal Sculpture*, *Lifetime Scroll* and the holistic visualizations). This body of design work and research that I developed and presented above subsequently led me to build *Design Framework for Creating Mindful Reflection Practices*, which should be seen not only as a framework for individuals interested in building mindful reflection practices in life, but also for designers who are creating for this end.

3.1

Express

Perceive
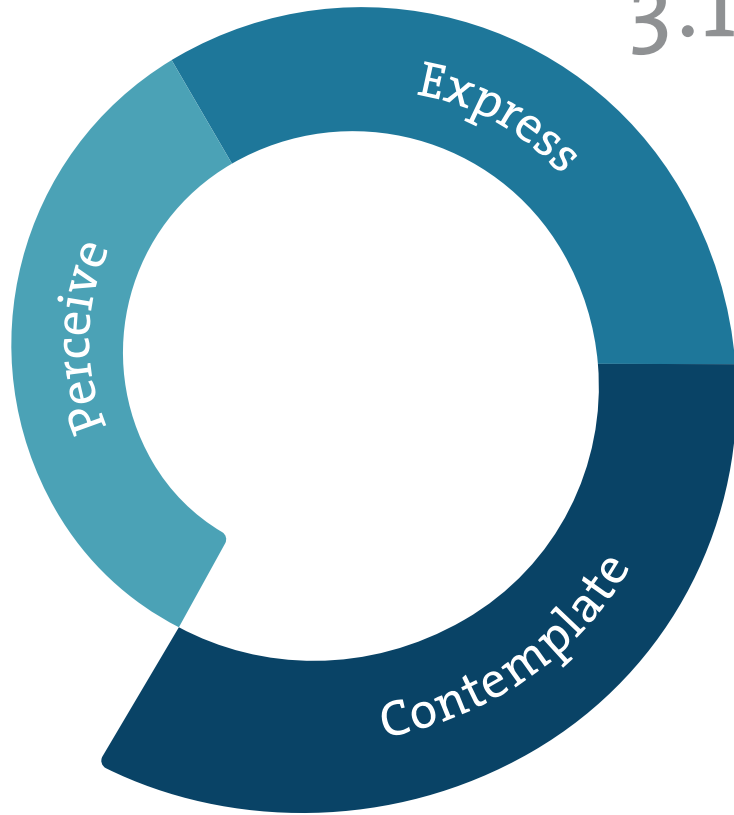
Contemplate

Figure 30. Design Framework for Creating Mindful Reflection Practices. Perceive, express, contemplate.

Design Framework for Creating Mindful Reflection Practices

This design framework is a model for designing and creating reflection practices through how we perceive, express and contemplate our everyday lives: we can perceive how we contemplate ourselves and our surroundings as an opportunity to ground ourselves in life experiences; we can express our perceptions, learnings and behaviours in a way that also manifests our cultural and individual values; we can contemplate what matters to us and our communities through the expression of our actions and decisions.

By committing to this triad, we create a cycle for developing resilience based on how we perceive ourselves in the context of the moment, how we express these perceptions, and how these two actions affect the way we contemplate and experience our lives. The act of reflecting while expressing our perceptions, i.e. through writing and drawing, or any other type of self-expression, can be a way to enhance our self-awareness and mindfulness about our life experiences. This is a moment in which we should not only ask ourselves "what mattered today," but also "how I can contribute to a better tomorrow and to a better self ".

# Design Framework for Creating Mindful Reflection Practices

Perceive
As a reflection of our external seeing

How can design artefacts help us see our life experiences from different perspectives?

To be self-aware involves accessing our inner and outer world by acknowledging that our values, experiences and culture contribute to the perspectives we take in life. Self-awareness also means that we should exercise our authenticity. For Taylor (1991), being authentic involves listening to our inner voice, and "being in touch with our moral feelings… as a means to the end of acting rightly" (p. 26). Ultimately, the idea of authenticity represents being attentive to ourselves, to how we interact with others and to how we act in life.
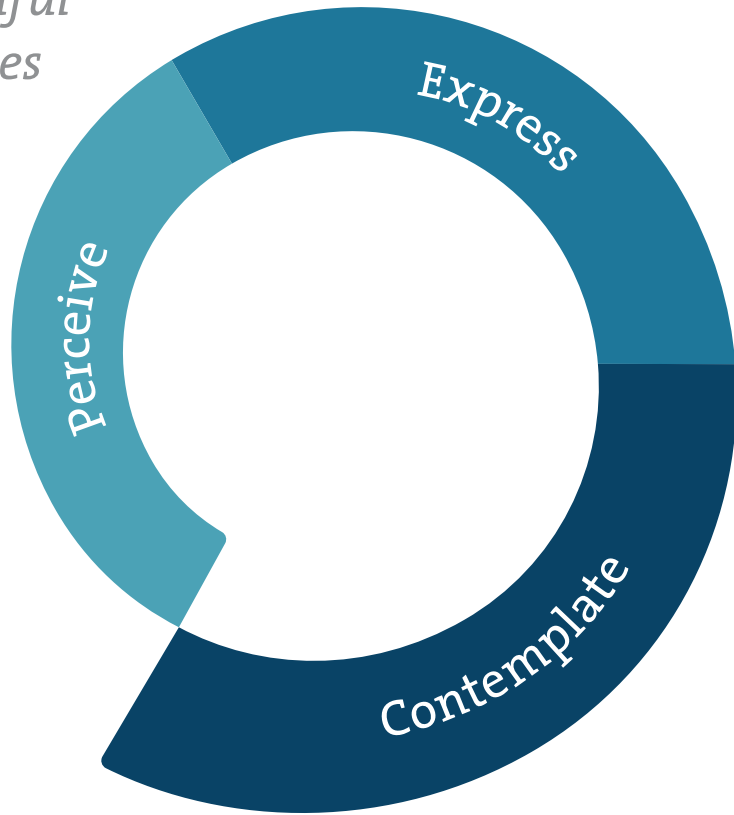
Action criteria

1. Design to value individual's identity so that we can express ourselves on the things we do in life.
2. Develop self-awareness to identify what our body and mind tell us about this moment—how we feel and see ourselves in context to time, space, people and things we interact with.

Express
The insights of our internal viewing

How can we create a mindful and expressive practice that generates insights from how we perceive our lives?

As humans, "we are capable of understanding ourselves, and hence of defining an identity, through our acquisition of rich human languages of expression" (Taylor, 1991, p. 32). With this in mind, we as individuals should be encouraged to express our perceptions, insights, and visions of our thoughts and ideas in a way that reflects our identity and life experiences. As an example, drawing, sketching and handwriting can be used as ways for embodying a gestural and performative self-expression, as ways for exploring tacit knowledge developed over the course of our life, while encouraging us to reflect on who we are and how we perceive and view our present moment.

Action criteria (cont.)

3. Enable the expression of individual's perceptions, insights and thoughts.
4. Encourage self-empowerment so that we can make the things that are meaningful for us, and act towards the person and place we want to be.

Contemplate
The holistic seeing

How can design artefacts create a holistic space for contemplating our life expressions: the actions we take, the decisions we make, and how these impact our life?

The visualizations of our life experiences can provide holistic insights into moments that have had great impact on who we have become and how we behave today. Whenever we are living through something that makes us reflect on the value of such experience, we can look back on our life story in order to put our present moment into perspective. As an example, moments of contemplation should allow us as individuals to be mindful and embrace—while being critical about—our own expressions.

Action criteria (cont.)

5. Design so people can put things into perspective and reflect back on those we have done and learned.
6. Enable critical thinking about our own decisions and the paths we take in life, and
7. Take moments to step aside from our own ideas, thoughts and views of the world.
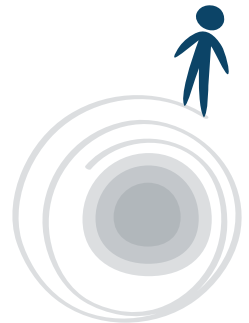
3.2

Insights and future directions

The *Design Framework for Creating Mindful Reflection Practices* represents an open invitation to develop resilience through a continuous search for self-awareness. This framework carries the potential to create opportunities for people to reflect on their built-in values, experiences, culture and other authentic aspects of life. However, how mindful would we be if we engaged in a reflective practice that fell into an automatic routine?

In addition, would the expression of our perceptions be considered an act of archiving memories? As Derrida (1996) questioned about the act of archiving, "can an experience, an existence, in general, only receive and record, only archive such an event to the extent that the structure of this existence and of its temporalization makes this archivization possible?" (p. 80). Assuming that the use of the proposed

framework results in designed artefacts, analog or digital, how reliant should we be on these artefacts in order to develop such an important behaviour in life?

If these artefacts suggest we engage in a routine of use, it is important to state that this routine should be motivated by an individuals' own determination to be effective. Otherwise, how mindful would we be if we were persuaded to engage in a reflective practice by any force other than that of our own will?

Valuing a mindful approach

One concern carried by this framework regards how to enable a regular routine of mindful reflection practices through designed artefacts without being intrusive or persuasive. After some time, people who take up the practice might lose interest, deviate from the intended purpose of the designed tools, or even lose the mindfulness aspect of the activity through the development of a habit. The more experienced we get in doing an activity, the more likely we are to systematize this process.

That being said, there is a chance that the design artefacts, objects and systems that are based on the *Design Framework for Creating Mindful Reflection Practices* be seen as persuasive. In their studies on the philosophy of design and how technology impacts our lives, Dorrestijn and Verbeek (2013) assert that "in the field of persuasive technologies, openness about the persuasive forces that are exerted upon people is crucial" (p. 47). With this in mind, I stress the importance of using this framework to create design propositions with transparent intents, permitting the people they address to decide whether or not to accept the patterns that are set up by the designed tools.

Enabling self-expression and self discovery

The *Design Framework for Creating Mindful Reflection Practices* approach would succeed if it impresses on to individuals the importance of developing self-awareness and a mindfulness of how we live and how we should embrace the different contexts we live in every day. It should be used to nurture design possibilities for developing self-awareness and mindful reflections through the creation of environments that Turkle (2007) would label as "evocative", which "catalyze self-creation" and "bring together thoughts and feelings" (p. 9).

Connecting with others

The *Design Framework for Creating Mindful Reflection Practices* was conceived to design an environment for individual self-reflection. However, this framework has a strong potential to create collaborative environments for collective awareness.

"Connecting with other people plays an important role in our lives and the impulse to connect—with others—is both a natural response to stress and a source of resilience"

Figure 31. **Interacting through drawing.** Collaborative drawing meditation practice I engaged with my wife as a way to reduce stress. This visual and gestural conversation started as an expression of our anxieties and frustrations, and slowly evolved to create a hope and joyful environment.

(K. McGonigal, 2015, p. 137). People under stress "who places their attention to the people they care about can change their own stress response" (K. McGonigal, 2015, p. 140). We build resilience by learning about and caring for others. Together, people contribute to mutual growth. With this in mind, this design framework could also be used to foster shared environments for mindful reflection practices between people, e.g., family members, friends and colleagues. This environment can be a collaborative space where people can support each other while expressing and reflecting on their life experiences.

It is important stating that this space should not encourage a certain dependency on others in order to commit to mindful reflection practices. According to Taylor (1991), even though it is important for us to interact with significant people in our lives, "we should strive to define ourselves on our own to the fullest degree possible" (p. 34).

Having a collaborative space for mindful reflection practices raises questions about the social aspects of this type of interaction over time (see Figure 31). Could an interaction in which two or more people express their feelings on a shared drawing environment for instance constitute a new type of conversation? Would this type of conversation create understanding between the involved people? How would this understanding be given? Would this conversation take place simultaneously or through individuals taking turns to express themselves? Just as we are able to recognize someone's voice, or handwriting, what other social patterns generated by the proposed group mindfulness reflection practices would we be able to identify?

These questions fall outside of the scope of this design research, and deserve special attention in future investigations due to their relevance to the development of resilience, self-awareness, and mindful behaviours.

4 CONCLUSION
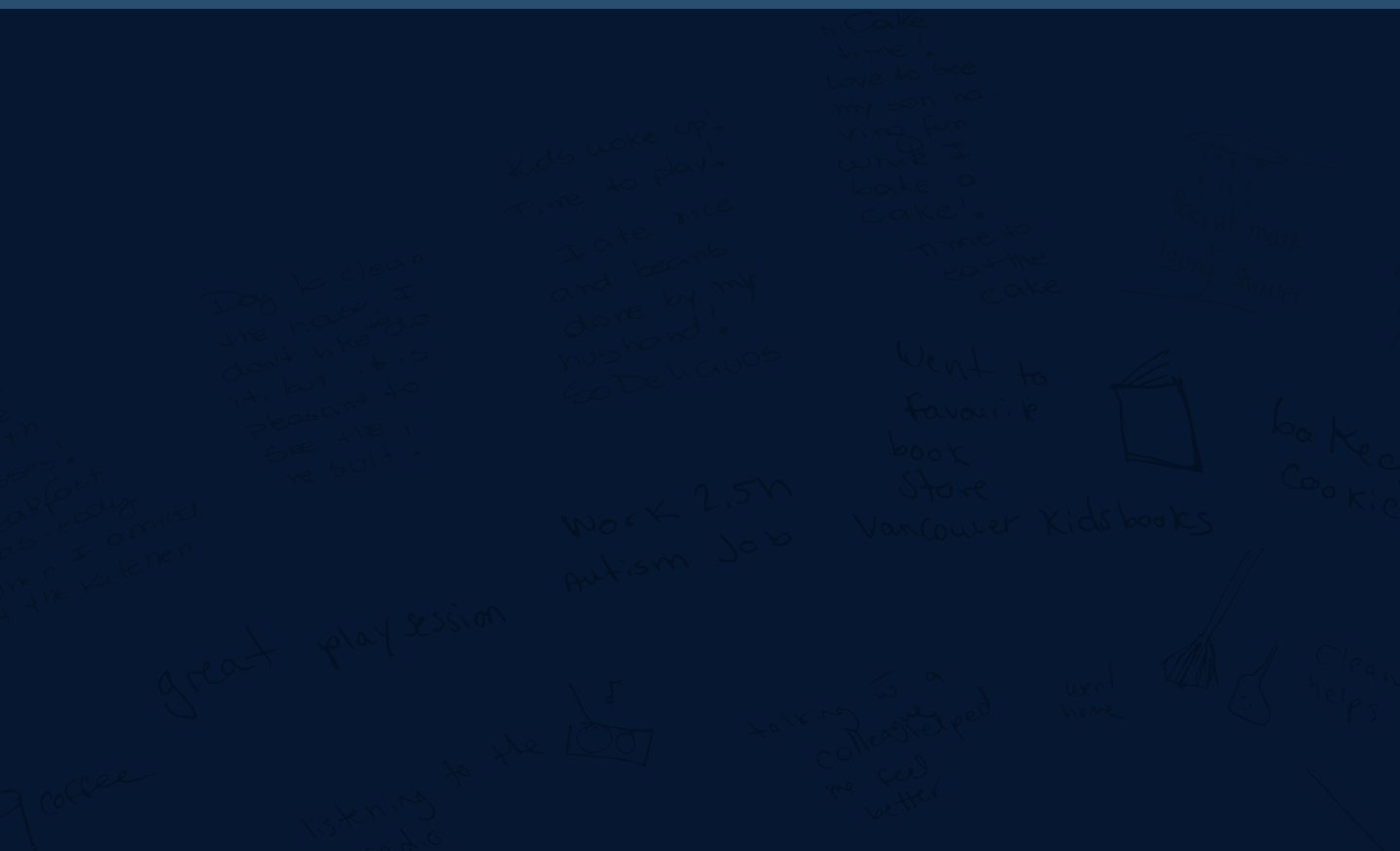
Recent statistics show that more than one quarter of the Canadian population is "quite a bit" or "extremely" stressed, and that work is considered the main factor for causing stress in this group (Crompton, 2011; Government of Canada, 2015). Since working is one of the everyday activities people has in life, researchers in various fields can contribute to ways of enhancing how we perceive and relate with it. In this design research, I explored ways to develop resilience to everyday life stress through how we perceive, express and contemplate our everyday life experiences.

Being aware of ourselves and our surroundings can contribute to how we see and experience our lives. This awareness opens up space for an investigation into how we experience our inner selves in the context of the outer world by accessing our authentic values, morals and understanding of who we are, where we come from, and what we want to be; it generates self-knowledge (Taylor, 1991). But we cannot find this awareness through means other than working through this ourselves; "we discover what we have it in us to be by becoming that mode of life, by giving expression in our speech and action to what is original in us" (Taylor, 1991, p. 61).

Individuals' will to develop self-awareness was demonstrated through the participatory design research conducted. Through co-creation and journaling activities, participants communicated how they perceived themselves and their everyday lives from an emotional, mental, physical and social perspective, expressing a deep understanding of how these aspects permeate their daily routine, at work and all day long. Can this mindful connection between participants and their daily experiences be attributed to the fact that they reserved a moment in their life to participate in this research? Are these understandings a reflection of their commitment to reserve—and immerse themselves into—a reflective moment for questioning their own lives?

Awareness of self and space is also a behaviour identified in nature, as observed in how trees exercise resilience by embodying their life experiences. Trees' plasticity can be noticed in how they distribute their branches and position themselves in the environment they grow. This plasticity can also be seen through the ring formations on the interior of trees trunks. The rings are a type of self-expression that register not only time, but also the experiences lived by a tree—how they live and behave in context with their environment. Can we say that every new ring that is formed represents new knowledge as an expression of how this tree continually evolved over previous experiences? Are they also a representation of how trees position themselves in preparation for the coming future?

The *Design Framework for Creating Mindful Reflection Practices* was developed throughout this research work as a model for designing objects, systems and services intended to make

us mindfully perceive ourselves in the context of the stories we live. This framework opens a space for discussing the validity and efficacy of creating mindful reflection practices—that is neither intrusive nor persuasive—to encourage the development of resilience through self-awareness.

Besides the conclusions reached here, further research on the following questions in relation to the framework is necessary: how to ensure that individuals are mindfully committed to their perceptions through what they feel, to their self-expressions through everyday actions and behaviours, and through their contemplation of own expressed thoughts, values and cultures; how to be mindful of the knowledge implicit in our everyday expressions; how to ensure individuals do not rely only on their own life experiences, but on seeing the perspectives of other people (in society), and other things that are part of their lives.

Ultimately, more iterations on the design artefacts—*Journal Sculpture* and *Lifetime Scroll*—and holistic visualizations presented here are also expected, and I hope for other researchers and practitioners of design and countless other areas to create ways of developing self-awareness and mindfulness in individuals' lives. That being said, I also state the importance of further designing the *Design Framework for Creating Mindful Reflection Practices* so that it can be both incremented and challenged. This is an invitation for the design of new circles and evolving spirals of self and collective knowledge.

My k... woke me up with kisses!
Breakfast was ready when I arrived at the kitchen

Pleas... see the re sult!

Work 2.5h
Autism Job

boo...
Sto...
Vanco...

great play session

listening to the radio

talking w a colleague... me feel better

COFFEE

COFFEE w husband

Slept in on my day off

Had coffee and lunch

Went for a bike along the seawall it was a beautiful day

WACHED NETFILX - BUT DIDN'T HELP TO DE-STRESS JUST AVOIDED THINKING.

CH...

...ed

...ught up with my peers

...RKED ON PRESENTATION

I PAINTED A LITTLE BIT

WORK WORK WORK

PAUSE FOR LUNCH (YEA!)

Re...

Read... on m... b... th...

My presentation went so well
Talking, working ...ng about ... persistence
Lunch the... ...SING

References

Arrien, A. (1993). The four-fold way: *Walking the paths of the warrior, teacher, healer, and visionary.* New York, NY: HarperCollins.

Cohen, R. A. (2011). Yerkes–Dodson Law. In J. S. Kreutzer, J. DeLuca, & B. Caplan (Eds.), *Encyclopedia of clinical neuropsychology* (pp. 2737–2738). New York: Springer. Retrieved from http://link.springer.com/reference-workentry/10.1007/978-0-387-79948-3_1340

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*(4), 385. doi:10.2307/2136404

Crompton, S. (2011). What's stressing the stressed? Main sources of stress among workers. *Canadian Social Trends, 92,* 44–51.

Derrida, J. (1996). *Archive fever: A Freudian impression.* (E. Prenowitz, Trans.). Chicago, IL: The University of Chicago Press. (Original work published 1995)

DiCorcia, J. A., & Tronick, E. (2011). Quotidian resilience: Exploring mechanisms that drive resilience from a perspective of everyday stress and coping. *Neuroscience & Biobehavioral Reviews, 35*(7), 1593–1602. doi:10.1016/j.neubiorev.2011.04.008

Dorrestijn, S., & Verbeek, P. P. (2013). Technology, wellbeing, and freedom: The legacy of utopian design. *International Journal of Design, 7*(3), 45–56.

Government of Canada, Statistics Canada. (2015). *Perceived life stress, 2014*. Retrieved from http://www.statcan.gc.ca/pub/82-625-x/2015001/article/14188-eng.htm

Heart and Stroke Foundation of Canada. (2013). *Coping with stress*. Retrieved from http://www. heartandstroke.com/site/c.ikIQLcMWJtE/b.5590155/k.3B4A/Heart_disease__Coping_with_stress.htm

Kolb, D. A. (1976). Management and the learning process. *California Management Review, 18*(3), 21–31.

Manzini, E & Till, J. (2015). The Cultures of Resilience Base Text. In E. Manzini & J. Till (Eds.), *Cultures of Resilience: Ideas*. (pp. 9–12). London: Hato Press.

McGonigal, J. (2012, Oct). *Building resilience by wasting time*. Harvard Business Review, 90(10). Retrieved from https://hbr.org/2012/10/building-resilience-by-wasting-time

McGonigal, K. (2015). *The Upside of stress: Why stress is good for you, and how to get good at it*. New York, NY: Avery.

Martin, B., & Hanington, B. M. (2012). *Universal methods of design: 100 ways to research complex problems, develop innovative ideas, and design effective solutions*. Beverly, MA: Rockport Publishers.

Mental Health Commission of Canada. (2015). *Informing the future: Mental health indicators for Canada*. Ottawa, ON: Author.

Narby, J. (2005). *Intelligence in nature: An inquiry into knowledge*. New York, NY: Jeremy P. Tarcher/Penguin.

Sanders, E. B., & Stappers, P. J. (2012). *Convivial toolbox: Generative research for the front end of design.* Amsterdam: BIS; Enfield: Publishers Group UK.

Taylor, C. (1991). *The malaise of modernity.* Toronto, ON: Anansi.

Turkle, S. (2007). Introduction: The things that matter. In S. Turtle (Ed.), *Evocative objects: Things we think with.* (pp. 3–10). Cambridge, MA: The MIT Press.

Tufte, E. (1990). *Envisioning Information.* Cheshire, CT: Graphic Press.

Walker, S. (2011). *The spirit of design: Objects, environment and meaning.* Washington, DC: Earthscan.

List of figures

Co-creation research: description of activities

This co-creation session allowed participants to express how they perceive stress in their current work routine; identify possible sources of stress; understand their thoughts, feelings and usual reactions to these stressors; and express what they envision as possible de-stressors.

During this session, three participants shared a set of creative materials including colour markers, crayons, photographs of daily situations, string and scrap paper. During the activities, they talked to each other about their routine, how they experience stress, and the possibilities for representing what they had in mind, further explaining what they meant to communicate through their creations.
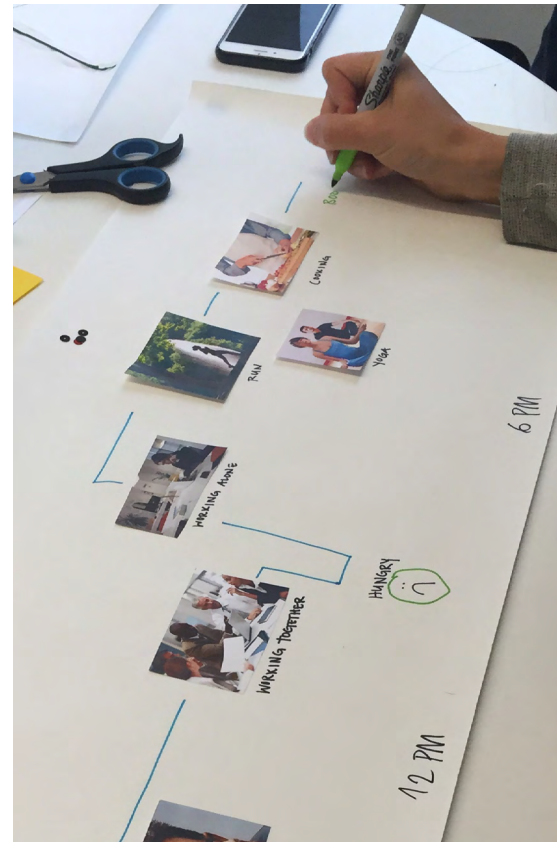
Figure 32. **How is your typical workday?** Participants individually created a timeline with a collage of the activities they usually engage in a typical workday. They also identified the moments or situations they consider very stressful or which they usually have a difficult time dealing with; those they consider mildly stressful, which can create some tension but which they can manage well; and moments of calm, with no or very low levels of stress.
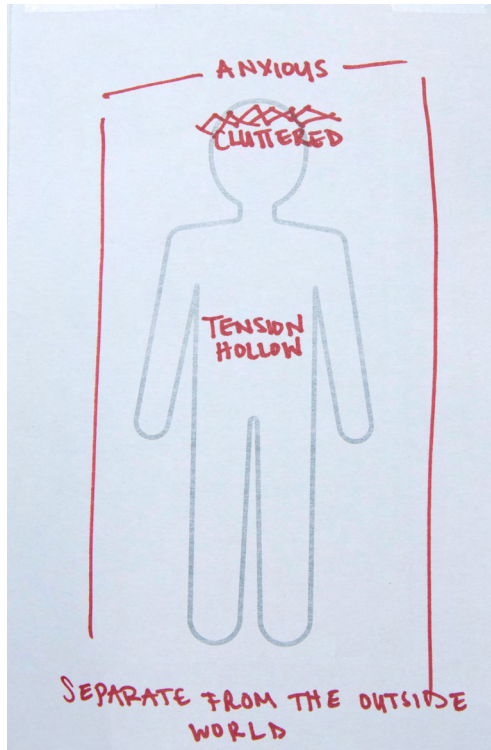
Figure 33. **How do you usually feel or behave under stress?** Participants expressed on a template of a human figure what they feel and how they behave under everyday stress. Some of the things they drew and wrote were: overwhelmed, desire to lash out at someone, anxiety, tension and hollow stomach.
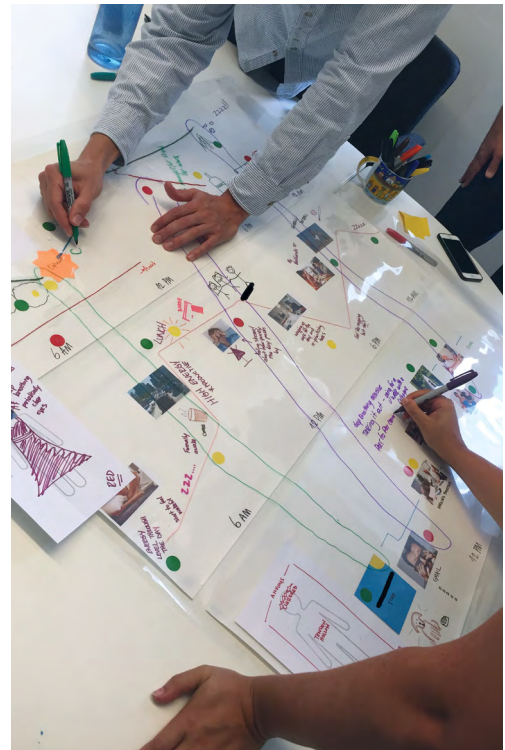
Figure 34. **How do you envision yourself dealing with these stressful moments?** Besides identifying similarities in their timelines, such as when they perceive stress and how it is distributed throughout their day, participants shared possible de-stressors they could use, or behaviours they wanted to build that could help them better deal with stressful situations in the future.

Appendix B

Ethics clearance

PANEL ON RESEARCH ETHICS
Navigating the ethics of human research

TCPS 2: CORE

Certificate of Completion

This document certifies that

Rodrigo Jose dos Santos

has completed the Tri-Council Policy Statement:
Ethical Conduct for Research Involving Humans
Course on Research Ethics (TCPS 2: CORE)

Date of Issue: **10 November, 2015**

Figure 35. Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans Course on Research Ethics (TCPS 2: CORE). Certificate of Completion.

Research + Industry Office

Emily Carr University of Art and Design
Research Ethics Board

May 2, 2016

MEMORANDUM TO:
  Haig Armen, Assistant Professor, Principal Investigator, Faculty of Design + Dynamic Media
  Rodrigo dos Santos, Graduate Student Co-Investigator, Faculty of Design + Dynamic Media

Re: Application for Ethics Approval (File #2016030711)

Thank you for sending in the revisions requested by the ECU-REB Board, to your REB application for the project, **'Stressless: design strategies to build resilience to everyday work-related stress'** (file #2016030711), which were reviewed by the Chair of the ECU-REB, Dr. Glen Lowry, on April 29, 2016. As a result of that review, this project **has full approval to proceed with participant research.**

The dates for this approval are April 29, 2016 – April 28, 2017.
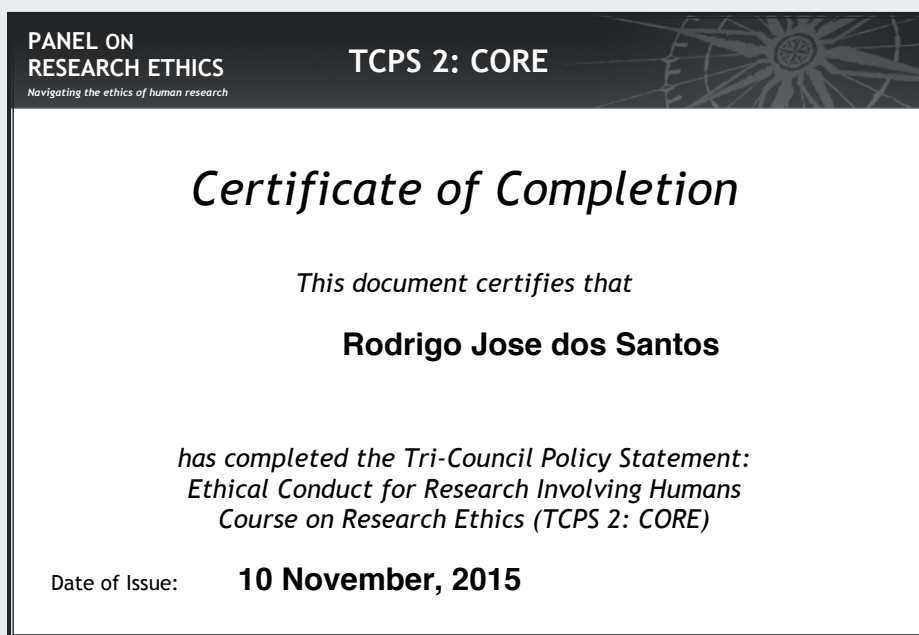
Please note, the following:

- This approval extends until April 28, 2017, after which time renewal is available. To ensure timely renewal, you are invited to use **FORM 204.1 Annual Review / Request to Amend Approved Research** to communicate the progress of the research and to request any required changes. This form is provided with this letter.
- If you need to make any changes to any aspect of the approved application, you are required to inform the ECU-REB *prior* to the implementation of changes. **FORM 204.1 Annual Review / Request to Amend Approved Research** should be used to communicate changes. This form is provided with this letter.
- In the event of an adverse event associated with the participant research, the applicant must notify the ECU-REB within five (5) days. **FORM 204.2 Adverse Incident Report** is available for you to use to communicate these incidents. This form is provided with this letter.
- At the conclusion of the project, please complete **FORM 204.3 Research Ethics Completion** so that the file can be closed in an appropriate manner. This form is provided with this letter.

This signed Approval Status Letter is an official ethics status document. Please keep it for reference purposes. If you have not received a signed paper copy of this letter please contact me at ethics@ecuad.ca. The approval status listed above, the date of this letter, and the ECU-REB file number should all appear on materials that are circulated to the participants in this way: "This project has Full Research Ethics Approval from the Emily Carr University Research Ethics Board (April 29, 2016, ECU-REB #2016030711). If you have any comments or concerns about ethical issues in the research, you are invited to contact the Emily Carr University REB Coordinator at ethics@ecuad.ca or (604) 844-3800 ext 2848.".

...ed research, researchers must adhere to the research ethics protocols or procedures ...arch, where they exist. Thus, the researcher is expected to share notice of this ...or sites of research that have their own research ethics protocols. If further ethics ...new partners or sites of research become part of the project, the ECU-REB should be

...u much success with this research.

... Faculty of Design + Dynamic Media
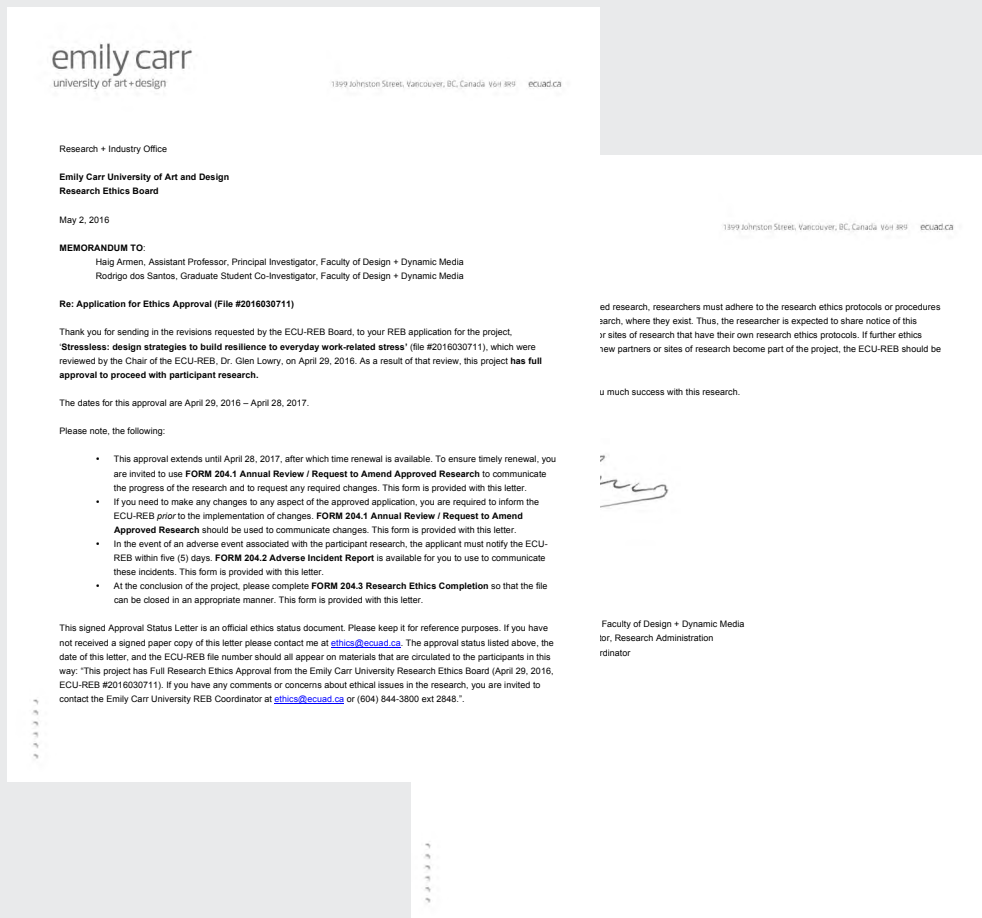...tor, Research Administration
...rdinator

Figure 36. Ethics application approval letter. Emited by the Emily Carr University of Art and Design Ethics Research Board.

A CRITICAL & PROCESS DOCUMENTATION PAPER
SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
MASTER OF DESIGN

EMILY CARR UNIVERSITY OF ART + DESIGN